

ADD engineering

Germany | India | Russia

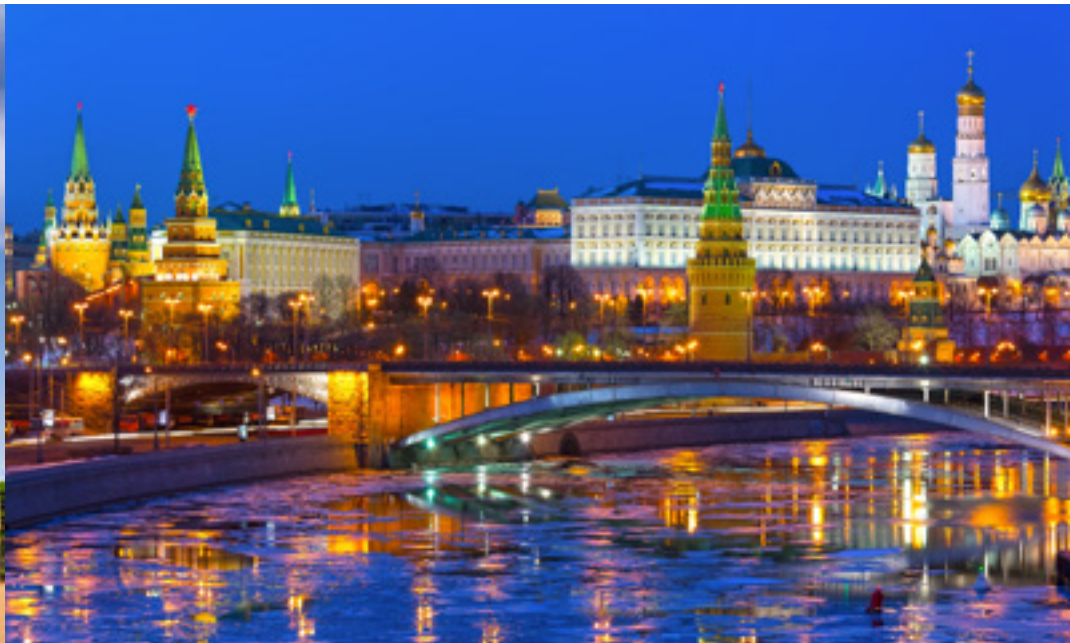


**TOOLS FOR MODERN
LIGHTWEIGHT MATERIALS**

Germany | India | Russia



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More and more applications are making use of lightweight materials

Where weight reduction with consistent stability plays a major role, modern materials are capturing ever more applications. Products of lightweight design, particularly those made of fibre composite materials and multimaterial systems (CFRP - metal multilayer composites), are also becoming increasingly common in the automotive sector, as they spread from their origins in the aerospace industry. Here lightweight design is also playing a crucial role in the introduction of electric mobility. Lightweight materials have in the meantime become established in wind energy converters and are increasingly common in machine tools, industrial robots and the consumer sector. In intensive collaboration with our customers, for example from the aerospace sector, ADD ENGINEERING has created a comprehensive range of tools for the reliable machining of modern materials.

The basics for machining modern lightweight materials:

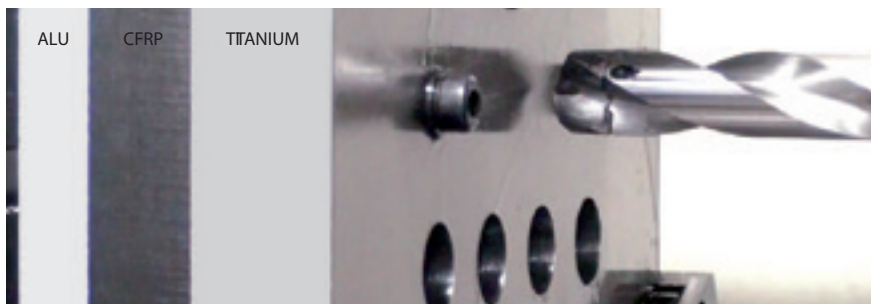
- ▶ During tool design the focus is on the avoidance of delamination, formation of burrs or fibre projections on the part.
- ▶ PCD-tipped inserts or special diamond coatings on solid carbide tools provide long tool lives even with extremely abrasive materials.
- ▶ The ADD ENGINEERING range includes tools for drilling, milling and reaming CFRP, GFRP, titanium, aramide, soft foam, plastics and CFRP-metal multilayer composites (stacks).



A wide range of lightweight materials is used, depending on the requirement on the part, and reliable machining represents a real challenge. For drilling milling fibre-reinforced

plastics such as CFRP and GFRP as well as difficult to machine materials such as titanium and Inconel, ADD ENGINEERING has specially developed new tool solutions to address these specific

requirements. The portfolio covers standard products made of solid carbide, PCD and CVD tipped tools and also customer-specific custom solutions.



Stacks (CFRP-metal multilayer composites)

To reduce weight, prevent corrosion and variations in thermal expansion, these days primarily CFRP-metal multilayer composites are used in aircraft programs, particularly for structural parts subject to high loads. To machine these stacks (different materials one on top of the other, e.g. CFRP/titanium or CFRP/aluminium), the keyword is „one-shot“. In the case of diameters greater than ½ inch or very thick stacks, machining in two steps is however recommended.

Over many years ADD ENGINEERING has obtained an understanding of the process of mechanically machining the various materials. The result is tools that, despite varying requirements, produce bores in H8 quality with low process heat in titanium, and prevent the adhesion of aluminium and scratches in the CFRP.



Titanium

Titanium is particularly suitable for applications in which high corrosion resistance, strength and low weight are required. Titanium has a low thermal conductivity and is also very ductile, aspects that require a full understanding of the process during machining. Heat must be removed from the shear zone as quickly as possible to prevent deformation of the workpiece material. Otherwise increased burr formation and jamming of the drill may occur during drilling. This problem often makes itself apparent with a noticeable whistling sound. Milling operations can be undertaken dry, depending on the cutting depth.

Fibre-reinforced plastics (CFRP/GFRP)

The specific properties of fibre materials such as glass fibre or carbon fibre can only be fully utilised with a matrix material. Here predominantly thermosetting epoxy resin, polyester resin, melamine resin and polyurethane or thermoplastic matrix materials such as PEEK, PPS and PTFE are used.

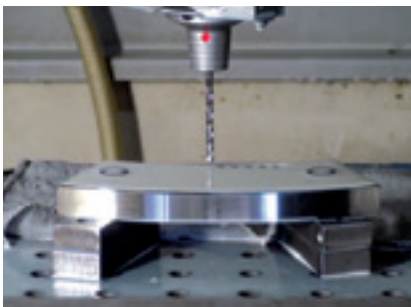
The mechanical properties of fibre composi-

te materials can be varied, e.g. via the portion of the volume formed by the fibres, the sequence of the layers and many other aspects. As the fibres, above all carbon fibres, are very abrasive in relation to the cutting material, increased cutting edge performance is required if the portion of fibres in the plastic increases (> 60 %).



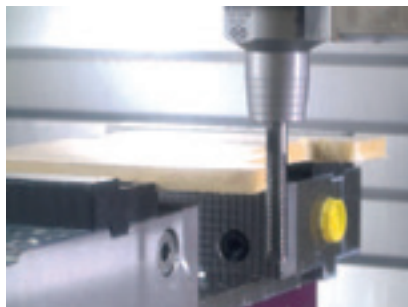
ADVANTAGES

Drilling and milling carbon fibre reinforced plastics without fibre tearing (delamination).



Nickel-based alloys

Nickel-based alloys are mostly used in extreme environments due to their very high corrosion resistance. In particular in high temperature applications in which steel and aluminium are unstable. High cutting temperatures during machining require tools with sharp edges. During drilling polished chip flutes also ensure reduced friction and prevent the temperature further increasing. Nickel-based alloys are largely used for the manufacture of compressor and turbine blades, as well as for combustion chambers in gas turbines.



Aramid

The gold-yellow aramide fibres are primarily known under the name Kevlar. They are resistant to just about everything. They have a very high strength, a high impact strength and ultimate strain. Machining is undertaken dry. Aramide tends to fray. However it is still possible to achieve clean edges on parts, for example on milling using alternating high-performance teeth.



Honeycombs

Honeycombs are mostly three-layer composite structures. The inner middle layer is also termed the honeycomb. As a rule it comprises cardboard, resin-soaked paper, fibre plastic or thin aluminium films. The two skins can be made of paper, plastic, fibre composite materials or sheet metal. In most cases all three layers are bonded together. A honeycomb is on its own actually unstable, when combined the honeycomb structure however features low weight without reducing the flexural strength. These sandwich panels have a wide range of applications, for instance in aircraft manufacture, fair stand construction and the manufacture of mobile homes.

High-volume milling cutter for aluminium machining – OptiMill®-SPM (Structural Part Machining)

In the aerospace industry, aluminium structural parts such as frame elements or wing parts are generally milled from solid material. Often more than 90% of the raw part is cut away. New machine generations with sufficient drive power and the necessary spindle speeds allow for an efficient high-performance machining of aluminium parts.

ADD ENGINEERING has developed a new range of aluminium roughing milling cutters. The OptiMillSPM (Structural Part Machining) high-performance milling cutters have a cutting edge length that corresponds to approx. 60% of the diameter. This represents the maximum con-

tact depth for the high-performance milling of aluminium. Thanks to the high positive cutting edge geometry and the optimised chip spaces, the cutting force of PCD milling cutters is reduced by up to 15%. Even when milling on standard machines, this reduction in cutting force results in more efficient machining parameters, and hence in improved performance.

Bending of the tool during the machining process is prevented by the form of the milling cutter (bottleneck). A further benefit of this conical design is the clearance that is created between the wall of the part and the milling cutter shank. Particularly with deep pockets,

this prevents scratching of the part wall caused by chips.

The OptiMill-SPM tools are available in the diameter range from 6 to 50 mm, both as solid carbide and as PCD variants in the standard range. The product portfolio also includes variants with the CFS replaceable head system.



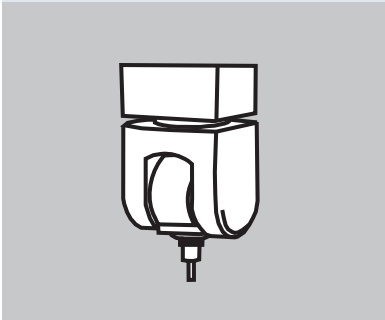


ADVANTAGES

- High material removal rate
> 8 l/min with 32 mm diameter with HSK
- Soft, low-vibration cutting thanks to highly positive rake angle and increased axis angle: Higher quality, lower power consumption
- Improved surface quality by reduced power consumption
- High stability thanks to optimally embedded PCD blades: No notching effects or protrusions
- Unhindered chip flow: No corners or sharp edges in the chip flute



Machining centres / gantry machines with moveable gantry



► Properties

- High rigidity, stable machine design
- High spindle speeds, high torque
- Mostly HSK spindles with high radial run-out accuracy
- With internal coolant supply or MQL
- Variable feeds and spindle speeds
- Drilling cycles can be programmed – also with hiccup/pecking feed
- 5 axes
- Machining centre – machining compartment mostly enclosed
-> working area extraction
- Gantry – mostly open design -> extraction mounted separately

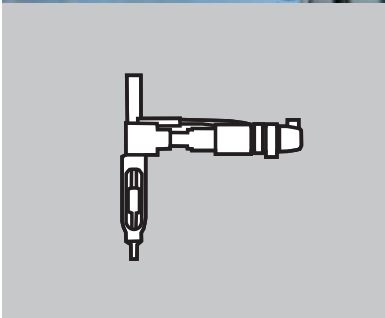
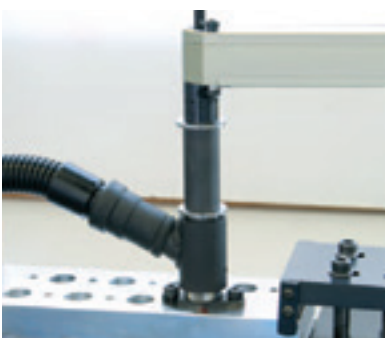
► Parts

- Machining centre – small to medium cubic parts
-> clamping fixture compact and stable
- Gantry – large parts -> large, often only moderately stiff clamping fixtures

► Tools

- Machining centre – shorter tools -> Tool lengths are mostly only dependent on the workpiece contour
- Gantry – longer tools -> The length of the tool is often dependent on the required extraction or the guide bush

Drill feed units



► Properties

- Light machine design
- Only mode rate spindle run-out
- With internal coolant supply or MQL
- In the case of pneumatic drill feed units the spindle speeds and feeds can only be changed by modifying the gearing
- Mostly with hiccup/pecking feed – varies depending on the manufacturer
- Vibration cannot be fully suppressed
- Only one feed axis
- Machining time significantly increase

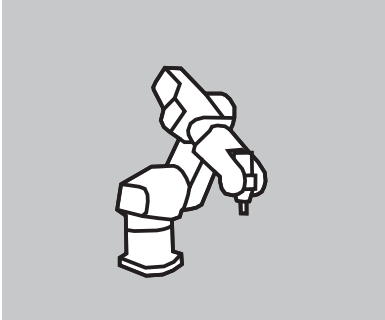
► Parts

- Large parts – machine goes to the part
- Used with fixture mounted on parts

► Tools

- Tools are to some extent guided in bushes
-> exact tool handling extremely important on fitting
- Extraction requires optimised chip formation
- Large tool or chip space lengths due to bushes and extraction
- Standard tools with special shanks or threaded steel shafts required

Robots



► Properties

- High spindle speeds and feeds possible depending on spindle
- Less stable system due to the toothed-belt drive for the axes
- Accuracy of repetition max 0.1 - 0.2 mm (makes it more difficult to find a hole already drilled)
- With internal coolant supply or MQL
- Drilling cycles can be programmed - also with hiccup/pecking feed

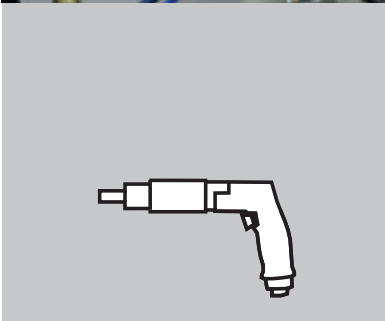
► Parts

- Flexible during the machining of different parts
- Larger parts

► Tools

- Drilling tools with diameter > 8 mm only with leading stage for stabilisation
- The length of the tools is mostly dependent on the required extraction used or the guide bush

Hand-held machinest



► Properties

- Mostly pneumatically powered machines
- Feed force is defined by the operator
- Operator-dependent machining results
- Controlled feeds on machines with hydraulic brake
- Spindle speed can mostly not be adjusted
- Without cooling - only from the exterior
- Radial run-out cannot be adjusted
- Machine economical to procure
- Tool clamping using collet chuck

► Parts

- Large parts - machine goes to the part

► Tools

- Tool lengths dependent on the machining point to be reached
- Special geometry to prevent jamming of the tool
- Correct perpendicular drilling only possible with fixture bushes or "tripod"





Drills for modern materials

For machining bores in modern materials such as CFRP, GFRP, or CFRP-metal multilayer composites (titanium and aluminium), ADD ENGINEERING has developed special tools that prevent delamination and fibre projections. Depending on the application, they have special geometries, high-performance diamond coatings or cost-effective replaceable head systems.

Drill range selection aid

Drill range product tables

Replaceable head holders TTS

Thread adapters for drill feed units

Drilling tools for hand-held machines

Hand-held machines

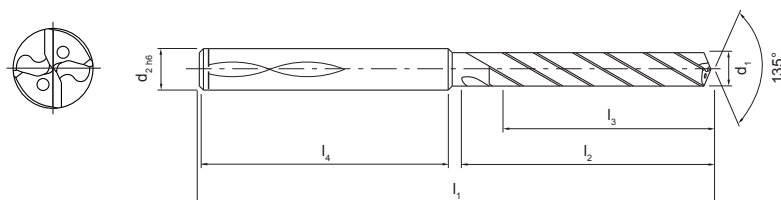
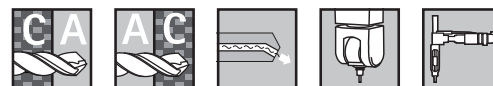
Suitable			Suitable in some situations			MEGA-Stack-Drill-CA	MEGA-Stack-Drill-CT	MEGA-Stack-Drill-Robot-CA	MEGA-Stack-Drill-Robot-CT	MEGA-Drill-Composite-MD-Micro	
Material				Material examples							
N	N1.1	Aluminium, non-alloyed and alloyed < 3 % Si	Alloy 2024, Alloy 7075, Al99								
	N3.1	Graphite									
	N4.1	Plastic, thermoplastic	PA, PE, PC, PS, PVC, PP, PTFE, POM, PMMA								
	N4.2	Plastic, thermosetting plastic (duroplast)	PU, PF, EP, UP, VE, CR								
	N4.3	Plastic, foam	EPS, PUR, PVC-E, PS-E, PP-E								
C	C1.1	Plastic matrix, aramid fibre reinforced plastic (AKF)	Nomex, Kevlar, Twaron, KOREX								
	C1.2	Plastic matrix (thermosetting), CFK/GFK	IMS, HTA								
	C1.3	Plastic matrix (thermoplastic), CFK/GFK	GMT-PP, PEEK								
	C2.1	Plastic matrix, carbon fiber reinforced (CFC)	CF222, CF225, CF226, CF227, CF260								
	C4.1	Sandwich construction, honeycomb core of paper									
	C4.2	Sandwich construction, honeycomb core of aluminium	PLASCORE PAMG-XR1 5052, PCGA-XR1 3003, PAMG-XR1 5056, Micro-Cell (Alloy Core of 5052/5056)								
	C4.3	Sandwich construction, honeycomb core of plastic and fibre composite materials	CORMASTER, TUBUS, KOREX, HFT-G, TPU, HFT, HRH (HRH-10, HRH-310, HRH-78, HRH-49, HRH-327), HDC-F								
	C4.4	Sandwich construction, core of rigid foam	AIREX R63, AIREX C70, ROHACELL IG-F								
	C5.1	Stack (hybrid structure) CFK-aluminium	IMS/HTA + Alloy 2024/6061/7075								
	C5.2	Stack (hybrid structure) CFK-titanium/stainless steel	IMS/HTA + TiAl6V4/AMS4905								
S	S2.1	Titanium, titanium alloy	TiAl6V4								
	S4.1	Heat resistant super alloys, Ni, Co, and Fe based	Hardox, Hastelloy, Incoloy, Inconel, NIMONIC, Stellite, Waspaloy								
Drill diameter					3,00-12,00	3,00-12,00	8,00-20,00	8,00-20,00	0,50-2,90		
Drilling depth					5xD	5xD	5xD	5xD	5xD		
Number of blades					2	2	2	2	2		
Guide chamfers					4	3	4	3	2		
Coating					uncoated	uncoated	uncoated	uncoated	Diamond		
Bore tolerance					IT9	IT9	IT9	IT9	IT9		
Internal coolant supply					X	X	X	X			
External coolant supply									X		
Shank form HA (to DIN 6535)					X	X	X	X	X		
Shank form HB (to DIN 6535)											
Shank form HE (to DIN 6535)											
Page					16	19	22	26	30		

	MEGA-Drill-Composite-MD	MEGA-Drill-Composite-UDX	TTD-Composite-Drill	MEGA-Drill-Aramid	MEGA-Drill-Inco	MEGA-Drill-Titan	Tritan-Drill	MEGA-Stack-Drill-Hand-CTA	MEGA-Stack-CoreDrill-Hand-CTA	MEGA-Stack-Reamer-Hand-CTA	MEGA-Stack-Drill-Hand-CC
											
											
											
											
											
											
											
											
											
											
											
											
											
											
											
											
											
	2,50-12,00	3,00-12,00	12,00-32,00	3,00-12,00	3,00-12,00	3,00-12,00	5,00-20,00	2,00-13,02	4,00-12,00	4,00-13,02	2,00-13,02
	5xD	5xD	5xD	5xD	5xD	5xD	5xD	5xD	5xD	5xD	5xD
	2	2	2	2	2	2	2	3	3	4	4
	2	2	2	-	4	3	3	2	3	4	4
	Diamond	Diamond	uncoated	uncoated	uncoated	uncoated	TiAl	uncoated	uncoated	uncoated	uncoated
	IT9	IT9	IT9	IT9	IT9	IT9	IT9	IT9	IT9	IT9	IT9
		X	X		X	X	X				
	X			X				X	X	X	X
	X	X	X	X	X	X	X	X	X	X	X
	31	34	37	39	40	41	42	54	64	66	74

MEGA-Stack-Drill-CA

Solid carbide twist drill

SCD43 (5xD), internal coolant supply



Design:

Drill diameter:	3,00 - 12,00 mm
Bore tolerance:	IT 8
Shank form:	HA
Coating:	uncoated
Number of blades:	2
Guide chamfer:	4
Tip angle:	120°
Helix angle:	34°

Application: Multi-layer out of CFRP / aluminium

Dimensions							Specification	Order number	
d ₁	d ₂ h6	l ₁	l ₂	l ₃	l ₄	z			
3,00	6	66	28	23	36	2	SCD431-0300-2-4-135HA05-HU717	30514052	○
3,10	6	66	28	23	36	2	SCD431-0310-2-4-135HA05-HU717	30514053	○
3,20	6	66	28	23	36	2	SCD431-0320-2-4-135HA05-HU717	30514054	○
3,30	6	66	28	23	36	2	SCD431-0330-2-4-135HA05-HU717	30514055	○
3,40	6	66	28	23	36	2	SCD431-0340-2-4-135HA05-HU717	30514056	○
3,50	6	66	28	23	36	2	SCD431-0350-2-4-135HA05-HU717	30514057	○
3,60	6	66	28	23	36	2	SCD431-0360-2-4-135HA05-HU717	30514058	○
3,70	6	66	28	23	36	2	SCD431-0370-2-4-135HA05-HU717	30514059	○
3,80	6	74	36	29	36	2	SCD431-0380-2-4-135HA05-HU717	30514060	○
3,90	6	74	36	29	36	2	SCD431-0390-2-4-135HA05-HU717	30514062	○
4,00	6	74	36	29	36	2	SCD431-0400-2-4-135HA05-HU717	30514063	○
4,10	6	74	36	29	36	2	SCD431-0410-2-4-135HA05-HU717	30514064	○
4,176 5/32"	6	74	36	29	36	2	SCD431-04176-2-4-135HA05-HU717	30514065	○
4,20	6	74	36	29	36	2	SCD431-0420-2-4-135HA05-HU717	30514066	○
4,30	6	74	36	29	36	2	SCD431-0430-2-4-135HA05-HU717	30514067	○
4,40	6	74	36	29	36	2	SCD431-0440-2-4-135HA05-HU717	30514068	○
4,50	6	74	36	29	36	2	SCD431-0450-2-4-135HA05-HU717	30514070	○
4,60	6	74	36	29	36	2	SCD431-0460-2-4-135HA05-HU717	30514071	○
4,70	6	74	36	29	36	2	SCD431-0470-2-4-135HA05-HU717	30514072	○
4,80	6	74	36	29	36	2	SCD431-0480-2-4-135HA05-HU717	30514073	○
4,837 3/18"	6	74	36	29	36	2	SCD431-04837-2-4-135HA05-HU717	30514074	○
4,90	6	82	44	35	36	2	SCD431-0490-2-4-135HA05-HU717	30514075	○
5,00	6	82	44	35	36	2	SCD431-0500-2-4-135HA05-HU717	30514076	○
5,10	6	82	44	35	36	2	SCD431-0510-2-4-135HA05-HU717	30514077	○
5,20	6	82	44	35	36	2	SCD431-0520-2-4-135HA05-HU717	30514078	○
5,30	6	82	44	35	36	2	SCD431-0530-2-4-135HA05-HU717	30514079	○
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5,50	6	82	44	35	36	2	SCD431-0550-2-4-135HA05-HU717	30514081	○
5,55	6	82	44	35	36	2	SCD431-0555-2-4-135HA05-HU717	30514082	○
5,565 7/32"	6	82	44	35	36	2	SCD431-05565-2-4-135HA05-HU717	30514083	○
5,60	6	82	44	35	36	2	SCD431-0560-2-4-135HA05-HU717	30514084	○
5,70	6	82	44	35	36	2	SCD431-0570-2-4-135HA05-HU717	30514085	○

MEGA-Stack-Drill-CA

Solid carbide twist drill

SCD43 (5xD), internal coolant supply

ø 5,80 – 9,50

Dimensions							Specification	Order number	
d ₁	d ₂ h ₆	l ₁	l ₂	l ₃	l ₄	z			
5,80	6	82	44	35	36	2	SCD431-0580-2-4-135HA05-HU717	30514086	○
5,90	6	82	44	35	36	2	SCD431-0590-2-4-135HA05-HU717	30514087	○
6,00	6	82	44	35	36	2	SCD431-0600-2-4-135HA05-HU717	30514088	○
6,10	8	91	53	43	36	2	SCD431-0610-2-4-135HA05-HU717	30514089	○
6,20	8	91	53	43	36	2	SCD431-0620-2-4-135HA05-HU717	30514090	○
6,30	8	91	53	43	36	2	SCD431-0630-2-4-135HA05-HU717	30514091	○
6,365 1/4"	8	91	53	43	36	2	SCD431-06365-2-4-135HA05-HU717	30514092	○
6,40	8	91	53	43	36	2	SCD431-0640-2-4-135HA05-HU717	30514093	○
6,50	8	91	53	43	36	2	SCD431-0650-2-4-135HA05-HU717	30514094	○
6,60	8	91	53	43	36	2	SCD431-0660-2-4-135HA05-HU717	30514095	○
6,70	8	91	53	43	36	2	SCD431-0670-2-4-135HA05-HU717	30514096	○
6,80	8	91	53	43	36	2	SCD431-0680-2-4-135HA05-HU717	30514097	○
6,90	8	91	53	43	36	2	SCD431-0690-2-4-135HA05-HU717	30514098	○
7,00	8	91	53	43	36	2	SCD431-0700-2-4-135HA05-HU717	30514099	○
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7,20	8	91	53	43	36	2	SCD431-0720-2-4-135HA05-HU717	30514101	○
7,30	8	91	53	43	36	2	SCD431-0730-2-4-135HA05-HU717	30514102	○
7,40	8	91	53	43	36	2	SCD431-0740-2-4-135HA05-HU717	30514103	○
7,50	8	91	53	43	36	2	SCD431-0750-2-4-135HA05-HU717	30514104	○
7,60	8	91	53	43	36	2	SCD431-0760-2-4-135HA05-HU717	30514105	○
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7,953 5/16"	8	91	53	43	36	2	SCD431-07953-2-4-135HA05-HU717	30514109	○
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8,10	10	103	61	49	40	2	SCD431-0810-2-4-135HA05-HU717	30514111	○
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8,50	10	103	61	49	40	2	SCD431-0850-2-4-135HA05-HU717	30514115	○
8,60	10	103	61	49	40	2	SCD431-0860-2-4-135HA05-HU717	30514116	○
8,70	10	103	61	49	40	2	SCD431-0870-2-4-135HA05-HU717	30514117	○
8,80	10	103	61	49	40	2	SCD431-0880-2-4-135HA05-HU717	30514118	○
8,90	10	103	61	49	40	2	SCD431-0890-2-4-135HA05-HU717	30514119	○
9,00	10	103	61	49	40	2	SCD431-0900-2-4-135HA05-HU717	30514120	○
9,10	10	103	61	49	40	2	SCD431-0910-2-4-135HA05-HU717	30514121	○
9,20	10	103	61	49	40	2	SCD431-0920-2-4-135HA05-HU717	30514122	○
9,30	10	103	61	49	40	2	SCD431-0930-2-4-135HA05-HU717	30514123	○
9,40	10	103	61	49	40	2	SCD431-0940-2-4-135HA05-HU717	30514124	○
9,50	10	103	61	49	40	2	SCD431-0950-2-4-135HA05-HU717	30514125	○

Dimensions in mm.

Machining values see chapter technical information.

● Available ex stock Germany.

○ Standard tool not on stock (delivery on request).

MEGA-Stack-Drill-CA

Solid carbide twist drill

SCD43 (5xD), internal coolant supply

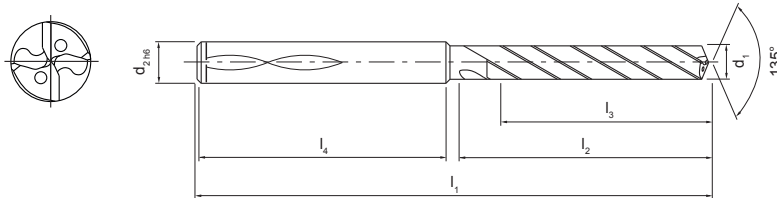
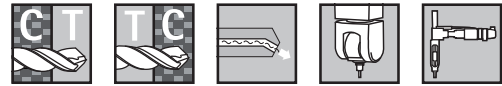
Ø 9,54 3/8" - 12,00

Dimensions							Specification	Order number	
d ₁	d ₂ h ₆	l ₁	l ₂	l ₃	l ₄	z			
9,54 3/8"	10	103	61	49	40	2	SCD431-09540-2-4-135HA05-HU717	30514126	○
9,60	10	103	61	49	40	2	SCD431-0960-2-4-135HA05-HU717	30514127	○
9,70	10	103	61	49	40	2	SCD431-0970-2-4-135HA05-HU717	30514128	○
9,80	10	103	61	49	40	2	SCD431-0980-2-4-135HA05-HU717	30514129	○
9,90	10	103	61	49	40	2	SCD431-0990-2-4-135HA05-HU717	30514130	○
10,00	10	103	61	49	40	2	SCD431-1000-2-4-135HA05-HU717	30514131	○
10,10	12	118	71	56	45	2	SCD431-1010-2-4-135HA05-HU717	30514132	○
10,20	12	118	71	56	45	2	SCD431-1020-2-4-135HA05-HU717	30514133	○
10,30	12	118	71	56	45	2	SCD431-1030-2-4-135HA05-HU717	30514134	○
10,40	12	118	71	56	45	2	SCD431-1040-2-4-135HA05-HU717	30514135	○
10,50	12	118	71	56	45	2	SCD431-1050-2-4-135HA05-HU717	30514136	○
10,60	12	118	71	56	45	2	SCD431-1060-2-4-135HA05-HU717	30514137	○
10,70	12	118	71	56	45	2	SCD431-1070-2-4-135HA05-HU717	30514138	○
10,80	12	118	71	56	45	2	SCD431-1080-2-4-135HA05-HU717	30514139	○
10,90	12	118	71	56	45	2	SCD431-1090-2-4-135HA05-HU717	30514140	○
11,00	12	118	71	56	45	2	SCD431-1100-2-4-135HA05-HU717	30514141	○
11,10	12	118	71	56	45	2	SCD431-1110-2-4-135HA05-HU717	30514142	○
11,133 7/16"	12	118	71	56	45	2	SCD431-11133-2-4-135HA05-HU717	30514143	○
11,20	12	118	71	56	45	2	SCD431-1135-2-4-135HA05-HU717	30514144	○
11,30	12	118	71	56	45	2	SCD431-1130-2-4-135HA05-HU717	30514145	○
11,40	12	118	71	56	45	2	SCD431-1140-2-4-135HA05-HU717	30514146	○
11,50	12	118	71	56	45	2	SCD431-1150-2-4-135HA05-HU717	30514147	○
11,60	12	118	71	56	45	2	SCD431-1160-2-4-135HA05-HU717	30514148	○
11,70	12	118	71	56	45	2	SCD431-1170-2-4-135HA05-HU717	30514149	○
11,80	12	118	71	56	45	2	SCD431-1180-2-4-135HA05-HU717	30514150	○
11,90	12	118	71	56	45	2	SCD431-1190-2-4-135HA05-HU717	30514151	○
12,00	12	118	71	56	45	2	SCD431-1350-2-4-135HA05-HU717	30514152	●

MEGA-Stack-Drill-CT

Solid carbide twist drill

SCD44 (5xD), internal coolant supply



Design:	
Bore diameter:	3,00 - 12,00 mm
Bore tolerance:	IT 8
Shank form:	HA
Coating:	uncoated
Number of blades:	2
Guiding chamfer:	3
Tip angle:	120°
Helix angle:	34°

Application: Multi-layer out of CFRP / titanium

Dimensions							Specification	Order number	
d1	d2 h6	l1	l2	l3	l4	z			
3,00	6	66	28	23	36	2	SCD551-0300-2-3-135HA05-HU621	30514153	○
3,10	6	66	28	23	36	2	SCD551-0310-2-3-135HA05-HU621	30514154	○
3,20	6	66	28	23	36	2	SCD551-0320-2-3-135HA05-HU621	30514155	○
3,30	6	66	28	23	36	2	SCD551-0330-2-3-135HA05-HU621	30514156	○
3,40	6	66	28	23	36	2	SCD551-0340-2-3-135HA05-HU621	30514157	○
3,50	6	66	28	23	36	2	SCD551-0350-2-3-135HA05-HU621	30514158	○
3,60	6	66	28	23	36	2	SCD551-0360-2-3-135HA05-HU621	30514159	○
3,70	6	66	28	23	36	2	SCD551-0370-2-3-135HA05-HU621	30514160	○
3,80	6	74	36	29	36	2	SCD551-0380-2-3-135HA05-HU621	30514161	○
3,90	6	74	36	29	36	2	SCD551-0390-2-3-135HA05-HU621	30514162	○
4,00	6	74	36	29	36	2	SCD551-0400-2-3-135HA05-HU621	30514163	○
4,10	6	74	36	29	36	2	SCD551-0410-2-3-135HA05-HU621	30514164	○
4,176 5/32"	6	74	36	29	36	2	SCD551-04176-2-3-135HA05-HU621	30514165	○
4,20	6	74	36	29	36	2	SCD551-0420-2-3-135HA05-HU621	30514166	○
4,30	6	74	36	29	36	2	SCD551-0430-2-3-135HA05-HU621	30514167	○
4,40	6	74	36	29	36	2	SCD551-0440-2-3-135HA05-HU621	30514168	○
4,50	6	74	36	29	36	2	SCD551-0450-2-3-135HA05-HU621	30514169	○
4,60	6	74	36	29	36	2	SCD551-0460-2-3-135HA05-HU621	30514170	○
4,70	6	74	36	29	36	2	SCD551-0470-2-3-135HA05-HU621	30514171	○
4,80	6	74	36	29	36	2	SCD551-0480-2-3-135HA05-HU621	30514172	○
4,837 3/18"	6	74	36	29	36	2	SCD551-04837-2-3-135HA05-HU621	30514173	○
4,90	6	82	44	35	36	2	SCD551-0490-2-3-135HA05-HU621	30514174	○
5,00	6	82	44	35	36	2	SCD551-0500-2-3-135HA05-HU621	30514175	○
5,10	6	82	44	35	36	2	SCD551-0510-2-3-135HA05-HU621	30514176	○
5,20	6	82	44	35	36	2	SCD551-0520-2-3-135HA05-HU621	30514177	○
5,30	6	82	44	35	36	2	SCD551-0530-2-3-135HA05-HU621	30514178	○
5,40	6	82	44	35	36	2	SCD551-0540-2-3-135HA05-HU621	30514179	○
5,50	6	82	44	35	36	2	SCD551-0550-2-3-135HA05-HU621	30514180	○
5,55	6	82	44	35	36	2	SCD551-0555-2-3-135HA05-HU621	30514181	○
5,565 7/32"	6	82	44	35	36	2	SCD551-05565-2-3-135HA05-HU621	30514182	○
5,60	6	82	44	35	36	2	SCD551-0560-2-3-135HA05-HU621	30514183	○
5,70	6	82	44	35	36	2	SCD551-0570-2-3-135HA05-HU621	30514184	○
5,80	6	82	44	35	36	2	SCD551-0580-2-3-135HA05-HU621	30514185	○

MEGA-Stack-Drill-CT

Solid carbide twist drill

SCD44 (5xD), internal coolant supply

ø 5,90 - 8,90

Dimensions							Specification	Order number	
d ₁	d ₂ h6	l ₁	l ₂	l ₃	l ₄	z			
5,90	6	82	44	35	36	2	SCD551-0590-2-3-135HA05-HU621	30514186	○
6,00	6	82	44	35	36	2	SCD551-0600-2-3-135HA05-HU621	30514187	○
6,10	8	91	53	43	36	2	SCD551-0610-2-3-135HA05-HU621	30514188	○
6,20	8	91	53	43	36	2	SCD551-0620-2-3-135HA05-HU621	30514189	○
6,30	8	91	53	43	36	2	SCD551-0630-2-3-135HA05-HU621	30514190	○
6,365 1/4"	8	91	53	43	36	2	SCD551-06365-2-3-135HA05-HU621	30514191	○
6,40	8	91	53	43	36	2	SCD551-0640-2-3-135HA05-HU621	30514192	○
6,50	8	91	53	43	36	2	SCD551-0650-2-3-135HA05-HU621	30514193	○
6,60	8	91	53	43	36	2	SCD551-0660-2-3-135HA05-HU621	30514194	○
6,70	8	91	53	43	36	2	SCD551-0670-2-3-135HA05-HU621	30514195	○
6,80	8	91	53	43	36	2	SCD551-0680-2-3-135HA05-HU621	30514196	○
6,90	8	91	53	43	36	2	SCD551-0690-2-3-135HA05-HU621	30514197	○
7,00	8	91	53	43	36	2	SCD551-0700-2-3-135HA05-HU621	30514198	○
7,10	8	91	53	43	36	2	SCD551-0710-2-3-135HA05-HU621	30514199	○
7,20	8	91	53	43	36	2	SCD551-0720-2-3-135HA05-HU621	30514200	○
7,30	8	91	53	43	36	2	SCD551-0730-2-3-135HA05-HU621	30514201	○
7,40	8	91	53	43	36	2	SCD551-0740-2-3-135HA05-HU621	30514202	○
7,50	8	91	53	43	36	2	SCD551-0750-2-3-135HA05-HU621	30514203	○
7,60	8	91	53	43	36	2	SCD551-0760-2-3-135HA05-HU621	30514204	○
7,70	8	91	53	43	36	2	SCD551-0770-2-3-135HA05-HU621	30514205	○
7,80	8	91	53	43	36	2	SCD551-0780-2-3-135HA05-HU621	30514206	○
7,90	8	91	53	43	36	2	SCD551-0790-2-3-135HA05-HU621	30514207	○
7,953 5/16"	8	91	53	43	36	2	SCD551-07953-2-3-135HA05-HU621	30514208	○
8,00	8	91	53	43	36	2	SCD551-0800-2-3-135HA05-HU621	30514209	○
8,10	10	103	61	49	40	2	SCD551-0810-2-3-135HA05-HU621	30514210	○
8,20	10	103	61	49	40	2	SCD551-0820-2-3-135HA05-HU621	30514211	○
8,30	10	103	61	49	40	2	SCD551-0830-2-3-135HA05-HU621	30514212	○
8,40	10	103	61	49	40	2	SCD551-0840-2-3-135HA05-HU621	30514213	○
8,50	10	103	61	49	40	2	SCD551-0850-2-3-135HA05-HU621	30514214	○
8,60	10	103	61	49	40	2	SCD551-0860-2-3-135HA05-HU621	30514215	○
8,70	10	103	61	49	40	2	SCD551-0870-2-3-135HA05-HU621	30514216	○
8,80	10	103	61	49	40	2	SCD551-0880-2-3-135HA05-HU621	30514217	○
8,90	10	103	61	49	40	2	SCD551-0890-2-3-135HA05-HU621	30514218	○

MEGA-Stack-Drill-CT

Solid carbide twist drill

SCD44 (5xD), internal coolant supply

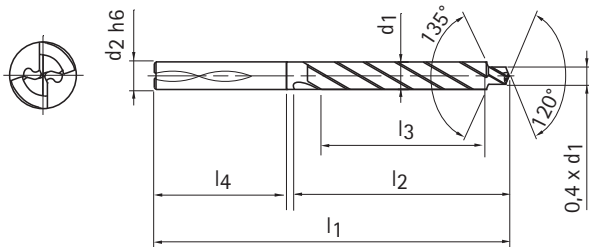
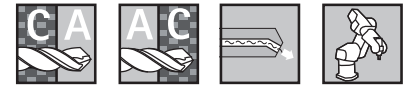
ø 9,00 - 12,00

Dimensions							Specification	Order number	
d ₁	d ₂ h ₆	l ₁	l ₂	l ₃	l ₄	z			
9,00	10	103	61	49	40	2	SCD551-0900-2-3-135HA05-HU621	30514219	○
9,10	10	103	61	49	40	2	SCD551-0910-2-3-135HA05-HU621	30514220	○
9,20	10	103	61	49	40	2	SCD551-0920-2-3-135HA05-HU621	30514221	○
9,30	10	103	61	49	40	2	SCD551-0930-2-3-135HA05-HU621	30514222	○
9,40	10	103	61	49	40	2	SCD551-0940-2-3-135HA05-HU621	30514223	○
9,50	10	103	61	49	40	2	SCD551-0950-2-3-135HA05-HU621	30514224	○
9,54 3/8"	10	103	61	49	40	2	SCD551-09540-2-3-135HA05-HU621	30514225	○
9,60	10	103	61	49	40	2	SCD551-0960-2-3-135HA05-HU621	30514226	○
9,70	10	103	61	49	40	2	SCD551-0970-2-3-135HA05-HU621	30514227	○
9,80	10	103	61	49	40	2	SCD551-0980-2-3-135HA05-HU621	30514228	○
9,90	10	103	61	49	40	2	SCD551-0990-2-3-135HA05-HU621	30514229	○
10,00	10	103	61	49	40	2	SCD551-1000-2-3-135HA05-HU621	30514230	○
10,10	12	118	71	56	45	2	SCD551-1010-2-3-135HA05-HU621	30514231	○
10,20	12	118	71	56	45	2	SCD551-1020-2-3-135HA05-HU621	30514232	○
10,30	12	118	71	56	45	2	SCD551-1030-2-3-135HA05-HU621	30514233	○
10,40	12	118	71	56	45	2	SCD551-1040-2-3-135HA05-HU621	30514234	○
10,50	12	118	71	56	45	2	SCD551-1050-2-3-135HA05-HU621	30514235	○
10,60	12	118	71	56	45	2	SCD551-1060-2-3-135HA05-HU621	30514236	○
10,70	12	118	71	56	45	2	SCD551-1070-2-3-135HA05-HU621	30514237	○
10,80	12	118	71	56	45	2	SCD551-1080-2-3-135HA05-HU621	30514238	○
10,90	12	118	71	56	45	2	SCD551-1090-2-3-135HA05-HU621	30514239	○
11,00	12	118	71	56	45	2	SCD551-1100-2-3-135HA05-HU621	30514240	○
11,10	12	118	71	56	45	2	SCD551-1110-2-3-135HA05-HU621	30514241	○
11,133 7/16"	12	118	71	56	45	2	SCD551-11133-2-3-135HA05-HU621	30514242	○
11,20	12	118	71	56	45	2	SCD551-1135-2-3-135HA05-HU621	30514243	○
11,30	12	118	71	56	45	2	SCD551-1130-2-3-135HA05-HU621	30514244	○
11,40	12	118	71	56	45	2	SCD551-1140-2-3-135HA05-HU621	30514245	○
11,50	12	118	71	56	45	2	SCD551-1150-2-3-135HA05-HU621	30514246	○
11,60	12	118	71	56	45	2	SCD551-1160-2-3-135HA05-HU621	30514247	○
11,70	12	118	71	56	45	2	SCD551-1170-2-3-135HA05-HU621	30514248	○
11,80	12	118	71	56	45	2	SCD551-1180-2-3-135HA05-HU621	30514249	○
11,90	12	118	71	56	45	2	SCD551-1190-2-3-135HA05-HU621	30514250	○
12,00	12	118	71	56	45	2	SCD551-1350-2-3-135HA05-HU621	30514251	○

MEGA-Stack-Drill-Robot-CA

Solid carbide twist drill

SCD45 (5xD), internal coolant supply



Design:

Drill diameter:	8,00 – 20,00 mm
Bore tolerance:	IT 8
Shank form:	HA
Coating:	uncoated
Number of blades:	2
Guiding chamfer:	4
Tip angle:	120°
Helix angle:	34°

Application: Multi-layer out of CFRP / aluminium for robotic use (end effector)

Dimensions							Specification	Order number	
d1	d2 h6	l1	l2	l3	l4	z			
8,00	8	91	53	43	36	2	SCD451-0800-2-4-120HA05-HU717	30514252	○
8,10	10	103	61	49	40	2	SCD451-0810-2-4-120HA05-HU717	30514253	○
8,20	10	103	61	49	40	2	SCD451-0820-2-4-120HA05-HU717	30514254	○
8,30	10	103	61	49	40	2	SCD451-0830-2-4-120HA05-HU717	30514255	○
8,40	10	103	61	49	40	2	SCD451-0840-2-4-120HA05-HU717	30514256	○
8,50	10	103	61	49	40	2	SCD451-0850-2-4-120HA05-HU717	30514257	○
8,60	10	103	61	49	40	2	SCD451-0860-2-4-120HA05-HU717	30514258	○
8,70	10	103	61	49	40	2	SCD451-0870-2-4-120HA05-HU717	30514259	○
8,80	10	103	61	49	40	2	SCD451-0880-2-4-120HA05-HU717	30514260	○
8,90	10	103	61	49	40	2	SCD451-0890-2-4-120HA05-HU717	30514261	○
9,00	10	103	61	49	40	2	SCD451-0900-2-4-120HA05-HU717	30514262	○
9,10	10	103	61	49	40	2	SCD451-0910-2-4-120HA05-HU717	30514263	○
9,20	10	103	61	49	40	2	SCD451-0920-2-4-120HA05-HU717	30514264	○
9,30	10	103	61	49	40	2	SCD451-0930-2-4-120HA05-HU717	30514265	○
9,40	10	103	61	49	40	2	SCD451-0940-2-4-120HA05-HU717	30514266	○
9,50	10	103	61	49	40	2	SCD451-0950-2-4-120HA05-HU717	30514267	○
9,543/8"	10	103	61	49	40	2	SCD451-09540-2-4-120HA05-HU717	30514268	○
9,60	10	103	61	49	40	2	SCD451-0960-2-4-120HA05-HU717	30514269	○
9,70	10	103	61	49	40	2	SCD451-0970-2-4-120HA05-HU717	30514270	○
9,80	10	103	61	49	40	2	SCD451-0980-2-4-120HA05-HU717	30514271	○
9,90	10	103	61	49	40	2	SCD451-0990-2-4-120HA05-HU717	30514272	○
10,00	10	103	61	49	40	2	SCD451-1000-2-4-120HA05-HU717	30514273	○
10,10	12	118	71	56	45	2	SCD451-1010-2-4-120HA05-HU717	30514275	○
10,20	12	118	71	56	45	2	SCD451-1020-2-4-120HA05-HU717	30514276	○
10,30	12	118	71	56	45	2	SCD451-1030-2-4-120HA05-HU717	30514277	○
10,40	12	118	71	56	45	2	SCD451-1040-2-4-120HA05-HU717	30514278	○
10,50	12	118	71	56	45	2	SCD451-1050-2-4-120HA05-HU717	30514279	○
10,60	12	118	71	56	45	2	SCD451-1060-2-4-120HA05-HU717	30514280	○
10,70	12	118	71	56	45	2	SCD451-1070-2-4-120HA05-HU717	30514281	○
10,80	12	118	71	56	45	2	SCD451-1080-2-4-120HA05-HU717	30514282	○
10,90	12	118	71	56	45	2	SCD451-1090-2-4-120HA05-HU717	30514283	○
11,00	12	118	71	56	45	2	SCD451-1100-2-4-120HA05-HU717	30514284	○

MEGA-Stack-Drill-Robot-CA

Solid carbide twist drill

SCD45 (5xD), internal coolant supply

Ø 11,10 - 14,70

Dimensions							Specification	Order number	
d ₁	d ₂ h ₆	l ₁	l ₂	l ₃	l ₄	z			
11,10	12	118	71	56	45	2	SCD451-1110-2-4-120HA05-HU717	30514285	○
11,1337/16"	12	118	71	56	45	2	SCD451-11133-2-4-120HA05-HU717	30514286	○
11,20	12	118	71	56	45	2	SCD451-1120-2-4-120HA05-HU717	30514287	○
11,30	12	118	71	56	45	2	SCD451-1130-2-4-120HA05-HU717	30514288	○
11,40	12	118	71	56	45	2	SCD451-1140-2-4-120HA05-HU717	30514289	○
11,50	12	118	71	56	45	2	SCD451-1150-2-4-120HA05-HU717	30514290	○
11,60	12	118	71	56	45	2	SCD451-1160-2-4-120HA05-HU717	30514291	○
11,70	12	118	71	56	45	2	SCD451-1170-2-4-120HA05-HU717	30514292	○
11,80	12	118	71	56	45	2	SCD451-1180-2-4-120HA05-HU717	30514293	○
11,90	12	118	71	56	45	2	SCD451-1190-2-4-120HA05-HU717	30514294	○
12,00	12	118	71	56	45	2	SCD451-1200-2-4-120HA05-HU717	30514295	○
12,10	14	124	77	60	45	2	SCD451-1210-2-4-120HA05-HU717	30514296	○
12,20	14	124	77	60	45	2	SCD451-1220-2-4-120HA05-HU717	30514297	○
12,30	14	124	77	60	45	2	SCD451-1230-2-4-120HA05-HU717	30514299	○
12,40	14	124	77	60	45	2	SCD451-1240-2-4-120HA05-HU717	30514300	○
12,50	14	124	77	60	45	2	SCD451-1250-2-4-120HA05-HU717	30514301	○
12,60	14	124	77	60	45	2	SCD451-1260-2-4-120HA05-HU717	30514302	○
12,70	14	124	77	60	45	2	SCD451-1270-2-4-120HA05-HU717	30514303	○
12,721/2"	14	124	77	60	45	2	SCD451-12720-2-4-120HA05-HU717	30514304	○
12,80	14	124	77	60	45	2	SCD451-1280-2-4-120HA05-HU717	30514305	○
12,90	14	124	77	60	45	2	SCD451-1290-2-4-120HA05-HU717	30514306	○
13,00	14	124	77	60	45	2	SCD451-1300-2-4-120HA05-HU717	30514307	○
13,10	14	124	77	60	45	2	SCD451-1310-2-4-120HA05-HU717	30514308	○
13,20	14	124	77	60	45	2	SCD451-1320-2-4-120HA05-HU717	30514309	○
13,30	14	124	77	60	45	2	SCD451-1330-2-4-120HA05-HU717	30514310	○
13,40	14	124	77	60	45	2	SCD451-1340-2-4-120HA05-HU717	30514311	○
13,50	14	124	77	60	45	2	SCD451-1350-2-4-120HA05-HU717	30514312	○
13,60	14	124	77	60	45	2	SCD451-1360-2-4-120HA05-HU717	30514313	○
13,70	14	124	77	60	45	2	SCD451-1370-2-4-120HA05-HU717	30514314	○
13,80	14	124	77	60	45	2	SCD451-1380-2-4-120HA05-HU717	30514315	○
13,90	14	124	77	60	45	2	SCD451-1390-2-4-120HA05-HU717	30514316	○
14,00	14	124	77	60	45	2	SCD451-1400-2-4-120HA05-HU717	30514317	○
14,10	16	133	83	63	48	2	SCD451-1410-2-4-120HA05-HU717	30514318	○
14,20	16	133	83	63	48	2	SCD451-1420-2-4-120HA05-HU717	30514319	○
14,2959/16"	16	133	83	63	48	2	SCD451-14295-2-4-120HA05-HU717	30514320	○
14,30	16	133	83	63	48	2	SCD451-1430-2-4-120HA05-HU717	30514321	○
14,40	16	133	83	63	48	2	SCD451-1440-2-4-120HA05-HU717	30514322	○
14,50	16	133	83	63	48	2	SCD451-1450-2-4-120HA05-HU717	30514323	○
14,60	16	133	83	63	48	2	SCD451-1460-2-4-120HA05-HU717	30514324	○
14,70	16	133	83	63	48	2	SCD451-1470-2-4-120HA05-HU717	30514325	○

MEGA-Stack-Drill-Robot-CA

Solid carbide twist drill

SCD45 (5xD), internal coolant supply

ø 14,80 - 18,70

Dimensions							Specification	Order number	
d ₁	d ₂ h6	l ₁	l ₂	l ₃	l ₄	z			
14,80	16	133	83	63	48	2	SCD451-1480-2-4-120HA05-HU717	30514326	○
14,90	16	133	83	63	48	2	SCD451-1490-2-4-120HA05-HU717	30514327	○
15,00	16	133	83	63	48	2	SCD451-1500-2-4-120HA05-HU717	30514328	○
15,10	16	133	83	63	48	2	SCD451-1510-2-4-120HA05-HU717	30514329	○
15,20	16	133	83	63	48	2	SCD451-1520-2-4-120HA05-HU717	30514330	○
15,30	16	133	83	63	48	2	SCD451-1530-2-4-120HA05-HU717	30514331	○
15,40	16	133	83	63	48	2	SCD451-1540-2-4-120HA05-HU717	30514332	○
15,50	16	133	83	63	48	2	SCD451-1550-2-4-120HA05-HU717	30514333	○
15,60	16	133	83	63	48	2	SCD451-1560-2-4-120HA05-HU717	30514334	○
15,70	16	133	83	63	48	2	SCD451-1570-2-4-120HA05-HU717	30514335	○
15,80	16	133	83	63	48	2	SCD451-1580-2-4-120HA05-HU717	30514336	○
15,8825/8"	16	133	83	63	48	2	SCD451-15882-2-4-120HA05-HU717	30514337	○
15,90	16	133	83	63	48	2	SCD451-1590-2-4-120HA05-HU717	30514338	○
16,00	16	133	83	63	48	2	SCD451-1600-2-4-120HA05-HU717	30514339	○
16,10	18	143	93	71	48	2	SCD451-1610-2-4-120HA05-HU717	30514340	○
16,20	18	143	93	71	48	2	SCD451-1620-2-4-120HA05-HU717	30514341	○
16,30	18	143	93	71	48	2	SCD451-1630-2-4-120HA05-HU717	30514342	○
16,40	18	143	93	71	48	2	SCD451-1640-2-4-120HA05-HU717	30514343	○
16,50	18	143	93	71	48	2	SCD451-1650-2-4-120HA05-HU717	30514344	○
16,60	18	143	93	71	48	2	SCD451-1660-2-4-120HA05-HU717	30514345	○
16,70	18	143	93	71	48	2	SCD451-1670-2-4-120HA05-HU717	30514346	○
16,80	18	143	93	71	48	2	SCD451-1680-2-4-120HA05-HU717	30514347	○
16,90	18	143	93	71	48	2	SCD451-1690-2-4-120HA05-HU717	30514348	○
17,00	18	143	93	71	48	2	SCD451-1700-2-4-120HA05-HU717	30514349	○
17,10	18	143	93	71	48	2	SCD451-1710-2-4-120HA05-HU717	30514350	○
17,20	18	143	93	71	48	2	SCD451-1720-2-4-120HA05-HU717	30514351	○
17,30	18	143	93	71	48	2	SCD451-1730-2-4-120HA05-HU717	30514352	○
17,40	18	143	93	71	48	2	SCD451-1740-2-4-120HA05-HU717	30514353	○
17,50	18	143	93	71	48	2	SCD451-1750-2-4-120HA05-HU717	30514354	○
17,60	18	143	93	71	48	2	SCD451-1760-2-4-120HA05-HU717	30514355	○
17,70	18	143	93	71	48	2	SCD451-1770-2-4-120HA05-HU717	30514356	○
17,80	18	143	93	71	48	2	SCD451-1780-2-4-120HA05-HU717	30514357	○
17,90	18	143	93	71	48	2	SCD451-1790-2-4-120HA05-HU717	30514358	○
18,00	18	143	93	71	48	2	SCD451-1800-2-4-120HA05-HU717	30514359	○
18,10	20	153	101	77	50	2	SCD451-1810-2-4-120HA05-HU717	30514360	○
18,20	20	153	101	77	50	2	SCD451-1820-2-4-120HA05-HU717	30514361	○
18,30	20	153	101	77	50	2	SCD451-1830-2-4-120HA05-HU717	30514362	○
18,40	20	153	101	77	50	2	SCD451-1840-2-4-120HA05-HU717	30514363	○
18,50	20	153	101	77	50	2	SCD451-1850-2-4-120HA05-HU717	30514364	○
18,60	20	153	101	77	50	2	SCD451-1860-2-4-120HA05-HU717	30514365	○
18,70	20	153	101	77	50	2	SCD451-1870-2-4-120HA05-HU717	30514366	○

MEGA-Stack-Drill-Robot-CA

Solid carbide twist drill

SCD45 (5xD), internal coolant supply

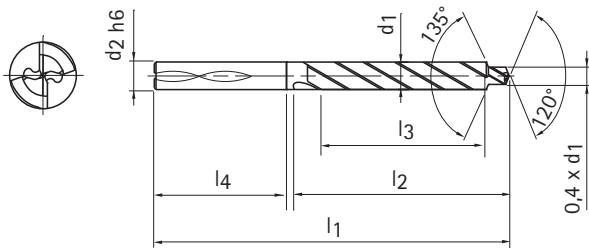
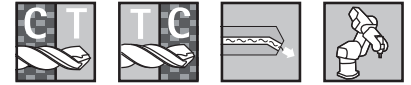
ø 18,80 - 20,00

Dimensions							Specification	Order number	
d ₁	d ₂ h ₆	l ₁	l ₂	l ₃	l ₄	z			
18,80	20	153	101	77	50	2	SCD451-1880-2-4-120HA05-HU717	30514367	○
18,90	20	153	101	77	50	2	SCD451-1890-2-4-120HA05-HU717	30514368	○
19,00	20	153	101	77	50	2	SCD451-1900-2-4-120HA05-HU717	30514369	○
19,0653/4"	20	153	101	77	50	2	SCD451-19065-2-4-120HA05-HU717	30514370	○
19,10	20	153	101	77	50	2	SCD451-1910-2-4-120HA05-HU717	30514371	○
19,20	20	153	101	77	50	2	SCD451-1920-2-4-120HA05-HU717	30514372	○
19,30	20	153	101	77	50	2	SCD451-1930-2-4-120HA05-HU717	30514373	○
19,40	20	153	101	77	50	2	SCD451-1940-2-4-120HA05-HU717	30514374	○
19,50	20	153	101	77	50	2	SCD451-1950-2-4-120HA05-HU717	30514375	○
19,60	20	153	101	77	50	2	SCD451-1960-2-4-120HA05-HU717	30514376	○
19,70	20	153	101	77	50	2	SCD451-1970-2-4-120HA05-HU717	30514377	○
19,80	20	153	101	77	50	2	SCD451-1980-2-4-120HA05-HU717	30514378	○
19,90	20	153	101	77	50	2	SCD451-1990-2-4-120HA05-HU717	30514379	○
20,00	20	153	101	77	50	2	SCD451-2000-2-4-120HA05-HU717	30514380	○

MEGA-Stack-Drill-Robot-CT

Solid carbide twist drill

SCD46 (5xD), internal coolant supply



Design:

Drill diameter:	8,00 - 20,00 mm
Bore tolerance:	IT 8
Shank form:	HA
Coating:	uncoated
Number of blades:	2
Guiding chamfer:	3
Tip angle:	120°
Helix angle:	34°

Application: Multi-layer out of CFRP | titanium for robotic use (end effector)

Dimensions							Specification	Order number	
d1	d2 h6	l1	l2	l3	l4	z			
8,00	8	91	53	43	36	2	SCD461-0800-2-3-120HA05-HU621	30514381	○
8,10	10	103	61	49	40	2	SCD461-0810-2-3-120HA05-HU621	30514382	○
8,20	10	103	61	49	40	2	SCD461-0820-2-3-120HA05-HU621	30514383	○
8,30	10	103	61	49	40	2	SCD461-0830-2-3-120HA05-HU621	30514384	○
8,40	10	103	61	49	40	2	SCD461-0840-2-3-120HA05-HU621	30514385	○
8,50	10	103	61	49	40	2	SCD461-0850-2-3-120HA05-HU621	30514386	○
8,60	10	103	61	49	40	2	SCD461-0860-2-3-120HA05-HU621	30514387	○
8,70	10	103	61	49	40	2	SCD461-0870-2-3-120HA05-HU621	30514388	○
8,80	10	103	61	49	40	2	SCD461-0880-2-3-120HA05-HU621	30514389	○
8,90	10	103	61	49	40	2	SCD461-0890-2-3-120HA05-HU621	30514390	○
9,00	10	103	61	49	40	2	SCD461-0900-2-3-120HA05-HU621	30514391	○
9,10	10	103	61	49	40	2	SCD461-0910-2-3-120HA05-HU621	30514392	○
9,20	10	103	61	49	40	2	SCD461-0920-2-3-120HA05-HU621	30514393	○
9,30	10	103	61	49	40	2	SCD461-0930-2-3-120HA05-HU621	30514394	○
9,40	10	103	61	49	40	2	SCD461-0940-2-3-120HA05-HU621	30514395	○
9,50	10	103	61	49	40	2	SCD461-0950-2-3-120HA05-HU621	30514396	○
9,54 3/8"	10	103	61	49	40	2	SCD461-09540-2-3-120HA05-HU621	30514397	○
9,60	10	103	61	49	40	2	SCD461-0960-2-3-120HA05-HU621	30514398	○
9,70	10	103	61	49	40	2	SCD461-0970-2-3-120HA05-HU621	30514399	○
9,80	10	103	61	49	40	2	SCD461-0980-2-3-120HA05-HU621	30514400	○
9,90	10	103	61	49	40	2	SCD461-0990-2-3-120HA05-HU621	30514401	○
10,00	10	103	61	49	40	2	SCD461-1000-2-3-120HA05-HU621	30514402	○
10,10	12	118	71	56	45	2	SCD461-1010-2-3-120HA05-HU621	30514403	○
10,20	12	118	71	56	45	2	SCD461-1020-2-3-120HA05-HU621	30514404	○
10,30	12	118	71	56	45	2	SCD461-1030-2-3-120HA05-HU621	30514405	○
10,40	12	118	71	56	45	2	SCD461-1040-2-3-120HA05-HU621	30514406	○
10,50	12	118	71	56	45	2	SCD461-1050-2-3-120HA05-HU621	30514407	○
10,60	12	118	71	56	45	2	SCD461-1060-2-3-120HA05-HU621	30514408	○
10,70	12	118	71	56	45	2	SCD461-1070-2-3-120HA05-HU621	30514409	○
10,80	12	118	71	56	45	2	SCD461-1080-2-3-120HA05-HU621	30514410	○
10,90	12	118	71	56	45	2	SCD461-1090-2-3-120HA05-HU621	30514411	○
11,00	12	118	71	56	45	2	SCD461-1100-2-3-120HA05-HU621	30514412	○

MEGA-Stack-Drill-Robot-CT

Solid carbide twist drill

SCD46 (5xD), internal coolant supply

ø 11,10 - 14,70

Dimensions							Specification	Order number	
d ₁	d ₂ h ₆	l ₁	l ₂	l ₃	l ₄	z			
11,10	12	118	71	56	45	2	SCD461-1110-2-3-120HA05-HU621	30514413	○
11,133 7/16"	12	118	71	56	45	2	SCD461-11133-2-3-120HA05-HU621	30514414	○
11,20	12	118	71	56	45	2	SCD461-1120-2-3-120HA05-HU621	30514415	○
11,30	12	118	71	56	45	2	SCD461-1130-2-3-120HA05-HU621	30514416	○
11,40	12	118	71	56	45	2	SCD461-1140-2-3-120HA05-HU621	30514417	○
11,50	12	118	71	56	45	2	SCD461-1150-2-3-120HA05-HU621	30514418	○
11,60	12	118	71	56	45	2	SCD461-1160-2-3-120HA05-HU621	30514419	○
11,70	12	118	71	56	45	2	SCD461-1170-2-3-120HA05-HU621	30514420	○
11,80	12	118	71	56	45	2	SCD461-1180-2-3-120HA05-HU621	30514421	○
11,90	12	118	71	56	45	2	SCD461-1190-2-3-120HA05-HU621	30514422	○
12,00	12	118	71	56	45	2	SCD461-1200-2-3-120HA05-HU621	30514423	○
12,10	14	124	77	60	45	2	SCD461-1210-2-3-120HA05-HU621	30514424	○
12,20	14	124	77	60	45	2	SCD461-1220-2-3-120HA05-HU621	30514425	○
12,30	14	124	77	60	45	2	SCD461-1230-2-3-120HA05-HU621	30514426	○
12,40	14	124	77	60	45	2	SCD461-1240-2-3-120HA05-HU621	30514427	○
12,50	14	124	77	60	45	2	SCD461-1250-2-3-120HA05-HU621	30514428	○
12,60	14	124	77	60	45	2	SCD461-1260-2-3-120HA05-HU621	30514429	○
12,70	14	124	77	60	45	2	SCD461-1270-2-3-120HA05-HU621	30514430	○
12,72 1/2"	14	124	77	60	45	2	SCD461-12720-2-3-120HA05-HU621	30514431	○
12,80	14	124	77	60	45	2	SCD461-1280-2-3-120HA05-HU621	30514432	○
12,90	14	124	77	60	45	2	SCD461-1290-2-3-120HA05-HU621	30514433	○
13,00	14	124	77	60	45	2	SCD461-1300-2-3-120HA05-HU621	30514434	○
13,10	14	124	77	60	45	2	SCD461-1310-2-3-120HA05-HU621	30514435	○
13,20	14	124	77	60	45	2	SCD461-1320-2-3-120HA05-HU621	30514436	○
13,30	14	124	77	60	45	2	SCD461-1330-2-3-120HA05-HU621	30514437	○
13,40	14	124	77	60	45	2	SCD461-1340-2-3-120HA05-HU621	30514438	○
13,50	14	124	77	60	45	2	SCD461-1350-2-3-120HA05-HU621	30514439	○
13,60	14	124	77	60	45	2	SCD461-1360-2-3-120HA05-HU621	30514440	○
13,70	14	124	77	60	45	2	SCD461-1370-2-3-120HA05-HU621	30514441	○
13,80	14	124	77	60	45	2	SCD461-1380-2-3-120HA05-HU621	30514442	○
13,90	14	124	77	60	45	2	SCD461-1390-2-3-120HA05-HU621	30514444	○
14,00	14	124	77	60	45	2	SCD461-1400-2-3-120HA05-HU621	30514445	○
14,10	16	133	83	63	48	2	SCD461-1410-2-3-120HA05-HU621	30514446	○
14,20	16	133	83	63	48	2	SCD461-1420-2-3-120HA05-HU621	30514447	○
14,295 9/16"	16	133	83	63	48	2	SCD461-14295-2-3-120HA05-HU621	30514448	○
14,30	16	133	83	63	48	2	SCD461-1430-2-3-120HA05-HU621	30514449	○
14,40	16	133	83	63	48	2	SCD461-1440-2-3-120HA05-HU621	30514450	○
14,50	16	133	83	63	48	2	SCD461-1450-2-3-120HA05-HU621	30514451	○
14,60	16	133	83	63	48	2	SCD461-1460-2-3-120HA05-HU621	30514452	○
14,70	16	133	83	63	48	2	SCD461-1470-2-3-120HA05-HU621	30514453	○

MEGA-Stack-Drill-Robot-CT

Solid carbide twist drill

SCD46 (5xD), internal coolant supply

ø 14,80 - 18,70

Dimensions							Specification	Order number	
d ₁	d ₂ h6	l ₁	l ₂	l ₃	l ₄	z			
14,80	16	133	83	63	48	2	SCD461-1480-2-3-120HA05-HU621	30514454	○
14,90	16	133	83	63	48	2	SCD461-1490-2-3-120HA05-HU621	30514455	○
15,00	16	133	83	63	48	2	SCD461-1500-2-3-120HA05-HU621	30514456	○
15,10	16	133	83	63	48	2	SCD461-1510-2-3-120HA05-HU621	30514457	○
15,20	16	133	83	63	48	2	SCD461-1520-2-3-120HA05-HU621	30514458	○
15,30	16	133	83	63	48	2	SCD461-1530-2-3-120HA05-HU621	30514459	○
15,40	16	133	83	63	48	2	SCD461-1540-2-3-120HA05-HU621	30514460	○
15,50	16	133	83	63	48	2	SCD461-1550-2-3-120HA05-HU621	30514461	○
15,60	16	133	83	63	48	2	SCD461-1560-2-3-120HA05-HU621	30514462	○
15,70	16	133	83	63	48	2	SCD461-1570-2-3-120HA05-HU621	30514463	○
15,80	16	133	83	63	48	2	SCD461-1580-2-3-120HA05-HU621	30514464	○
15,882 5/8"	16	133	83	63	48	2	SCD461-15882-2-3-120HA05-HU621	30514465	○
15,90	16	133	83	63	48	2	SCD461-1590-2-3-120HA05-HU621	30514466	○
16,00	16	133	83	63	48	2	SCD461-1600-2-3-120HA05-HU621	30514467	○
16,10	18	143	93	71	48	2	SCD461-1610-2-3-120HA05-HU621	30514468	○
16,20	18	143	93	71	48	2	SCD461-1620-2-3-120HA05-HU621	30514469	○
16,30	18	143	93	71	48	2	SCD461-1630-2-3-120HA05-HU621	30514470	○
16,40	18	143	93	71	48	2	SCD461-1640-2-3-120HA05-HU621	30514471	○
16,50	18	143	93	71	48	2	SCD461-1650-2-3-120HA05-HU621	30514472	○
16,60	18	143	93	71	48	2	SCD461-1660-2-3-120HA05-HU621	30514473	○
16,70	18	143	93	71	48	2	SCD461-1670-2-3-120HA05-HU621	30514474	○
16,80	18	143	93	71	48	2	SCD461-1680-2-3-120HA05-HU621	30514475	○
16,90	18	143	93	71	48	2	SCD461-1690-2-3-120HA05-HU621	30514476	○
17,00	18	143	93	71	48	2	SCD461-1700-2-3-120HA05-HU621	30514477	○
17,10	18	143	93	71	48	2	SCD461-1710-2-3-120HA05-HU621	30514478	○
17,20	18	143	93	71	48	2	SCD461-1720-2-3-120HA05-HU621	30514479	○
17,30	18	143	93	71	48	2	SCD461-1730-2-3-120HA05-HU621	30514480	○
17,40	18	143	93	71	48	2	SCD461-1740-2-3-120HA05-HU621	30514481	○
17,50	18	143	93	71	48	2	SCD461-1750-2-3-120HA05-HU621	30514482	○
17,60	18	143	93	71	48	2	SCD461-1760-2-3-120HA05-HU621	30514483	○
17,70	18	143	93	71	48	2	SCD461-1770-2-3-120HA05-HU621	30514484	○
17,80	18	143	93	71	48	2	SCD461-1780-2-3-120HA05-HU621	30514485	○
17,90	18	143	93	71	48	2	SCD461-1790-2-3-120HA05-HU621	30514486	○
18,00	18	143	93	71	48	2	SCD461-1800-2-3-120HA05-HU621	30514487	○
18,10	20	153	101	77	50	2	SCD461-1810-2-3-120HA05-HU621	30514488	○
18,20	20	153	101	77	50	2	SCD461-1820-2-3-120HA05-HU621	30514489	○
18,30	20	153	101	77	50	2	SCD461-1830-2-3-120HA05-HU621	30514490	○
18,40	20	153	101	77	50	2	SCD461-1840-2-3-120HA05-HU621	30514491	○
18,50	20	153	101	77	50	2	SCD461-1850-2-3-120HA05-HU621	30514492	○
18,60	20	153	101	77	50	2	SCD461-1860-2-3-120HA05-HU621	30514493	○
18,70	20	153	101	77	50	2	SCD461-1870-2-3-120HA05-HU621	30514494	○

MEGA-Stack-Drill-Robot-CT

Solid carbide twist drill

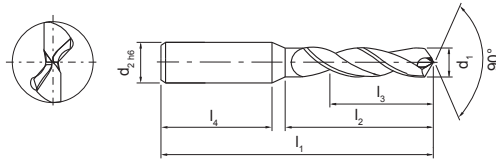
SCD46 (5xD), internal coolant supply

ø 18,80 - 20,00

Dimensions							Specification	Order number	
d ₁	d ₂ h ₆	l ₁	l ₂	l ₃	l ₄	z			
18,80	20	153	101	77	50	2	SCD461-1880-2-3-120HA05-HU621	30514495	○
18,90	20	153	101	77	50	2	SCD461-1890-2-3-120HA05-HU621	30514496	○
19,00	20	153	101	77	50	2	SCD461-1900-2-3-120HA05-HU621	30514497	○
19,065 3/4"	20	153	101	77	50	2	SCD461-19065-2-3-120HA05-HU621	30514498	○
19,10	20	153	101	77	50	2	SCD461-1910-2-3-120HA05-HU621	30514499	○
19,20	20	153	101	77	50	2	SCD461-1920-2-3-120HA05-HU621	30514500	○
19,30	20	153	101	77	50	2	SCD461-1930-2-3-120HA05-HU621	30514501	○
19,40	20	153	101	77	50	2	SCD461-1940-2-3-120HA05-HU621	30514502	○
19,50	20	153	101	77	50	2	SCD461-1950-2-3-120HA05-HU621	30514503	○
19,60	20	153	101	77	50	2	SCD461-1960-2-3-120HA05-HU621	30514504	○
19,70	20	153	101	77	50	2	SCD461-1970-2-3-120HA05-HU621	30514505	○
19,80	20	153	101	77	50	2	SCD461-1980-2-3-120HA05-HU621	30514506	○
19,90	20	153	101	77	50	2	SCD461-1990-2-3-120HA05-HU621	30514507	○
20,00	20	153	101	77	50	2	SCD461-2000-2-3-120HA05-HU621	30514508	○

MEGA-Drill-Composite-MD-Micro

Solid carbide twist drill
SCD 40 (5xD)



Design:

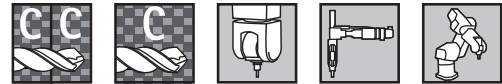
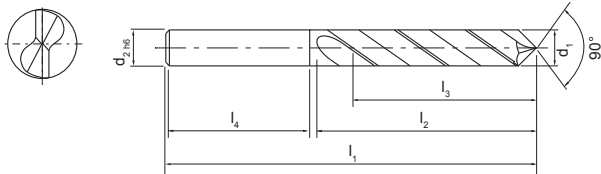
Drill diameter:	0,50 - 2,90 mm
Bore tolerance:	IT 8
Shank form:	HA
Coating:	Diamond
Number of blades:	2
Guiding chamfer:	2
Tip angle:	90°
Helix angle:	35°

Application: CFRP with multidirectional fibres

Dimensions						Specification	Order number	
d1	d2 h6	l1	l2	l3	l4			
0,50	3	55	4,5	3	46	SCD400-0050-2-2-140HA05-HC620	30504673	○
0,60	3	55	4,5	3	46	SCD400-0060-2-2-140HA05-HC620	30504674	○
0,70	3	55	5,5	4	45	SCD400-0070-2-2-140HA05-HC620	30504675	○
0,80	3	55	5,5	4	45	SCD400-0080-2-2-140HA05-HC620	30504676	○
0,90	3	55	7	5	44	SCD400-0090-2-2-140HA05-HC620	30504677	○
1,00	3	55	7	5	44	SCD400-0100-2-2-140HA05-HC620	30504678	●
1,10	3	55	10	8	41	SCD400-0110-2-2-140HA05-HC620	30504679	○
1,20	3	55	10	8	41	SCD400-0120-2-2-140HA05-HC620	30504680	○
1,30	3	55	10	8	41	SCD400-0130-2-2-140HA05-HC620	30504681	○
1,40	3	55	10	8	41	SCD400-0140-2-2-140HA05-HC620	30504682	○
1,50	3	55	10	8	41	SCD400-0150-2-2-140HA05-HC620	30504683	●
1,60	3	68	14	11	51	SCD400-0160-2-2-140HA05-HC620	30504684	○
1,70	3	68	14	11	51	SCD400-0170-2-2-140HA05-HC620	30504685	○
1,80	3	68	14	11	51	SCD400-0180-2-2-140HA05-HC620	30504686	○
1,90	3	68	14	11	51	SCD400-0190-2-2-140HA05-HC620	30504687	○
2,00	3	68	14	11	51	SCD400-0200-2-2-140HA05-HC620	30504688	●
2,10	3	74	18	14	54	SCD400-0210-2-2-140HA05-HC620	30504689	○
2,20	3	74	18	14	54	SCD400-0220-2-2-140HA05-HC620	30504690	○
2,30	3	74	18	14	54	SCD400-0230-2-2-140HA05-HC620	30504691	○
2,40	3	74	18	14	54	SCD400-0240-2-2-140HA05-HC620	30504692	○
2,50	3	74	18	14	54	SCD400-0250-2-2-140HA05-HC620	30504693	●
2,60	3	81	20	16	60	SCD400-0260-2-2-140HA05-HC620	30504694	○
2,70	3	81	20	16	60	SCD400-0270-2-2-140HA05-HC620	30504695	○
2,80	3	81	20	16	60	SCD400-0280-2-2-140HA05-HC620	30504696	○
2,90	3	81	20	16	60	SCD400-0290-2-2-140HA05-HC620	30504697	○

MEGA-Drill-Composite-MD

Solid carbide twist drill
SCD25 (5xD)



Design:
 Drill diameter: 2,50 - 12,00 mm
 Bore tolerance: IT 8
 Shank form: HA
 Coating: Diamond
 Number of blades: 2
 Tip angle: 90°
 Guiding chamfer: 2
 Helix angle: 35°

Application: CFRP with multidirectional fibres

Dimensions						Specification	Order number	
d ₁	d ₂ h6	l ₁	l ₂	l ₃	l ₄			
2,50	6	66	24	19	36	SCD250-0250-2-2-090HA05-HC619	30401897	○
2,60	6	66	24	19	36	SCD250-0260-2-2-090HA05-HC619	30401898	○
2,70	6	66	24	19	36	SCD250-0270-2-2-090HA05-HC619	30401899	○
2,80	6	66	24	19	36	SCD250-0280-2-2-090HA05-HC619	30401900	○
2,90	6	66	24	19	36	SCD250-0290-2-2-090HA05-HC619	30401901	○
3,00	6	66	28	23	36	SCD250-0300-2-2-090HA05-HC619	30401902	●
3,10	6	66	28	23	36	SCD250-0310-2-2-090HA05-HC619	30401903	○
3,175 1/8"	6	66	28	23	36	SCD250-03175-2-2-090HA05-HC619	30401904	○
3,20	6	66	28	23	36	SCD250-0320-2-2-090HA05-HC619	30401905	○
3,30	6	66	28	23	36	SCD250-0330-2-2-090HA05-HC619	30401906	○
3,40	6	66	28	23	36	SCD250-0340-2-2-090HA05-HC619	30401907	○
3,50	6	66	28	23	36	SCD250-0350-2-2-090HA05-HC619	30401908	○
3,60	6	66	28	23	36	SCD250-0360-2-2-090HA05-HC619	30401909	○
3,70	6	66	28	23	36	SCD250-0370-2-2-090HA05-HC619	30401910	○
3,80	6	66	28	23	36	SCD250-0380-2-2-090HA05-HC619	30401911	○
3,90	6	66	28	23	36	SCD250-0390-2-2-090HA05-HC619	30401912	○
4,00	6	74	36	29	36	SCD250-0400-2-2-090HA05-HC619	30401913	●
4,10	6	74	36	29	36	SCD250-0410-2-2-090HA05-HC619	30401914	○
4,20	6	74	36	29	36	SCD250-0420-2-2-090HA05-HC619	30401915	○
4,30	6	74	36	29	36	SCD250-0430-2-2-090HA05-HC619	30401916	○
4,40	6	74	36	29	36	SCD250-0440-2-2-090HA05-HC619	30401917	○
4,50	6	74	36	29	36	SCD250-0450-2-2-090HA05-HC619	30401918	○
4,60	6	74	36	29	36	SCD250-0460-2-2-090HA05-HC619	30401919	○
4,70	6	74	36	29	36	SCD250-0470-2-2-090HA05-HC619	30401920	○
4,763 3/16"	6	74	36	29	36	SCD250-04763-2-2-090HA05-HC619	30401921	○
4,80	6	74	36	29	36	SCD250-0480-2-2-090HA05-HC619	30401922	○
4,90	6	74	36	29	36	SCD250-0490-2-2-090HA05-HC619	30401923	○
5,00	6	82	44	35	36	SCD250-0500-2-2-090HA05-HC619	30401924	●
5,10	6	82	44	35	36	SCD250-0510-2-2-090HA05-HC619	30401925	○
5,20	6	82	44	35	36	SCD250-0520-2-2-090HA05-HC619	30401926	○
5,30	6	82	44	35	36	SCD250-0530-2-2-090HA05-HC619	30401927	○

MEGA-Drill-Composite-MD

Solid carbide twist drill
SCD25 (5xD)

ø 5,40 - 9,00

Dimensions						Specification	Order number	
d ₁	d ₂ h6	l ₁	l ₂	l ₃	l ₄			
5,40	6	82	44	35	36	SCD250-0540-2-2-090HA05-HC619	30401928	○
5,50	6	82	44	35	36	SCD250-0550-2-2-090HA05-HC619	30401929	○
5,60	6	82	44	35	36	SCD250-0560-2-2-090HA05-HC619	30401930	○
5,70	6	82	44	35	36	SCD250-0570-2-2-090HA05-HC619	30401931	○
5,80	6	82	44	35	36	SCD250-0580-2-2-090HA05-HC619	30401932	○
5,90	6	82	44	35	36	SCD250-0590-2-2-090HA05-HC619	30401933	○
6,00	6	82	44	35	36	SCD250-0600-2-2-090HA05-HC619	30401934	●
6,10	8	91	53	43	36	SCD250-0610-2-2-090HA05-HC619	30401935	○
6,20	8	91	53	43	36	SCD250-0620-2-2-090HA05-HC619	30401936	○
6,30	8	91	53	43	36	SCD250-0630-2-2-090HA05-HC619	30401937	○
6,350 1/4"	8	91	53	43	36	SCD250-06350-2-2-090HA05-HC619	30401938	○
6,40	8	91	53	43	36	SCD250-0640-2-2-090HA05-HC619	30401939	○
6,50	8	91	53	43	36	SCD250-0650-2-2-090HA05-HC619	30401940	○
6,60	8	91	53	43	36	SCD250-0660-2-2-090HA05-HC619	30401941	○
6,70	8	91	53	43	36	SCD250-0670-2-2-090HA05-HC619	30401942	○
6,80	8	91	53	43	36	SCD250-0680-2-2-090HA05-HC619	30401943	○
6,90	8	91	53	43	36	SCD250-0690-2-2-090HA05-HC619	30401944	○
7,00	8	91	53	43	36	SCD250-0700-2-2-090HA05-HC619	30401945	○
7,10	8	91	53	43	36	SCD250-0710-2-2-090HA05-HC619	30401946	○
7,20	8	91	53	43	36	SCD250-0720-2-2-090HA05-HC619	30401947	○
7,30	8	91	53	43	36	SCD250-0730-2-2-090HA05-HC619	30401948	○
7,40	8	91	53	43	36	SCD250-0740-2-2-090HA05-HC619	30401949	○
7,50	8	91	53	43	36	SCD250-0750-2-2-090HA05-HC619	30401950	○
7,60	8	91	53	43	36	SCD250-0760-2-2-090HA05-HC619	30401951	○
7,70	8	91	53	43	36	SCD250-0770-2-2-090HA05-HC619	30401952	○
7,80	8	91	53	43	36	SCD250-0780-2-2-090HA05-HC619	30401953	○
7,90	8	91	53	43	36	SCD250-0790-2-2-090HA05-HC619	30401954	○
7,938 5/16"	8	91	53	43	36	SCD250-07938-2-2-090HA05-HC619	30401955	○
8,00	8	91	53	43	40	SCD250-0800-2-2-090HA05-HC619	30401956	●
8,10	10	103	61	49	40	SCD250-0810-2-2-090HA05-HC611	30401957	○
8,20	10	103	61	49	40	SCD250-0820-2-2-090HA05-HC611	30401958	○
8,30	10	103	61	49	40	SCD250-0830-2-2-090HA05-HC611	30401959	○
8,40	10	103	61	49	40	SCD250-0840-2-2-090HA05-HC611	30401960	○
8,50	10	103	61	49	40	SCD250-0850-2-2-090HA05-HC611	30401961	○
8,60	10	103	61	49	40	SCD250-0860-2-2-090HA05-HC611	30401962	○
8,70	10	103	61	49	40	SCD250-0870-2-2-090HA05-HC611	30401963	○
8,80	10	103	61	49	40	SCD250-0880-2-2-090HA05-HC611	30401964	○
8,90	10	103	61	49	40	SCD250-0890-2-2-090HA05-HC611	30401965	○
9,00	10	103	61	49	40	SCD250-0900-2-2-090HA05-HC611	30401966	●

MEGA-Drill-Composite-MD

Solid carbide twist drill

SCD25 (5xD)

ø 9,10 - 12,00

Dimensions						Specification	Order number	
d ₁	d ₂ h6	l ₁	l ₂	l ₃	l ₄			
9,10	10	103	61	49	40	SCD250-0910-2-2-090HA05-HC611	30401967	○
9,20	10	103	61	49	40	SCD250-0920-2-2-090HA05-HC611	30401968	○
9,30	10	103	61	49	40	SCD250-0930-2-2-090HA05-HC611	30401969	○
9,40	10	103	61	49	40	SCD250-0940-2-2-090HA05-HC611	30401970	○
9,50	10	103	61	49	40	SCD250-0950-2-2-090HA05-HC611	30401971	○
9,525 3/8"	10	103	61	49	40	SCD250-09525-2-2-090HA05-HC611	30401972	○
9,60	10	103	61	49	40	SCD250-0960-2-2-090HA05-HC611	30401973	○
9,70	10	103	61	49	40	SCD250-0970-2-2-090HA05-HC611	30401974	○
9,80	10	103	61	49	40	SCD250-0980-2-2-090HA05-HC611	30401975	○
9,90	10	103	61	49	40	SCD250-0990-2-2-090HA05-HC611	30401976	○
10,00	10	103	61	49	40	SCD250-1000-2-2-090HA05-HC611	30401977	●
10,10	12	118	71	56	45	SCD250-1010-2-2-090HA05-HC611	30401978	○
10,20	12	118	71	56	45	SCD250-1020-2-2-090HA05-HC611	30401979	○
10,30	12	118	71	56	45	SCD250-1030-2-2-090HA05-HC611	30401980	○
10,40	12	118	71	56	45	SCD250-1040-2-2-090HA05-HC611	30401981	○
10,50	12	118	71	56	45	SCD250-1050-2-2-090HA05-HC611	30401982	○
10,60	12	118	71	56	45	SCD250-1060-2-2-090HA05-HC611	30401983	○
10,70	12	118	71	56	45	SCD250-1070-2-2-090HA05-HC611	30401984	○
10,80	12	118	71	56	45	SCD250-1080-2-2-090HA05-HC611	30401985	○
10,90	12	118	71	56	45	SCD250-1090-2-2-090HA05-HC611	30401986	○
11,00	12	118	71	56	45	SCD250-1100-2-2-090HA05-HC611	30401987	●
11,10	12	118	71	56	45	SCD250-1110-2-2-090HA05-HC611	30401988	○
11,111 7/16"	12	118	71	56	45	SCD250-11111-2-2-090HA05-HC611	30401989	○
11,20	12	118	71	56	45	SCD250-1120-2-2-090HA05-HC611	30401990	○
11,30	12	118	71	56	45	SCD250-1130-2-2-090HA05-HC611	30401991	○
11,40	12	118	71	56	45	SCD250-1140-2-2-090HA05-HC611	30401992	○
11,50	12	118	71	56	45	SCD250-1150-2-2-090HA05-HC611	30401993	○
11,60	12	118	71	56	45	SCD250-1160-2-2-090HA05-HC611	30401994	○
11,70	12	118	71	56	45	SCD250-1170-2-2-090HA05-HC611	30401995	○
11,80	12	118	71	56	45	SCD250-1180-2-2-090HA05-HC611	30401996	○
11,90	12	118	71	56	45	SCD250-1190-2-2-090HA05-HC611	30401997	○
12,00	12	118	71	56	45	SCD250-1200-2-2-090HA05-HC611	30401998	●

Dimensions in mm.

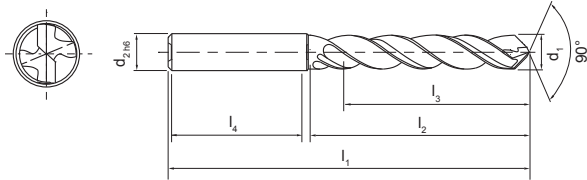
Machining values see chapter technical information.

● Available ex stock Germany.

○ Standard tool not on stock (delivery on request).

MEGA-Drill-Composite-UDX

Solid carbide twist drill
SCD27 (5xD)



Design:

Drill diameter:	3,00 - 12,00 mm
Bore tolerance:	IT 7
Shank form:	HA
Coating:	Diamond
Number of blades:	2
Tip angle:	90°
Number of guiding chamfers:	4
Helix angle:	35°

Application: For all CFRP materials / problem solver in unstable clamping situations or for thin-walled parts.

Dimensions						Specification	Order number	
d1	d2 h6	l1	l2	l3	l4			
3,00	6	66	26	20	36	SCD270-0300-2-2-090HA05-HC619	30402101	●
3,10	6	66	26	20	36	SCD270-0310-2-2-090HA05-HC619	30402102	○
3,175 1/8"	6	66	26	20	36	SCD270-03175-2-2-090HA05-HC619	30402103	●
3,20	6	66	26	20	36	SCD270-0320-2-2-090HA05-HC619	30402104	○
3,30	6	66	26	20	36	SCD270-0330-2-2-090HA05-HC619	30402105	○
3,40	6	66	26	20	36	SCD270-0340-2-2-090HA05-HC619	30402106	○
3,50	6	66	26	20	36	SCD270-0350-2-2-090HA05-HC619	30402107	○
3,60	6	66	26	20	36	SCD270-0360-2-2-090HA05-HC619	30402108	○
3,70	6	66	26	20	36	SCD270-0370-2-2-090HA05-HC619	30402109	○
3,80	6	66	26	20	36	SCD270-0380-2-2-090HA05-HC619	30402110	○
3,90	6	66	26	20	36	SCD270-0390-2-2-090HA05-HC619	30402111	○
4,00	6	74	36	29	36	SCD270-0400-2-2-090HA05-HC619	30402112	●
4,10	6	74	36	29	36	SCD270-0410-2-2-090HA05-HC619	30402113	○
4,20	6	74	36	29	36	SCD270-0420-2-2-090HA05-HC619	30402114	○
4,30	6	74	36	29	36	SCD270-0430-2-2-090HA05-HC619	30402115	○
4,40	6	74	36	29	36	SCD270-0440-2-2-090HA05-HC619	30402116	○
4,50	6	74	36	29	36	SCD270-0450-2-2-090HA05-HC619	30402117	○
4,60	6	74	36	29	36	SCD270-0460-2-2-090HA05-HC619	30402118	○
4,70	6	74	36	29	36	SCD270-0470-2-2-090HA05-HC619	30402119	○
4,763 3/16"	6	74	36	29	36	SCD270-04763-2-2-090HA05-HC619	30402120	●
4,80	6	74	36	29	36	SCD270-0480-2-2-090HA05-HC619	30402121	○
4,90	6	74	36	29	36	SCD270-0490-2-2-090HA05-HC619	30402122	○
5,00	6	82	44	35	36	SCD270-0500-2-2-090HA05-HC619	30402123	●
5,10	6	82	44	35	36	SCD270-0510-2-2-090HA05-HC619	30402124	○
5,20	6	82	44	35	36	SCD270-0520-2-2-090HA05-HC619	30402125	○
5,30	6	82	44	35	36	SCD270-0530-2-2-090HA05-HC619	30402126	○
5,40	6	82	44	35	36	SCD270-0540-2-2-090HA05-HC619	30402127	○
5,50	6	82	44	35	36	SCD270-0550-2-2-090HA05-HC619	30402128	○
5,60	6	82	44	35	36	SCD270-0560-2-2-090HA05-HC619	30402129	○
5,70	6	82	44	35	36	SCD270-0570-2-2-090HA05-HC619	30402130	○
5,80	6	82	44	35	36	SCD270-0580-2-2-090HA05-HC619	30402131	○
5,90	6	82	44	35	36	SCD270-0590-2-2-090HA05-HC619	30402132	○
6,00	6	82	44	35	36	SCD270-0600-2-2-090HA05-HC619	30650496	●

MEGA-Drill-Composite-UDX

Solid carbide twist drill

SCD27 (5xD)

ø 6,10 - 9,80

Dimensions						Specification	Order number	
d ₁	d ₂ h6	l ₁	l ₂	l ₃	l ₄			
6,10	8	91	53	43	36	SCD270-0610-2-2-090HA05-HC619	30650497	○
6,20	8	91	53	43	36	SCD270-0620-2-2-090HA05-HC619	30650498	○
6,30	8	91	53	43	36	SCD270-0630-2-2-090HA05-HC619	30650499	○
6,350 1/4"	8	91	53	43	36	SCD270-0635-2-2-090HA05-HC619	30650500	●
6,40	8	91	53	43	36	SCD270-0640-2-2-090HA05-HC619	30650501	○
6,50	8	91	53	43	36	SCD270-0650-2-2-090HA05-HC619	30650502	○
6,60	8	91	53	43	36	SCD270-0660-2-2-090HA05-HC619	30650503	○
6,70	8	91	53	43	36	SCD270-0670-2-2-090HA05-HC619	30650504	○
6,80	8	91	53	43	36	SCD270-0680-2-2-090HA05-HC619	30650505	○
6,90	8	91	53	43	36	SCD270-0690-2-2-090HA05-HC619	30650506	○
7,00	8	91	53	43	36	SCD270-0700-2-2-090HA05-HC619	30650507	●
7,10	8	91	53	43	36	SCD270-0710-2-2-090HA05-HC619	30650508	○
7,20	8	91	53	43	36	SCD270-0720-2-2-090HA05-HC619	30650509	○
7,30	8	91	53	43	36	SCD270-0730-2-2-090HA05-HC619	30650510	○
7,40	8	91	53	43	36	SCD270-0740-2-2-090HA05-HC619	30650511	○
7,50	8	91	53	43	36	SCD270-0750-2-2-090HA05-HC619	30650512	○
7,60	8	91	53	43	36	SCD270-0760-2-2-090HA05-HC619	30650513	○
7,70	8	91	53	43	36	SCD270-0770-2-2-090HA05-HC619	30650514	○
7,80	8	91	53	43	36	SCD270-0780-2-2-090HA05-HC619	30650515	○
7,90	8	91	53	43	36	SCD270-0790-2-2-090HA05-HC619	30650516	○
7,938 5/16"	8	91	53	43	36	SCD270-07938-2-2-090HA05-HC619	30650517	●
8,00	8	91	53	43	40	SCD270-0800-2-2-090HA05-HC619	30650518	●
8,10	10	103	61	49	40	SCD270-0810-2-2-090HA05-HC611	30650519	○
8,20	10	103	61	49	40	SCD270-0820-2-2-090HA05-HC611	30650520	○
8,30	10	103	61	49	40	SCD270-0830-2-2-090HA05-HC611	30650521	○
8,40	10	103	61	49	40	SCD270-0840-2-2-090HA05-HC611	30650522	○
8,50	10	103	61	49	40	SCD270-0850-2-2-090HA05-HC611	30650523	○
8,60	10	103	61	49	40	SCD270-0860-2-2-090HA05-HC611	30650524	○
8,70	10	103	61	49	40	SCD270-0870-2-2-090HA05-HC611	30650525	○
8,80	10	103	61	49	40	SCD270-0880-2-2-090HA05-HC611	30650526	○
8,90	10	103	61	49	40	SCD270-0890-2-2-090HA05-HC611	30650527	○
9,00	10	103	61	49	40	SCD270-0900-2-2-090HA05-HC611	30650528	●
9,10	10	103	61	49	40	SCD270-0910-2-2-090HA05-HC611	30650529	○
9,20	10	103	61	49	40	SCD270-0920-2-2-090HA05-HC611	30650530	○
9,30	10	103	61	49	40	SCD270-0930-2-2-090HA05-HC611	30650531	○
9,40	10	103	61	49	40	SCD270-0940-2-2-090HA05-HC611	30650532	○
9,50	10	103	61	49	40	SCD270-0950-2-2-090HA05-HC611	30650533	○
9,525 3/8"	10	103	61	49	40	SCD270-09525-2-2-090HA05-HC611	30650534	●
9,60	10	103	61	49	40	SCD270-0960-2-2-090HA05-HC611	30650535	○
9,70	10	103	61	49	40	SCD270-0970-2-2-090HA05-HC611	30650536	○
9,80	10	103	61	49	40	SCD270-0980-2-2-090HA05-HC611	30650537	○

Dimensions in mm.

Machining values see chapter technical information.

● Available ex stock Germany.

○ Standard tool not on stock (delivery on request).

MEGA-Drill-Composite-UDX

Solid carbide twist drill

SCD27 (5xD)

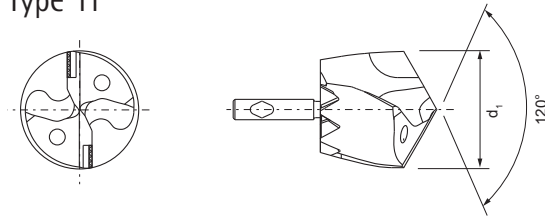
ø 9,90 - 12,00

Dimensions						Specification	Order number	
d ₁	d ₂ h6	l ₁	l ₂	l ₃	l ₄			
9,90	10	103	61	49	40	SCD270-0990-2-2-090HA05-HC611	30650538	○
10,00	10	103	61	49	40	SCD270-1000-2-2-090HA05-HC611	30650539	●
10,10	12	118	71	56	45	SCD270-1010-2-2-090HA05-HC611	30650540	○
10,20	12	118	71	56	45	SCD270-1020-2-2-090HA05-HC611	30650541	○
10,30	12	118	71	56	45	SCD270-1030-2-2-090HA05-HC611	30650542	○
10,40	12	118	71	56	45	SCD270-1040-2-2-090HA05-HC611	30650543	○
10,50	12	118	71	56	45	SCD270-1050-2-2-090HA05-HC611	30650544	○
10,60	12	118	71	56	45	SCD270-1060-2-2-090HA05-HC611	30650545	○
10,70	12	118	71	56	45	SCD270-1070-2-2-090HA05-HC611	30650546	○
10,80	12	118	71	56	45	SCD270-1080-2-2-090HA05-HC611	30650547	○
10,90	12	118	71	56	45	SCD270-1090-2-2-090HA05-HC611	30650548	○
11,00	12	118	71	56	45	SCD270-1100-2-2-090HA05-HC611	30650549	●
11,10	12	118	71	56	45	SCD270-1110-2-2-090HA05-HC611	30650550	○
11,111 7/16"	12	118	71	56	45	SCD270-11111-2-2-090HA05-HC611	30650551	●
11,20	12	118	71	56	45	SCD270-1120-2-2-090HA05-HC611	30650552	○
11,30	12	118	71	56	45	SCD270-1130-2-2-090HA05-HC611	30650553	○
11,40	12	118	71	56	45	SCD270-1140-2-2-090HA05-HC611	30650554	○
11,50	12	118	71	56	45	SCD270-1150-2-2-090HA05-HC611	30650555	○
11,60	12	118	71	56	45	SCD270-1160-2-2-090HA05-HC611	30650556	○
11,70	12	118	71	56	45	SCD270-1170-2-2-090HA05-HC611	30650557	○
11,80	12	118	71	56	45	SCD270-1180-2-2-090HA05-HC611	30650558	○
11,90	12	118	71	56	45	SCD270-1190-2-2-090HA05-HC611	30650559	○
12,00	12	118	71	56	45	SCD270-1200-2-2-090HA05-HC611	30650560	●

TTD-Diamond-Composite-Drill

Solid carbide replaceable drill head with PCD tipping

Type 11



Design:

Drill diameter:	12,00 – 32,00 mm
Bore tolerance:	IT9
Shank form:	HA
Number of blades:	2
Tip angle:	120°
Number of guiding chamfers:	2
Helix angle:	30°

Application: CFRP/GFRP with multidirectional fibres

Dimensions	Connection	Specification	Order number	
d ₁				
12,00	TTS12-A	TTD-2F11-1200-PU620	30620877	○
12,50	TTS12-A	TTD-2F11-1250-PU620	30620878	○
12,70	TTS12-A	TTD-2F11-1270-PU620	30620879	○
13,00	TTS12-A	TTD-2F11-1300-PU620	30620880	○
13,50	TTS12-A	TTD-2F11-1350-PU620	30620881	○
13,70	TTS12-A	TTD-2F11-1370-PU620	30620882	○
14,00	TTS12-A	TTD-2F11-1400-PU620	30620883	○
14,32	TTS12-A	TTD-2F11-1423-PU620	30620884	○
14,50	TTS12-A	TTD-2F11-1450-PU620	30620885	○
14,70	TTS12-A	TTD-2F11-1470-PU620	30620886	○
15,00	TTS12-A	TTD-2F11-1500-PU620	30620887	○
15,30	TTS12-A	TTD-2F11-1530-PU620	30620888	○
15,50	TTS12-A	TTD-2F11-1550-PU620	30620889	○
15,70	TTS12-A	TTD-2F11-1570-PU620	30620890	○
15,88	TTS12-A	TTD-2F11-1588-PU620	30620891	○
16,00	TTS12-A	TTD-2F11-1600-PU620	30620892	○
16,50	TTS12-A	TTD-2F11-1650-PU620	30620893	○
16,70	TTS12-A	TTD-2F11-1670-PU620	30620894	○
17,00	TTS12-A	TTD-2F11-1700-PU620	30620895	○
17,50	TTS12-A	TTD-2F11-1750-PU620	30620896	○
17,70	TTS12-A	TTD-2F11-1770-PU620	30620897	○
18,00	TTS12-A	TTD-2F11-1800-PU620	30620898	○
18,50	TTS12-A	TTD-2F11-1850-PU620	30620899	○
18,70	TTS12-A	TTD-2F11-1870-PU620	30620900	○
19,00	TTS12-A	TTD-2F11-1900-PU620	30620901	○
19,05	TTS12-A	TTD-2F11-1905-PU620	30620902	○
19,50	TTS12-A	TTD-2F11-1950-PU620	30620903	○
19,70	TTS12-A	TTD-2F11-1970-PU620	30620904	○
20,00	TTS12-A	TTD-2F11-2000-PU620	30620905	○
20,50	TTS12-A	TTD-2F11-2050-PU620	30620906	○
20,70	TTS12-A	TTD-2F11-2070-PU620	30620907	○

Suitable replaceable head holder see pages 45 – 47.

Dimensions in mm.

Machining values see chapter technical information.

● Available ex stock Germany.

○ Standard tool not on stock (delivery on request).

TTD-Diamond-Composite-Drill

Solid carbide replaceable drill head with PCD tipping

Type 11

ø 21,00 - 32,00

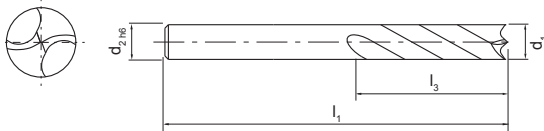
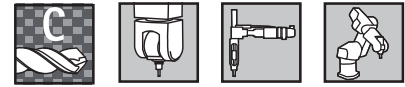
Dimensions	Connection	Specification	Order number	
d ₁				
21,00	TTS12-A	TTD-2F11-2100-PU620	30620908	○
21,50	TTS12-A	TTD-2F11-2150-PU620	30620909	○
21,70	TTS12-A	TTD-2F11-2170-PU620	30620910	○
22,00	TTS12-A	TTD-2F11-2200-PU620	30620911	○
22,22	TTS12-A	TTD-2F11-2222-PU620	30620912	○
22,50	TTS12-A	TTD-2F11-2250-PU620	30620913	○
22,70	TTS12-A	TTD-2F11-2270-PU620	30620914	○
23,00	TTS12-A	TTD-2F11-2300-PU620	30620915	○
23,50	TTS12-A	TTD-2F11-2350-PU620	30620916	○
23,70	TTS12-A	TTD-2F11-2370-PU620	30620917	○
24,00	TTS12-A	TTD-2F11-2400-PU620	30620918	○
24,50	TTS12-A	TTD-2F11-2450-PU620	30620919	○
24,70	TTS18-A	TTD-2F11-2470-PU620	30620920	○
25,00	TTS18-A	TTD-2F11-2500-PU620	30620921	○
25,40	TTS18-A	TTD-2F11-2540-PU620	30620922	○
25,50	TTS18-A	TTD-2F11-2550-PU620	30620923	○
25,70	TTS18-A	TTD-2F11-2570-PU620	30620924	○
26,00	TTS18-A	TTD-2F11-2600-PU620	30620925	○
26,50	TTS18-A	TTD-2F11-2650-PU620	30620926	○
26,70	TTS18-A	TTD-2F11-2670-PU620	30620927	○
27,00	TTS18-A	TTD-2F11-2700-PU620	30620928	○
27,50	TTS18-A	TTD-2F11-2750-PU620	30620929	○
27,70	TTS18-A	TTD-2F11-2770-PU620	30620930	○
28,00	TTS18-A	TTD-2F11-2800-PU620	30620931	○
28,50	TTS18-A	TTD-2F11-2850-PU620	30620932	○
28,60	TTS18-A	TTD-2F11-2860-PU620	30620933	○
28,70	TTS18-A	TTD-2F11-2870-PU620	30620934	○
29,00	TTS18-A	TTD-2F11-2900-PU620	30620935	○
29,50	TTS18-A	TTD-2F11-2950-PU620	30620936	○
29,70	TTS18-A	TTD-2F11-2970-PU620	30620937	○
30,00	TTS18-A	TTD-2F11-3000-PU620	30620938	○
30,20	TTS18-A	TTD-2F11-3020-PU620	30620939	○
30,50	TTS18-A	TTD-2F11-3050-PU620	30620940	○
30,70	TTS18-A	TTD-2F11-3070-PU620	30620941	○
31,00	TTS18-A	TTD-2F11-3100-PU620	30620942	○
31,50	TTS18-A	TTD-2F11-3150-PU620	30620943	○
31,70	TTS18-A	TTD-2F11-3170-PU620	30620944	○
31,80	TTS18-A	TTD-2F11-3180-PU620	30620945	○
32,00	TTS18-A	TTD-2F11-3200-PU620	30620946	○

Suitable replaceable head holder see pages 45 – 47.

MEGA-Drill-Aramid

Solid carbide twist drill

SCD28 (5xD), external coolant supply



Design:

Drill diameter:	3,00 - 12,00 mm
Bore tolerance:	IT 8
Shank form:	HA
Coating:	uncoated
Number of blades:	2
Tip angle:	90°
Helix angle:	30°

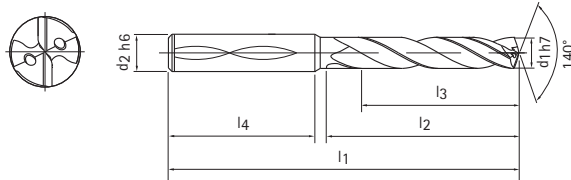
Application: Aramid

Dimensions				Specification	Order number	
d ₁	d ₂ h6	l ₁	l ₃			
3,00	3,0	40	12	SCD280-0300-2-0-090HA03-HU610	30402323	●
4,00	4,0	55	18	SCD280-0400-2-0-090HA03-HU610	30402324	●
5,00	5,0	62	26	SCD280-0500-2-0-090HA03-HU610	30402325	●
6,00	6,0	66	28	SCD280-0600-2-0-090HA03-HU610	30402326	●
6,50	6,5	70	31	SCD280-0650-2-0-090HA03-HU610	30402327	●
7,00	7,0	74	34	SCD280-0700-2-0-090HA03-HU610	30402328	●
8,00	8,0	79	37	SCD280-0800-2-0-090HA03-HU610	30402329	●
8,50	8,5	79	37	SCD280-0850-2-0-090HA03-HU610	30402330	●
9,00	9,0	84	40	SCD280-0900-2-0-090HA03-HU610	30402331	●
10,00	10,0	89	48	SCD280-1000-2-0-090HA03-HU610	30402332	●
12,00	12,0	102	50	SCD280-1200-2-0-090HA03-HU610	30402333	●

MEGA-Drill-Inco

Solid carbide twist drill

SCD29 (5xD), internal coolant supply



Design:

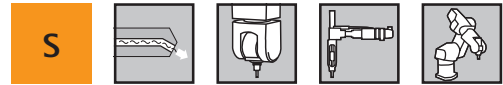
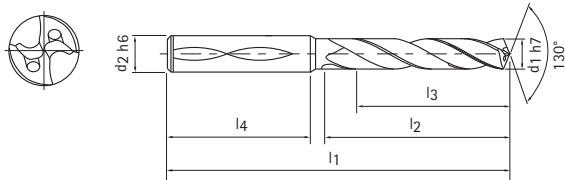
Drill diameter:	3,00 - 12,00 mm
Bore tolerance:	IT 8
Shank form:	HA
Coating:	uncoated
Number of blades:	2
Tip angle:	140°
Number of guiding chamfers:	4
Helix angle:	30°

Application: Nickel-based alloys

Dimensions						Specification	Order number	
d1 h7	d2 h6	l1	l2	l3	l4			
3,00	6	66	28	23	36	SCD291-0300-2-4-140HA05-HU621	30393829	●
4,00	6	74	36	29	36	SCD291-0400-2-4-140HA05-HU621	30393830	○
5,00	6	82	44	35	36	SCD291-0500-2-4-140HA05-HU621	30393831	●
6,00	6	82	44	35	36	SCD291-0600-2-4-140HA05-HU621	30393832	●
7,00	8	91	53	43	36	SCD291-0700-2-4-140HA05-HU621	30393833	○
8,00	8	91	53	43	40	SCD291-0800-2-4-140HA05-HU621	30393834	●
9,00	10	103	61	49	40	SCD291-0900-2-4-140HA05-HU621	30393835	○
10,00	10	103	61	49	40	SCD291-1000-2-4-140HA05-HU621	30393836	●
11,00	12	118	71	56	45	SCD291-1100-2-4-140HA05-HU621	30393837	○
12,00	12	118	71	56	45	SCD291-1200-2-4-140HA05-HU621	30393838	○

MEGA-Drill-Titan

Solid carbide twist drill
SCD30 (5xD), internal coolant supply



Design:

Drill diameter:	3,00 - 12,00 mm
Bore tolerance:	IT8
Shank form:	HA
Coating:	uncoated
Number of blades:	2
Tip angle:	130°
Number of guiding chamfers:	3
Helix angle:	30°

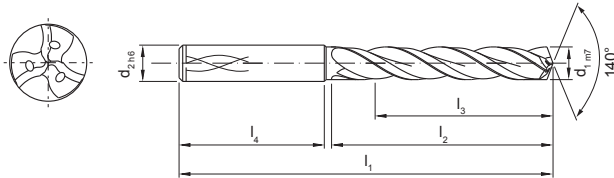
Application: Titanium

Dimensions						Specification	Order number	
d1 h7	d2 h6	l1	l2	l3	l4			
3,00	6	66	28	23	36	SCD301-0300-2-3-130HA05-HU621	30393819	●
4,00	6	74	36	29	36	SCD301-0400-2-3-130HA05-HU621	30393820	○
5,00	6	82	44	35	36	SCD301-0500-2-3-130HA05-HU621	30393821	●
6,00	6	82	44	35	36	SCD301-0600-2-3-130HA05-HU621	30393822	●
7,00	8	91	53	43	36	SCD301-0700-2-3-130HA05-HU621	30393823	○
8,00	8	91	53	43	40	SCD301-0800-2-3-130HA05-HU621	30393824	●
9,00	10	103	61	49	40	SCD301-0900-2-3-130HA05-HU621	30393825	○
10,00	10	103	61	49	40	SCD301-1000-2-3-130HA05-HU621	30393826	●
11,00	12	118	71	56	45	SCD301-1100-2-3-130HA05-HU621	30393827	○
12,00	12	118	71	56	45	SCD301-1200-2-3-130HA05-HU621	30393828	○

Tritan-Drill

Solid carbide twist drill

SCD44 (5xD), internal coolant supply



Design:

Drill diameter:	5,00 – 20,00 mm
Bore tolerance:	IT 9 (achievable)
Shank form:	HA
Coating:	Chrom based TiAl
Number of blades:	3
Guide chamfer:	3
Point geometry:	Specific lead geometry
Tip angle:	140°
Helix angle:	30°

Application: Steel, stainless steel and cast iron. Ideal for through-drilling or on entry into cross bores

Dimensions						Specification	Order number	
d1 m7	d2 h6	l1	l2	l3	l4			
5,00	6,00	82,00	44	35	36	SCD441-0500-3-3-140HA05-HP619	30551907	●
5,10	6,00	82,00	44	35	36	SCD441-0510-3-3-140HA05-HP619	30551908	●
5,20	6,00	82,00	44	35	36	SCD441-0520-3-3-140HA05-HP619	30551909	○
5,30	6,00	82,00	44	35	36	SCD441-0530-3-3-140HA05-HP619	30551910	○
5,40	6,00	82,00	44	35	36	SCD441-0540-3-3-140HA05-HP619	30551911	○
5,50	6,00	82,00	44	35	36	SCD441-0550-3-3-140HA05-HP619	30551912	●
5,55	6,00	82,00	44	35	36	SCD441-0555-3-3-140HA05-HP619	30551913	○
5,60	6,00	82,00	44	35	36	SCD441-0560-3-3-140HA05-HP619	30551914	○
5,70	6,00	82,00	44	35	36	SCD441-0570-3-3-140HA05-HP619	30551915	○
5,80	6,00	82,00	44	35	36	SCD441-0580-3-3-140HA05-HP619	30551916	●
5,90	6,00	82,00	44	35	36	SCD441-0590-3-3-140HA05-HP619	30551917	●
6,00	6,00	82,00	44	35	36	SCD441-0600-3-3-140HA05-HP619	30551918	●
6,10	8,00	91,00	53	43	36	SCD441-0610-3-3-140HA05-HP619	30551919	●
6,20	8,00	91,00	53	43	36	SCD441-0620-3-3-140HA05-HP619	30551920	●
6,30	8,00	91,00	53	43	36	SCD441-0630-3-3-140HA05-HP619	30551921	○
6,40	8,00	91,00	53	43	36	SCD441-0640-3-3-140HA05-HP619	30551922	●
6,50	8,00	91,00	53	43	36	SCD441-0650-3-3-140HA05-HP619	30551923	●
6,60	8,00	91,00	53	43	36	SCD441-0660-3-3-140HA05-HP619	30551924	●
6,70	8,00	91,00	53	43	36	SCD441-0670-3-3-140HA05-HP619	30551925	○
6,80	8,00	91,00	53	43	36	SCD441-0680-3-3-140HA05-HP619	30551926	●
6,90	8,00	91,00	53	43	36	SCD441-0690-3-3-140HA05-HP619	30551927	●
7,00	8,00	91,00	53	43	36	SCD441-0700-3-3-140HA05-HP619	30551928	●
7,10	8,00	91,00	53	43	36	SCD441-0710-3-3-140HA05-HP619	30551930	○
7,20	8,00	91,00	53	43	36	SCD441-0720-3-3-140HA05-HP619	30551931	○
7,30	8,00	91,00	53	43	36	SCD441-0730-3-3-140HA05-HP619	30551932	○
7,40	8,00	91,00	53	43	36	SCD441-0740-3-3-140HA05-HP619	30551933	○
7,50	8,00	91,00	53	43	36	SCD441-0750-3-3-140HA05-HP619	30551934	●
7,60	8,00	91,00	53	43	36	SCD441-0760-3-3-140HA05-HP619	30551935	●
7,70	8,00	91,00	53	43	36	SCD441-0770-3-3-140HA05-HP619	30551936	○
7,80	8,00	91,00	53	43	36	SCD441-0780-3-3-140HA05-HP619	30551937	○
7,90	8,00	91,00	53	43	36	SCD441-0790-3-3-140HA05-HP619	30551938	○
8,00	8,00	91,00	53	43	36	SCD441-0800-3-3-140HA05-HP619	30551939	●

Tritan-Drill

Solid carbide twist drill

SCD44 (5xD), internal coolant supply

ø 8,10 - 12,00

Dimensions						Specification	Order number	
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄			
8,10	10,00	103,00	61	49	40	SCD441-0810-3-3-140HA05-HP619	30551940	●
8,20	10,00	103,00	61	49	40	SCD441-0820-3-3-140HA05-HP619	30551941	○
8,30	10,00	103,00	61	49	40	SCD441-0830-3-3-140HA05-HP619	30551942	○
8,40	10,00	103,00	61	49	40	SCD441-0840-3-3-140HA05-HP619	30551943	○
8,50	10,00	103,00	61	49	40	SCD441-0850-3-3-140HA05-HP619	30551944	●
8,60	10,00	103,00	61	49	40	SCD441-0860-3-3-140HA05-HP619	30551945	○
8,70	10,00	103,00	61	49	40	SCD441-0870-3-3-140HA05-HP619	30551946	○
8,80	10,00	103,00	61	49	40	SCD441-0880-3-3-140HA05-HP619	30551947	○
8,90	10,00	103,00	61	49	40	SCD441-0890-3-3-140HA05-HP619	30551948	○
9,00	10,00	103,00	61	49	40	SCD441-0900-3-3-140HA05-HP619	30551949	●
9,10	10,00	103,00	61	49	40	SCD441-0910-3-3-140HA05-HP619	30551950	●
9,20	10,00	103,00	61	49	40	SCD441-0920-3-3-140HA05-HP619	30551951	○
9,30	10,00	103,00	61	49	40	SCD441-0930-3-3-140HA05-HP619	30551952	●
9,40	10,00	103,00	61	49	40	SCD441-0940-3-3-140HA05-HP619	30551953	○
9,50	10,00	103,00	61	49	40	SCD441-0950-3-3-140HA05-HP619	30551954	○
9,60	10,00	103,00	61	49	40	SCD441-0960-3-3-140HA05-HP619	30551955	○
9,70	10,00	103,00	61	49	40	SCD441-0970-3-3-140HA05-HP619	30551956	○
9,80	10,00	103,00	61	49	40	SCD441-0980-3-3-140HA05-HP619	30551957	○
9,90	10,00	103,00	61	49	40	SCD441-0990-3-3-140HA05-HP619	30551958	○
10,00	10,00	103,00	61	49	40	SCD441-1000-3-3-140HA05-HP619	30551959	●
10,10	12,00	118,00	71	56	45	SCD441-1010-3-3-140HA05-HP619	30551960	○
10,20	12,00	118,00	71	56	45	SCD441-1020-3-3-140HA05-HP619	30551961	●
10,30	12,00	118,00	71	56	45	SCD441-1030-3-3-140HA05-HP619	30551962	○
10,40	12,00	118,00	71	56	45	SCD441-1040-3-3-140HA05-HP619	30551963	○
10,50	12,00	118,00	71	56	45	SCD441-1050-3-3-140HA05-HP619	30551964	○
10,60	12,00	118,00	71	56	45	SCD441-1060-3-3-140HA05-HP619	30551965	○
10,70	12,00	118,00	71	56	45	SCD441-1070-3-3-140HA05-HP619	30551966	○
10,80	12,00	118,00	71	56	45	SCD441-1080-3-3-140HA05-HP619	30551967	○
10,90	12,00	118,00	71	56	45	SCD441-1090-3-3-140HA05-HP619	30551968	○
11,00	12,00	118,00	71	56	45	SCD441-1100-3-3-140HA05-HP619	30551969	●
11,10	12,00	118,00	71	56	45	SCD441-1110-3-3-140HA05-HP619	30551970	○
11,20	12,00	118,00	71	56	45	SCD441-1120-3-3-140HA05-HP619	30551971	○
11,30	12,00	118,00	71	56	45	SCD441-1130-3-3-140HA05-HP619	30551972	○
11,40	12,00	118,00	71	56	45	SCD441-1140-3-3-140HA05-HP619	30551973	○
11,50	12,00	118,00	71	56	45	SCD441-1150-3-3-140HA05-HP619	30551974	○
11,60	12,00	118,00	71	56	45	SCD441-1160-3-3-140HA05-HP619	30551975	○
11,70	12,00	118,00	71	56	45	SCD441-1170-3-3-140HA05-HP619	30551976	○
11,80	12,00	118,00	71	56	45	SCD441-1180-3-3-140HA05-HP619	30551977	●
11,90	12,00	118,00	71	56	45	SCD441-1190-3-3-140HA05-HP619	30551978	○
12,00	12,00	118,00	71	56	45	SCD441-1200-3-3-140HA05-HP619	30551979	●

Dimensions in mm.

Machining values see chapter technical information.

● Available ex stock Germany.

○ Standard tool not on stock (delivery on request).

Tritan-Drill

Solid carbide twist drill

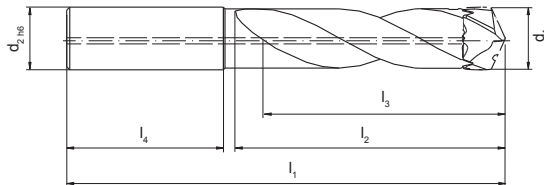
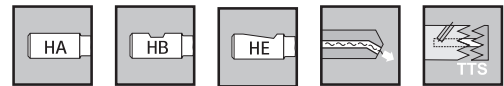
SCD44 (5xD), internal coolant supply

Ø 12,50 - 20,00

Dimensions						Specification	Order number	
d ₁ m7	d ₂ h6	l ₁	l ₂	l ₃	l ₄			
12,50	14,00	124,00	77	60	45	SCD441-1250-3-3-140HA05-HP619	30551980	●
12,80	14,00	124,00	77	60	45	SCD441-1280-3-3-140HA05-HP619	30551981	○
13,00	14,00	124,00	77	60	45	SCD441-1300-3-3-140HA05-HP619	30551982	●
13,50	14,00	124,00	77	60	45	SCD441-1400-3-3-140HA05-HP619	30551983	○
13,80	14,00	124,00	77	60	45	SCD441-1380-3-3-140HA05-HP619	30551984	○
14,00	14,00	124,00	77	60	45	SCD441-1400-3-3-140HA05-HP619	30551985	●
14,50	16,00	133,00	83	63	48	SCD441-1450-3-3-140HA05-HP619	30551986	●
14,80	16,00	133,00	83	63	48	SCD441-1480-3-3-140HA05-HP619	30551987	○
15,00	16,00	133,00	83	63	48	SCD441-1500-3-3-140HA05-HP619	30551988	○
15,50	16,00	133,00	83	63	48	SCD441-1550-3-3-140HA05-HP619	30551989	○
15,80	16,00	133,00	83	63	48	SCD441-1580-3-3-140HA05-HP619	30551990	○
16,00	16,00	133,00	83	63	48	SCD441-1600-3-3-140HA05-HP619	30551991	●
16,50	18,00	143,00	93	71	48	SCD441-1650-3-3-140HA05-HP619	30551992	○
16,80	18,00	143,00	93	71	48	SCD441-1680-3-3-140HA05-HP619	30551993	○
17,00	18,00	143,00	93	71	48	SCD441-1700-3-3-140HA05-HP619	30551994	○
17,50	18,00	143,00	93	71	48	SCD441-1750-3-3-140HA05-HP619	30551995	○
17,80	18,00	143,00	93	71	48	SCD441-1780-3-3-140HA05-HP619	30551996	○
18,00	18,00	143,00	93	71	48	SCD441-1800-3-3-140HA05-HP619	30551997	○
18,50	20,00	153,00	101	77	50	SCD441-1850-3-3-140HA05-HP619	30551998	○
18,80	20,00	153,00	101	77	50	SCD441-1880-3-3-140HA05-HP619	30551999	○
19,00	20,00	153,00	101	77	50	SCD441-1900-3-3-140HA05-HP619	30552000	○
19,50	20,00	153,00	101	77	50	SCD441-1950-3-3-140HA05-HP619	30552001	○
19,80	20,00	153,00	101	77	50	SCD441-1980-3-3-140HA05-HP619	30552002	○
20,00	20,00	153,00	101	77	50	SCD441-2000-3-3-140HA05-HP619	30552003	○

Replaceable head holder TTS

TTS100 with front clamping system for replaceable head drill
TTD (3xD), internal coolant supply



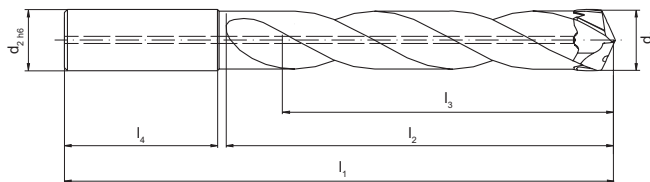
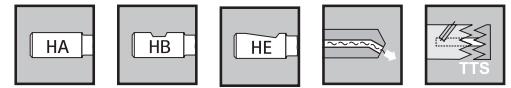
Design:

for drill-ø: 12,00 - 45,49 mm
Shank form: HA (Standard), HB, HE (DIN 6535)
Changing system: Front clamping system, head replacement on the machine possible

Dimensions							Specification	Shank HA		Shank HB		Shank HE	
d ₁	Connection	d ₂ h6	l ₁	l ₂	l ₃	l ₄		Order number		Order number		Order number	
12,00-12,49	TTS12-S	14	100	53	38	45	TTS100-12-DR3-1200-14	30231822	●	30232785	●	30232818	●
12,50-12,99	TTS12-S	14	105	55	39	45	TTS100-12-DR3-1250-14	30231823	●	30232787	●	30232820	●
13,00-13,49	TTS12-S	14	105	57	41	45	TTS100-12-DR3-1300-14	30231824	●	30232789	●	30232821	●
13,50-13,99	TTS12-S	16	110	59	42	48	TTS100-12-DR3-1350-16	30231825	●	30232790	●	30232827	●
14,00-14,49	TTS12-S	16	115	61	44	48	TTS100-12-DR3-1400-16	30231831	●	30232792	●	30232828	●
14,50-14,99	TTS12-S	16	115	63	45	48	TTS100-12-DR3-1450-16	30231832	●	30232793	●	30232829	●
15,00-15,49	TTS12-S	16	115	65	47	48	TTS100-12-DR3-1500-16	30231833	●	30232794	●	30232830	●
15,50-16,49	TTS12-S	18	120	70	50	48	TTS100-12-DR3-1550-18	30191550	●	30191496	●	30198891	●
16,50-17,49	TTS12-S	18	125	74	53	48	TTS100-12-DR3-1650-18	30191551	●	30191497	●	30198895	●
17,50-18,49	TTS12-S	18	130	78	56	48	TTS100-12-DR3-1750-18	30191552	●	30191498	●	30198932	●
18,50-19,49	TTS12-S	20	135	82	59	50	TTS100-12-DR3-1850-20	30191553	●	30191499	●	30198933	●
19,50-20,49	TTS12-S	20	140	87	62	50	TTS100-12-DR3-1950-20	30191554	●	30191500	●	30198934	●
20,50-21,49	TTS12-S	25	150	91	65	56	TTS100-12-DR3-2050-25	30191555	●	30191501	●	30198935	●
21,50-22,49	TTS12-S	25	155	95	68	56	TTS100-12-DR3-2150-25	30191556	●	30191502	●	30198936	●
22,50-23,49	TTS12-S	25	160	99	71	56	TTS100-12-DR3-2250-25	30191557	●	30191503	●	30198937	●
23,50-24,49	TTS12-S	25	165	103	74	56	TTS100-12-DR3-2350-25	30191558	●	30191504	●	30198938	●
24,50-25,49	TTS18-S	25	165	108	77	56	TTS100-18-DR3-2450-25	30191559	●	30191505	●	30198939	●
25,50-26,49	TTS18-S	25	175	112	80	56	TTS100-18-DR3-2550-25	30191561	●	30191507	●	30198940	●
26,50-27,49	TTS18-S	25	175	116	83	56	TTS100-18-DR3-2650-25	30191562	●	30191508	●	30198941	●
27,50-28,49	TTS18-S	25	180	120	86	56	TTS100-18-DR3-2750-25	30191563	●	30191509	●	30198942	●
28,50-29,49	TTS18-S	32	190	124	89	60	TTS100-18-DR3-2850-32	30191564	●	30191510	●	30198943	●
29,50-30,49	TTS18-S	32	195	129	92	60	TTS100-18-DR3-2950-32	30191565	●	30191511	●	30198945	●
30,50-31,49	TTS18-S	32	195	133	95	60	TTS100-18-DR3-3050-32	30191566	●	30191512	●	30198946	●
31,50-32,49	TTS18-S	32	200	137	98	60	TTS100-18-DR3-3150-32	30191567	●	30191513	●	30198948	●
32,50-33,49	TTS18-S	32	210	144	101	60	TTS100-18-DR3-3250-32	30322281	○	30322289	○	30322297	○
33,50-34,49	TTS18-S	32	215	148	104	60	TTS100-18-DR3-3350-32	30322282	○	30322290	○	30322298	○
34,50-35,49	TTS18-S	32	220	153	107	60	TTS100-18-DR3-3450-32	30322283	○	30322291	○	30322299	○
*35,50-37,49	TTS18-S	40	237	161	113	70	TTS100-18-DR3-3550-40					30322300	○
*37,50-39,49	TTS18-S	40	247	170	119	70	TTS100-18-DR3-3750-40					30322301	○
*39,50-41,49	TTS18-S	40	257	178	125	70	TTS100-18-DR3-3950-40					30322302	○
*41,50-43,49	TTS18-S	40	265	187	131	70	TTS100-18-DR3-4150-40					30322303	○
*43,50-45,49	TTS18-S	40	275	196	137	70	TTS100-18-DR3-4350-40					30322304	○

Replaceable head holder TTS

TTS100 with front clamping system for replaceable head drill
TTD (5xD), internal coolant supply



Design:

für Bohrer-ø:

12,00 - 32,49 mm

Shank form:

HA (Standard), HB, HE (DIN 6535)

Changing system:

Front clamping system,
head replacement on the machine possible

Dimensions							Specification	Shank HA		Shank HB		Shank HE	
d ₁	Connection	d ₂ h6	l ₁	l ₂	l ₃	l ₄		Order number		Order number		Order number	
12,00-12,49	TTS12-S	14	125	78	62,45	45	TTS100-12-DR5-1200-14	30231835	●	30232796	●	30232832	●
12,50-12,99	TTS12-S	14	130	81	64,95	45	TTS100-12-DR5-1250-14	30231836	●	30232798	●	30232833	●
13,00-13,49	TTS12-S	14	130	84	67,45	45	TTS100-12-DR5-1300-14	30231837	●	32032799	●	30232834	●
13,50-13,99	TTS12-S	16	140	88	69,95	48	TTS100-12-DR5-1350-16	30231838	●	30232800	●	30232835	●
14,00-14,49	TTS12-S	16	140	90	72,45	48	TTS100-12-DR5-1400-16	30231839	●	30232801	●	30232836	●
14,50-14,99	TTS12-S	16	145	94	74,95	48	TTS100-12-DR5-1450-16	30231840	●	30232802	●	30232837	●
15,00-15,49	TTS12-S	16	145	96	77,45	48	TTS100-12-DR5-1500-16	30231841	●	30232803	●	30232838	●
15,50-16,49	TTS12-S	18	155	103	82,45	48	TTS100-12-DR5-1550-18	30191568	●	30191514	●	30198949	●
16,50-17,49	TTS12-S	18	160	109	87,45	48	TTS100-12-DR5-1650-18	30191569	●	30191515	●	30198950	●
17,50-18,49	TTS12-S	18	165	115	92,45	48	TTS100-12-DR5-1750-18	30191570	●	30191516	●	30198951	●
18,50-19,49	TTS12-S	20	175	121	97,45	50	TTS100-12-DR5-1850-20	30191571	●	30191517	●	30198952	●
19,50-20,49	TTS12-S	20	180	128	102,45	50	TTS100-12-DR5-1950-20	30191572	●	30191518	●	30198953	●
20,50-21,49	TTS12-S	25	195	134	107,45	56	TTS100-12-DR5-2050-25	30191573	●	30191519	●	30198954	●
21,50-22,49	TTS12-S	25	200	140	112,45	56	TTS100-12-DR5-2150-25	30191574	●	30191520	●	30198955	●
22,50-23,49	TTS12-S	25	205	146	117,45	56	TTS100-12-DR5-2250-25	30191575	●	30191521	●	30198956	●
23,50-24,49	TTS12-S	25	210	152	122,45	56	TTS100-12-DR5-2350-25	30191576	●	30191522	●	30198957	●
24,50-25,49	TTS18-S	25	220	159	127,45	56	TTS100-18-DR5-2450-25	30191577	●	30191523	●	30198958	●
25,50-26,49	TTS18-S	25	225	165	132,45	56	TTS100-18-DR5-2550-25	30191579	●	30191525	●	30198959	●
26,50-27,49	TTS18-S	25	230	171	137,45	56	TTS100-18-DR5-2650-25	30191580	●	30191526	●	30198960	●
27,50-28,49	TTS18-S	25	240	177	142,45	56	TTS100-18-DR5-2750-25	30191581	●	30191527	●	30198961	●
28,50-29,49	TTS18-S	32	250	183	147,45	60	TTS100-18-DR5-2850-32	30191582	●	30191528	●	30198962	●
29,50-30,49	TTS18-S	32	255	190	152,45	60	TTS100-18-DR5-2950-32	30191583	●	30191529	●	30198963	●
30,50-31,49	TTS18-S	32	260	196	157,45	60	TTS100-18-DR5-3050-32	30191584	●	30191530	●	30198964	●
31,50-32,00	TTS18-S	32	265	202	162,45	60	TTS100-18-DR5-3150-32	30191585	●	30191531	●	30198965	●

Dimensions in mm.

Machining values see chapter technical information.

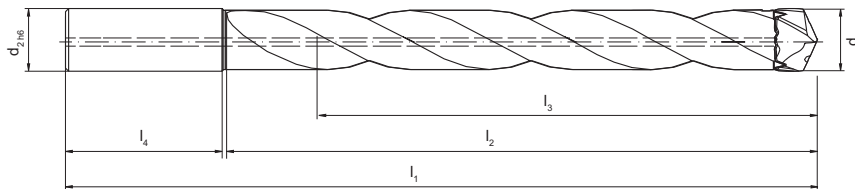
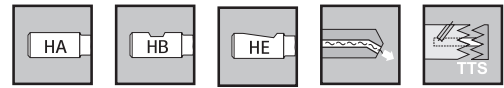
Special designs and other coatings on request.

● Available ex stock Germany.

○ Standard tool not on stock (delivery on request).

Replaceable head holder TTS

TTS100 with front clamping system for replaceable head drill
TTD (8xD), internal coolant supply



Design:
for drill-ø: 12,00 - 32,49 mm
Shank form: HA (Standard), HB, HE (DIN 6535)
Changing system: Front clamping system, head replacement on the machine possible

Dimensions							Specification	Shank HA		Shank HB		Shank HE	
d ₁	Connection	d ₂ h6	l ₁	l ₂	l ₃	l ₄		Order number		Order number		Order number	
12,00-12,49	TTS12-S	14	165	116	100	45	TTS100-12-DR8-1200-14	30231843	●	30232805	●	30232840	●
12,50-12,99	TTS12-S	14	170	121	104	45	TTS100-12-DR8-1250-14	30231844	●	30232806	●	30232841	●
13,00-13,49	TTS12-S	14	175	126	108	45	TTS100-12-DR8-1300-14	30231845	●	30232807	●	30232842	●
13,50-13,99	TTS12-S	16	180	129	112	48	TTS100-12-DR8-1350-16	30231846	●	30232808	●	30232843	●
14,00-14,49	TTS12-S	16	185	134	116	48	TTS100-12-DR8-1400-16	30231847	●	30232809	●	30232845	●
14,50-14,99	TTS12-S	16	190	139	120	48	TTS100-12-DR8-1450-16	30231848	●	30232810	●	30232846	●
15,00-15,49	TTS12-S	16	195	144	124	48	TTS100-12-DR8-1500-16	30231849	●	30232811	●	30232847	●
15,50-16,49	TTS12-S	18	205	152	132	48	TTS100-12-DR8-1550-18	30191586	●	30191532	●	30198966	●
16,50-17,49	TTS12-S	18	215	161	140	48	TTS100-12-DR8-1650-18	30191587	●	30191533	●	30198967	●
17,50-18,49	TTS12-S	18	220	171	148	48	TTS100-12-DR8-1750-18	30191588	●	30191534	●	30198968	●
18,50-19,49	TTS12-S	20	235	180	156	50	TTS100-12-DR8-1850-20	30191589	●	30191535	●	30198969	●
19,50-20,49	TTS12-S	20	240	189	164	50	TTS100-12-DR8-1950-20	30191590	●	30191536	●	30198971	●
20,50-21,49	TTS12-S	25	260	198	172	56	TTS100-12-DR8-2050-25	30191591	●	30191537	●	30198972	●
21,50-22,49	TTS12-S	25	270	207	180	56	TTS100-12-DR8-2150-25	30191592	●	30191538	●	30198973	●
22,50-23,49	TTS12-S	25	275	217	188	56	TTS100-12-DR8-2250-25	30191593	●	30191539	●	30198974	●
23,50-24,49	TTS12-S	25	285	226	196	56	TTS100-12-DR8-2350-25	30191594	●	30191540	●	30198975	●
24,50-25,49	TTS18-S	25	295	235	204	56	TTS100-18-DR8-2450-25	30191595	●	30191541	●	30198976	●
25,50-26,49	TTS18-S	25	305	244	212	56	TTS100-18-DR8-2550-25	30191597	●	30191543	●	30198977	●
26,50-27,49	TTS18-S	25	315	253	220	56	TTS100-18-DR8-2650-25	30191598	●	30191544	●	30198978	●
27,50-28,49	TTS18-S	25	325	263	228	56	TTS100-18-DR8-2750-25	30191599	●	30191545	●	30198979	●
28,50-29,49	TTS18-S	32	340	272	236	60	TTS100-18-DR8-2850-32	30191600	●	30191546	●	30198980	●
29,50-30,49	TTS18-S	32	345	281	244	60	TTS100-18-DR8-2950-32	30191601	●	30191547	●	30198981	●
30,50-31,49	TTS18-S	32	355	290	252	60	TTS100-18-DR8-3050-32	30191602	●	30191548	●	30198982	●
31,50-32,00	TTS18-S	32	360	299	260	60	TTS100-18-DR8-3150-32	30191603	●	30191549	●	30198983	●



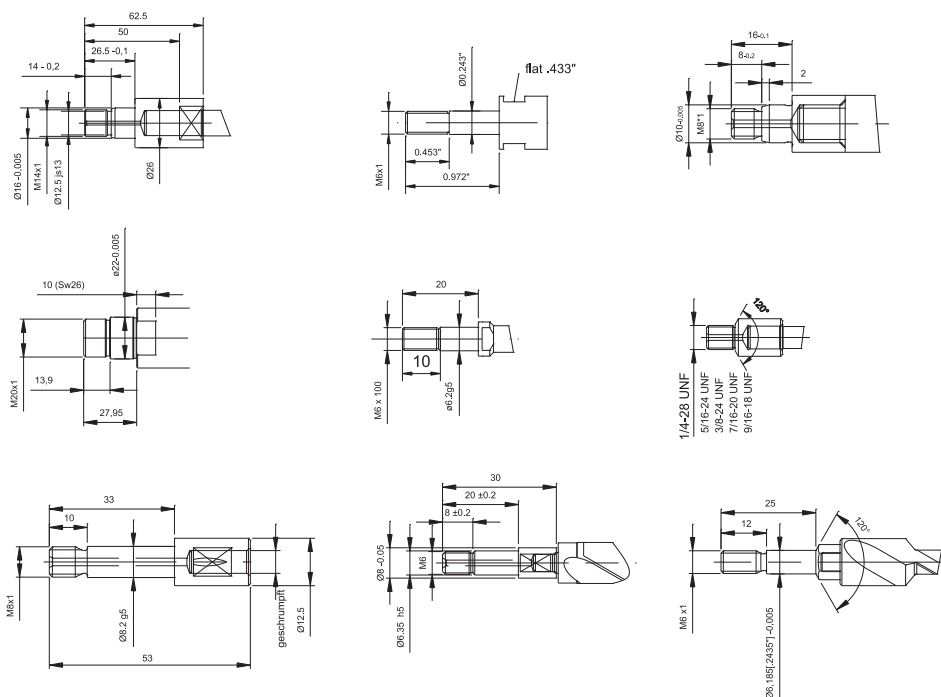
Thread adapters for drill feed units

The spindles on drill feed units are equipped with manufacturer-specific thread connections for a quick, straightforward tool change. The connection between the adapter and cutting tool is brazed or shrunk. Both connections offer advantages, the brazed

variant requires significantly less space while the shrunk version can be re-used. ADD ENGINEERING manufactures all tools with the specific thread adapters required.



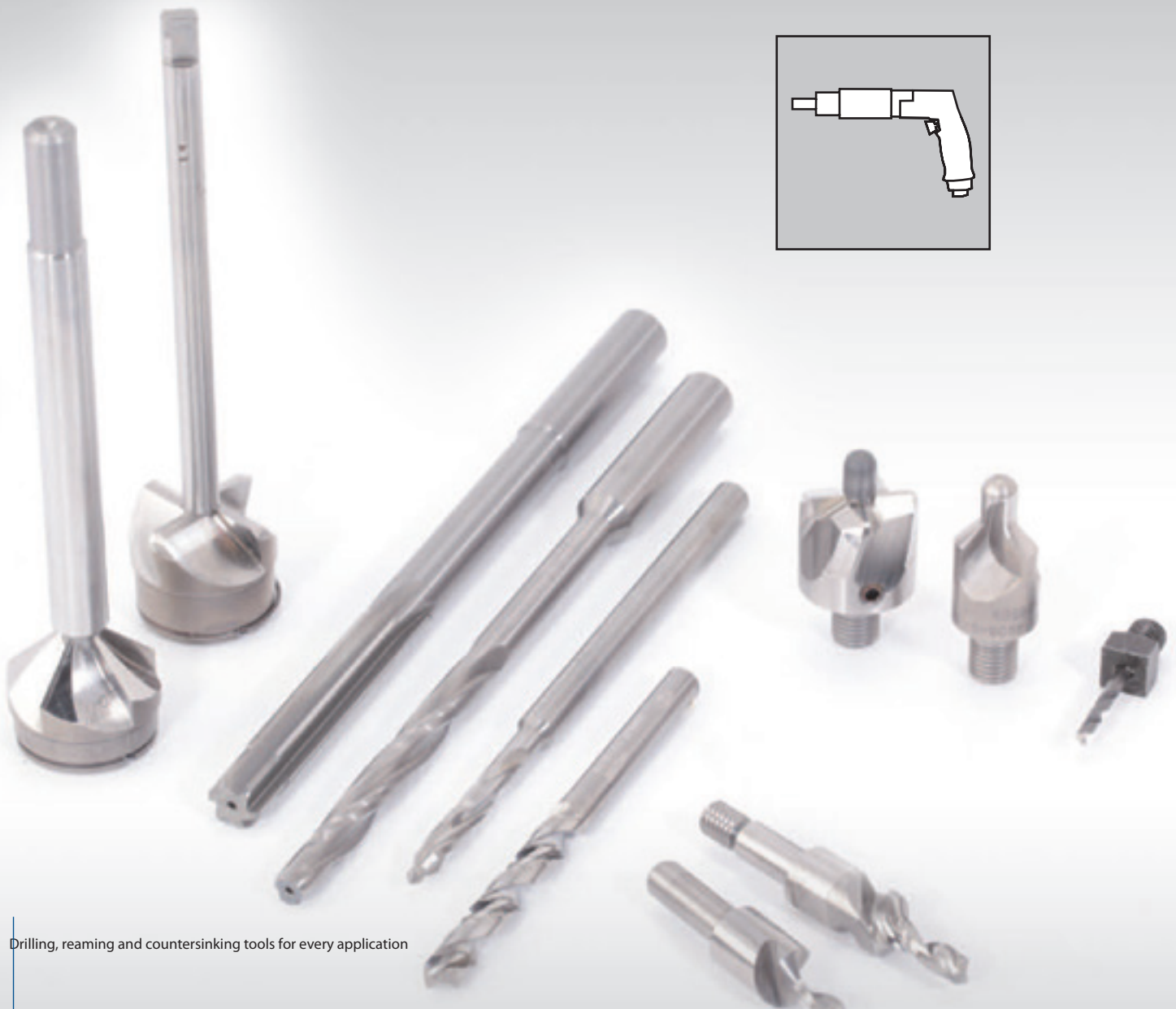
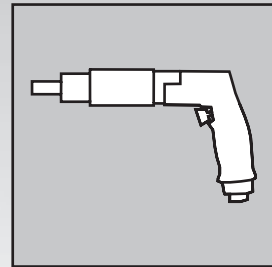
Design samples



Optimised tools for hand-held machines

Hand-held machines for machining modern lightweight materials are mostly used in the aerospace industry. On the so-called final assembly lines (FAL), holes for pins and rivets are machined in the outer skin of fuselage sections, for example. Usage is dependent on the place where the

machining takes place, where for example there is not enough space for a larger drill feed unit. Depending on the bore quality required, ADD ENGINEERING manufactures tools for drilling from the solid, boring and reaming. To minimise cutting forces, the tools are ground sharp and are uncoated.



► Drilling from the solid (first hole)



Drilling from the solid in CFRP, aluminium or titanium with a hand drill.

Also for manually drilling immediately adjacent components of the part. The diameter to be drilled is often dependent on the hole already drilled, which was made in the first component of the multi-layer stack on a machine tool.

► Boring and reaming (final hole)



Boring and reaming of stacks made of CFRP, aluminium or titanium with purely manual feed or for controlled feed using hydraulic brake.

The hand-held boring tool is guided in the pre-drilled hole by a guide pin. The stock removal can be up to 2.5 mm depending on the composition of the stack, for CFRP up to 3 mm. During the reaming of pre-drilled holes the stock removal should not exceed 0.5 mm.

► Countersink



Application of countersinks to holes already drilled.

The depth of the countersink is normally controlled by a chamfering tool. Depending on the material to be machined, e.g. CFRP, aluminium or titanium, ADD ENGINEERING manufactures various tool designs.

► Spot facer



Production of spot faces on holes already drilled.

The depth of the countersink is normally controlled by a chamfering tool. The material to be machined (CFRP, aluminium, titanium) defines the design of the tool.

► Back face sink



Back face sinkers with drawbars are used if the surface to be machined cannot be reached from the machining side. The drawbar is connected to the back face sink through the bore. The countersink is produced by applying tensile force from the opposite side. The material to be machined (CFRP, aluminium, titanium) defines the design of the tool.

► Countersink drill



For drilling holes with a countersink. The tools are also suitable for drilling using drill feed units.

Depending on the material to be machined, ADD ENGINEERING manufactures the tools from HSS for aluminium and from solid carbide for CFRP/titanium. The length of the cylindrical section at the front part of the bore is dependent on the total part thickness.

Hand drills



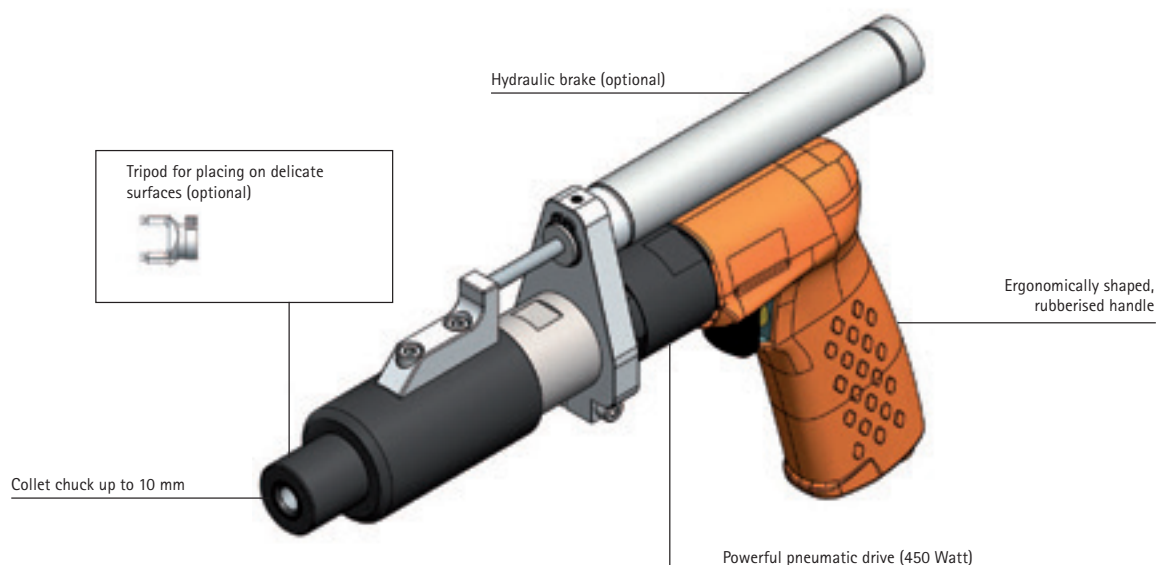
The hand drills have been specially designed for the machining of modern materials. Due to the low weight of approx. 1 kg and the ergonomically shaped, rubberised handle, hand drills have excellent handling properties.

The machines are equipped with a collet chuck up to $\varnothing$ 10 mm. The 450 Watt pneumatic drives are specially designed for machining CFRP, aluminium and titanium. To

obtain the best machining results, the drills are available with different spindle speeds as a function of the material to be machined and the bore diameter.

Optionally these machines can be equipped with a hydraulic brake for controlled feed, as well as a tripod for drilling bores perpendicular to the surface.

Performance features overview



Hand drills for stack drilling

pneumatically powered, without coolant supply

Manual feed



With integrated hydraulic brake for controlled feed



Manual feed

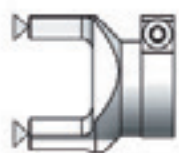
Selection aid (stack drilling)	Spindle speed 1/min	Watt	Air pressure bar	Air connection	max. stroke mm	Tool length mm	Tool adapter	Order number
CFRP/Titanium	500	450	6,3	1/4"	-	150	Collet	30379206
CFRP/Alu and CFRP/CFRP	3.200	450	6,3	1/4"	-	150	Collet	30379205
CFRP/Alu and CFRP/CFRP	5.200	450	6,3	1/4"	-	150	Collet	30379203

With integrated hydraulic brake for controlled feed

Selection aid (stack drilling)	Spindle speed 1/min	Watt	Air pressure bar	Air connection	max. stroke mm	Tool length mm	Tool adapter	Order number
CFRP/Titanium	500	450	6,3	1/4"	25	120	Collet	30372743
CFRP/Alu and CFRP/CFRP	3.200	450	6,3	1/4"	25	120	Collet	30372746
CFRP/Alu and CFRP/CFRP	5.200	450	6,3	1/4"	25	120	Collet	30372745

Accessories

Tripod stop holder



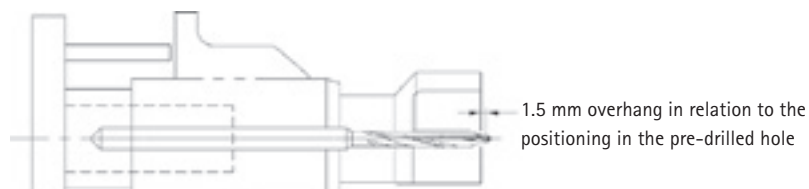
Stop holder / tripod location bore	Order number
ø 40	30372762

Collet

Collet ø (mm)	Order number
5	30372754
6	30372755
7	30372757
8	30372758
10	30372759

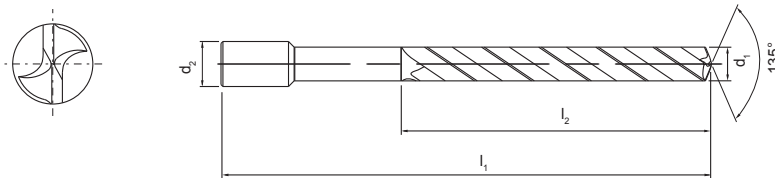
Installation instructions

for tool with integrated hydraulic brake and tripod approx



MEGA-Stack-Drill-Hand-CTA

Solid carbide twist drill, short design
SCD47 (5xD)



Design:
 Drill diameter: 3,00 – 12,00 mm
 Bore tolerance: IT 8
 Shank form: HA
 Coating: uncoated
 Number of blades: 2
 Tip angle: 90°
 Helix angle: 30°

Application: Drill for multi-layer out of CFRP and aluminium or CFRP and titanium

Dimensions					Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z			
2,00	3,00	101,6	50,8	2	SCD470-0200-2-2-135HA05-HU610	30620994	○
2,10	3,00	101,6	50,8	2	SCD470-0210-2-2-135HA05-HU610	30620995	○
2,20	3,00	101,6	50,8	2	SCD470-0220-2-2-135HA05-HU610	30620996	○
2,30	3,00	101,6	50,8	2	SCD470-0230-2-2-135HA05-HU610	30620997	○
2,40	3,00	101,6	50,8	2	SCD470-0240-2-2-135HA05-HU610	30620998	○
2,50	3,00	101,6	50,8	2	SCD470-0250-2-2-135HA05-HU610	30620999	○
2,60	3,00	101,6	50,8	2	SCD470-0260-2-2-135HA05-HU610	30621000	○
2,70	3,00	101,6	50,8	2	SCD470-0270-2-2-135HA05-HU610	30621001	○
2,80	3,00	101,6	50,8	2	SCD470-0280-2-2-135HA05-HU610	30621002	○
2,90	3,00	101,6	50,8	2	SCD470-0290-2-2-135HA05-HU610	30621003	○
3,00	6,00	101,6	50,8	2	SCD470-0300-2-2-135HA05-HU610	30621004	○
3,10	6,00	101,6	50,8	2	SCD470-0310-2-2-135HA05-HU610	30621005	○
3,20	6,00	101,6	50,8	2	SCD470-0320-2-2-135HA05-HU610	30621006	○
3,30	6,00	101,6	50,8	2	SCD470-0330-2-2-135HA05-HU610	30621007	○
3,40	6,00	101,6	50,8	2	SCD470-0340-2-2-135HA05-HU610	30621008	○
3,50	6,00	101,6	50,8	2	SCD470-0350-2-2-135HA05-HU610	30621009	○
3,60	6,00	101,6	50,8	2	SCD470-0360-2-2-135HA05-HU610	30621010	○
3,70	6,00	101,6	50,8	2	SCD470-0370-2-2-135HA05-HU610	30621011	○
3,80	6,00	101,6	50,8	2	SCD470-0380-2-2-135HA05-HU610	30621012	○
3,90	6,00	101,6	50,8	2	SCD470-0390-2-2-135HA05-HU610	30621013	○
4,00	6,00	101,6	50,8	2	SCD470-0400-2-2-135HA05-HU610	30621014	○
4,08	6,00	101,6	50,8	2	SCD470-0408-2-2-135HA05-HU610	30621015	○
4,10	6,00	101,6	50,8	2	SCD470-0410-2-2-135HA05-HU610	30621016	○
4,14	6,00	101,6	50,8	2	SCD470-0414-2-2-135HA05-HU610	30621017	○
4,17	6,00	101,6	50,8	2	SCD470-0417-2-2-135HA05-HU610	30621018	○
4,18	6,00	101,6	50,8	2	SCD470-0418-2-2-135HA05-HU610	30621019	○
4,19	6,00	101,6	50,8	2	SCD470-0419-2-2-135HA05-HU610	30621020	○
4,20	6,00	101,6	50,8	2	SCD470-0420-2-2-135HA05-HU610	30621021	○
4,30	6,00	101,6	50,8	2	SCD470-0430-2-2-135HA05-HU610	30621022	○
4,40	6,00	101,6	50,8	2	SCD470-0440-2-2-135HA05-HU610	30621023	○
4,50	6,00	101,6	50,8	2	SCD470-0450-2-2-135HA05-HU610	30621024	○
4,60	6,00	101,6	50,8	2	SCD470-0460-2-2-135HA05-HU610	30621025	○

MEGA-Stack-Drill-Hand-CTA

Solid carbide twist drill, short design
SCD47 (5xD)

ø 4,70 - 6,60

Dimensions					Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z			
4,70	6,00	101,6	50,8	2	SCD470-0470-2-2-135HA05-HU610	30621026	○
4,73	6,00	101,6	50,8	2	SCD470-0473-2-2-135HA05-HU610	30621027	○
4,75	6,00	101,6	50,8	2	SCD470-0475-2-2-135HA05-HU610	30621028	○
4,80	6,00	101,6	50,8	2	SCD470-0480-2-2-135HA05-HU610	30621029	○
4,82	6,00	101,6	50,8	2	SCD470-0482-2-2-135HA05-HU610	30621030	○
4,83	6,00	101,6	50,8	2	SCD470-0483-2-2-135HA05-HU610	30621031	○
4,84	6,00	101,6	50,8	2	SCD470-0484-2-2-135HA05-HU610	30621032	○
4,90	6,00	101,6	50,8	2	SCD470-0490-2-2-135HA05-HU610	30621033	○
5,00	6,00	101,6	50,8	2	SCD470-0500-2-2-135HA05-HU610	30621034	○
5,10	6,00	101,6	50,8	2	SCD470-0510-2-2-135HA05-HU610	30621035	○
5,14	6,00	101,6	50,8	2	SCD470-0514-2-2-135HA05-HU610	30621036	○
5,20	6,00	101,6	50,8	2	SCD470-0520-2-2-135HA05-HU610	30621037	○
5,30	6,00	101,6	50,8	2	SCD470-0530-2-2-135HA05-HU610	30621038	○
5,40	6,00	101,6	50,8	2	SCD470-0540-2-2-135HA05-HU610	30621039	○
5,46	6,00	101,6	50,8	2	SCD470-0546-2-2-135HA05-HU610	30621040	○
5,48	6,00	101,6	50,8	2	SCD470-0548-2-2-135HA05-HU610	30621041	○
5,50	6,00	101,6	50,8	2	SCD470-0550-2-2-135HA05-HU610	30621042	○
5,53	6,00	101,6	50,8	2	SCD470-0553-2-2-135HA05-HU610	30621043	○
5,55	6,00	101,6	50,8	2	SCD470-0555-2-2-135HA05-HU610	30621044	○
5,56	6,00	101,6	50,8	2	SCD470-0556-2-2-135HA05-HU610	30621045	○
5,57	6,00	101,6	50,8	2	SCD470-0557-2-2-135HA05-HU610	30621046	○
5,60	6,00	101,6	50,8	2	SCD470-0560-2-2-135HA05-HU610	30621047	○
5,70	6,00	101,6	50,8	2	SCD470-0570-2-2-135HA05-HU610	30621048	○
5,80	6,00	101,6	50,8	2	SCD470-0580-2-2-135HA05-HU610	30621049	○
5,90	6,00	101,6	50,8	2	SCD470-0590-2-2-135HA05-HU610	30621050	○
6,00	6,00	101,6	50,8	2	SCD470-0600-2-2-135HA05-HU610	30621051	○
6,10	8,00	101,6	50,8	2	SCD470-0610-2-2-135HA05-HU610	30621052	○
6,20	8,00	101,6	50,8	2	SCD470-0620-2-2-135HA05-HU610	30621053	○
6,24	8,00	101,6	50,8	2	SCD470-0624-2-2-135HA05-HU610	30621054	○
6,27	8,00	101,6	50,8	2	SCD470-0627-2-2-135HA05-HU610	30621055	○
6,30	8,00	101,6	50,8	2	SCD470-0630-2-2-135HA05-HU610	30621056	○
6,33	8,00	101,6	50,8	2	SCD470-0633-2-2-135HA05-HU610	30621057	○
6,34	8,00	101,6	50,8	2	SCD470-0634-2-2-135HA05-HU610	30621058	○
6,35	8,00	101,6	50,8	2	SCD470-0635-2-2-135HA05-HU610	30621059	○
6,36	8,00	101,6	50,8	2	SCD470-0636-2-2-135HA05-HU610	30621060	○
6,37	8,00	101,6	50,8	2	SCD470-0637-2-2-135HA05-HU610	30621061	○
6,38	8,00	101,6	50,8	2	SCD470-0638-2-2-135HA05-HU610	30621062	○
6,40	8,00	101,6	50,8	2	SCD470-0640-2-2-135HA05-HU610	30621063	○
6,50	8,00	101,6	50,8	2	SCD470-0650-2-2-135HA05-HU610	30621064	○
6,60	8,00	101,6	50,8	2	SCD470-0660-2-2-135HA05-HU610	30621065	○

MEGA-Stack-Drill-Hand-CTA

Solid carbide twist drill, short design
SCD47 (5xD)

ø 6,67 - 9,51

Dimensions					Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z			
6,67	8,00	101,6	50,8	2	SCD470-0667-2-2-135HA05-HU610	30621066	○
6,70	8,00	101,6	50,8	2	SCD470-0670-2-2-135HA05-HU610	30621067	○
6,80	8,00	101,6	50,8	2	SCD470-0680-2-2-135HA05-HU610	30621068	○
6,90	8,00	101,6	50,8	2	SCD470-0690-2-2-135HA05-HU610	30621069	○
7,00	8,00	101,6	50,8	2	SCD470-0700-2-2-135HA05-HU610	30621070	○
7,10	8,00	101,6	50,8	2	SCD470-0710-2-2-135HA05-HU610	30621071	○
7,20	8,00	101,6	50,8	2	SCD470-0720-2-2-135HA05-HU610	30621072	○
7,30	8,00	101,6	50,8	2	SCD470-0730-2-2-135HA05-HU610	30621073	○
7,40	8,00	101,6	50,8	2	SCD470-0740-2-2-135HA05-HU610	30621074	○
7,50	8,00	101,6	50,8	2	SCD470-0750-2-2-135HA05-HU610	30621075	○
7,60	8,00	101,6	50,8	2	SCD470-0760-2-2-135HA05-HU610	30621076	○
7,70	8,00	101,6	50,8	2	SCD470-0770-2-2-135HA05-HU610	30621077	○
7,80	8,00	101,6	50,8	2	SCD470-0780-2-2-135HA05-HU610	30621078	○
7,82	8,00	101,6	50,8	2	SCD470-0782-2-2-135HA05-HU610	30621079	○
7,90	8,00	101,6	50,8	2	SCD470-0790-2-2-135HA05-HU610	30621080	○
7,92	8,00	101,6	50,8	2	SCD470-0792-2-2-135HA05-HU610	30621081	○
7,93	8,00	101,6	50,8	2	SCD470-0793-2-2-135HA05-HU610	30621082	○
7,94	8,00	101,6	50,8	2	SCD470-0794-2-2-135HA05-HU610	30621083	○
7,95	8,00	101,6	50,8	2	SCD470-0795-2-2-135HA05-HU610	30621084	○
7,96	8,00	101,6	50,8	2	SCD470-0796-2-2-135HA05-HU610	30621085	○
7,97	8,00	101,6	50,8	2	SCD470-0797-2-2-135HA05-HU610	30621086	○
8,00	8,00	101,6	50,8	2	SCD470-0800-2-2-135HA05-HU610	30621087	○
8,10	10,00	101,6	50,8	2	SCD470-0810-2-2-135HA05-HU610	30621088	○
8,20	10,00	101,6	50,8	2	SCD470-0820-2-2-135HA05-HU610	30621089	○
8,26	10,00	101,6	50,8	2	SCD470-0826-2-2-135HA05-HU610	30621090	○
8,30	10,00	101,6	50,8	2	SCD470-0830-2-2-135HA05-HU610	30621091	○
8,40	10,00	101,6	50,8	2	SCD470-0840-2-2-135HA05-HU610	30621092	○
8,50	10,00	101,6	50,8	2	SCD470-0850-2-2-135HA05-HU610	30621093	○
8,60	10,00	101,6	50,8	2	SCD470-0860-2-2-135HA05-HU610	30621094	○
8,70	10,00	101,6	50,8	2	SCD470-0870-2-2-135HA05-HU610	30621095	○
8,80	10,00	101,6	50,8	2	SCD470-0880-2-2-135HA05-HU610	30621096	○
8,90	10,00	101,6	50,8	2	SCD470-0890-2-2-135HA05-HU610	30621097	○
9,00	10,00	101,6	50,8	2	SCD470-0900-2-2-135HA05-HU610	30621098	○
9,10	10,00	101,6	50,8	2	SCD470-0910-2-2-135HA05-HU610	30621099	○
9,20	10,00	101,6	50,8	2	SCD470-0920-2-2-135HA05-HU610	30621100	○
9,30	10,00	101,6	50,8	2	SCD470-0930-2-2-135HA05-HU610	30621101	○
9,40	10,00	101,6	50,8	2	SCD470-0940-2-2-135HA05-HU610	30621102	○
9,44	10,00	101,6	50,8	2	SCD470-0944-2-2-135HA05-HU610	30621103	○
9,50	10,00	101,6	50,8	2	SCD470-0950-2-2-135HA05-HU610	30621104	○
9,51	10,00	101,6	50,8	2	SCD470-0951-2-2-135HA05-HU610	30621105	○

MEGA-Stack-Drill-Hand-CTA

Solid carbide twist drill, short design

SCD47 (5xD)

ø 9,52 - 12,30

Dimensions					Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z			
9,52	10,00	101,6	50,8	2	SCD470-0952-2-2-135HA05-HU610	30621106	○
9,53	10,00	101,6	50,8	2	SCD470-0953-2-2-135HA05-HU610	30621107	○
9,54	10,00	101,6	50,8	2	SCD470-0954-2-2-135HA05-HU610	30621108	○
9,55	10,00	101,6	50,8	2	SCD470-0955-2-2-135HA05-HU610	30621109	○
9,60	10,00	101,6	50,8	2	SCD470-0960-2-2-135HA05-HU610	30621110	○
9,70	10,00	101,6	50,8	2	SCD470-0970-2-2-135HA05-HU610	30621111	○
9,80	10,00	101,6	50,8	2	SCD470-0980-2-2-135HA05-HU610	30621112	○
9,84	10,00	101,6	50,8	2	SCD470-0984-2-2-135HA05-HU610	30621113	○
9,90	10,00	101,6	50,8	2	SCD470-0990-2-2-135HA05-HU610	30621114	○
10,00	10,00	101,6	50,8	2	SCD470-1000-2-2-135HA05-HU610	30621115	○
10,10	12,00	101,6	50,8	2	SCD470-1010-2-2-135HA05-HU610	30621116	○
10,20	12,00	101,6	50,8	2	SCD470-1020-2-2-135HA05-HU610	30621117	○
10,30	12,00	101,6	50,8	2	SCD470-1030-2-2-135HA05-HU610	30621118	○
10,40	12,00	101,6	50,8	2	SCD470-1040-2-2-135HA05-HU610	30621119	○
10,50	12,00	101,6	50,8	2	SCD470-1050-2-2-135HA05-HU610	30621120	○
10,60	12,00	101,6	50,8	2	SCD470-1060-2-2-135HA05-HU610	30621121	○
10,70	12,00	101,6	50,8	2	SCD470-1070-2-2-135HA05-HU610	30621122	○
10,80	12,00	101,6	50,8	2	SCD470-1080-2-2-135HA05-HU610	30621123	○
10,90	12,00	101,6	50,8	2	SCD470-1090-2-2-135HA05-HU610	30621124	○
10,98	12,00	101,6	50,8	2	SCD470-1098-2-2-135HA05-HU610	30621125	○
11,00	12,00	101,6	50,8	2	SCD470-1100-2-2-135HA05-HU610	30621126	○
11,03	12,00	101,6	50,8	2	SCD470-1103-2-2-135HA05-HU610	30621127	○
11,10	12,00	101,6	50,8	2	SCD470-1110-2-2-135HA05-HU610	30621128	○
11,11	12,00	101,6	50,8	2	SCD470-1111-2-2-135HA05-HU610	30621129	○
11,12	12,00	101,6	50,8	2	SCD470-1112-2-2-135HA05-HU610	30621130	○
11,13	12,00	101,6	50,8	2	SCD470-1113-2-2-135HA05-HU610	30621131	○
11,14	12,00	101,6	50,8	2	SCD470-1114-2-2-135HA05-HU610	30621132	○
11,20	12,00	101,6	50,8	2	SCD470-1135-2-2-135HA05-HU610	30621133	○
11,30	12,00	101,6	50,8	2	SCD470-1130-2-2-135HA05-HU610	30621134	○
11,40	12,00	101,6	50,8	2	SCD470-1140-2-2-135HA05-HU610	30621135	○
11,43	12,00	101,6	50,8	2	SCD470-1143-2-2-135HA05-HU610	30621136	○
11,50	12,00	101,6	50,8	2	SCD470-1150-2-2-135HA05-HU610	30621137	○
11,60	12,00	101,6	50,8	2	SCD470-1160-2-2-135HA05-HU610	30621138	○
11,70	12,00	101,6	50,8	2	SCD470-1170-2-2-135HA05-HU610	30621139	○
11,80	12,00	101,6	50,8	2	SCD470-1180-2-2-135HA05-HU610	30621140	○
11,90	12,00	101,6	50,8	2	SCD470-1190-2-2-135HA05-HU610	30621141	○
12,00	12,00	101,6	50,8	2	SCD470-1350-2-2-135HA05-HU610	30621142	○
12,10	14,00	101,6	50,8	2	SCD470-1210-2-2-135HA05-HU610	30621143	○
12,20	14,00	101,6	50,8	2	SCD470-1220-2-2-135HA05-HU610	30621144	○
12,30	14,00	101,6	50,8	2	SCD470-1230-2-2-135HA05-HU610	30621145	○

MEGA-Stack-Drill-Hand-CTA

Solid carbide twist drill, short design

SCD47 (5xD)

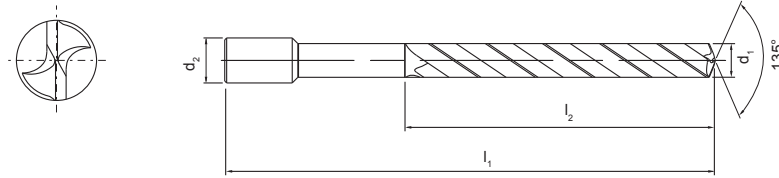
ø 12,40 - 13,02

Dimensions					Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z			
12,40	14,00	101,6	50,8	2	SCD470-1240-2-2-135HA05-HU610	30621146	○
12,50	14,00	101,6	50,8	2	SCD470-1250-2-2-135HA05-HU610	30621147	○
12,56	14,00	101,6	50,8	2	SCD470-1256-2-2-135HA05-HU610	30621148	○
12,60	14,00	101,6	50,8	2	SCD470-1260-2-2-135HA05-HU610	30621149	○
12,61	14,00	101,6	50,8	2	SCD470-1261-2-2-135HA05-HU610	30621150	○
12,69	14,00	101,6	50,8	2	SCD470-1269-2-2-135HA05-HU610	30621151	○
12,70	14,00	101,6	50,8	2	SCD470-1270-2-2-135HA05-HU610	30621152	○
12,71	14,00	101,6	50,8	2	SCD470-1271-2-2-135HA05-HU610	30621153	○
12,72	14,00	101,6	50,8	2	SCD470-1272-2-2-135HA05-HU610	30621154	○
12,73	14,00	101,6	50,8	2	SCD470-1273-2-2-135HA05-HU610	30621155	○
12,80	14,00	101,6	50,8	2	SCD470-1280-2-2-135HA05-HU610	30621156	○
12,90	14,00	101,6	50,8	2	SCD470-1290-2-2-135HA05-HU610	30621157	○
13,00	14,00	101,6	50,8	2	SCD470-1300-2-2-135HA05-HU610	30621158	○
13,02	14,00	101,6	50,8	2	SCD470-1302-2-2-135HA05-HU610	30621159	○

MEGA-Stack-Drill-Hand-CTA

Solid carbide twist drill, long design

SCD48 (5xD)



Design:	
Drill diameter:	2,00 – 13,02 mm
Bore tolerance:	IT 8
Shank form:	HA
Coating:	uncoated
Number of blades:	2
Guide chamfer:	2
Tip angle:	120°
Helix angle:	15°

Application: Drill for multi-layer out of CFRP and aluminium or CFRP and titanium

Dimensions					Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z			
2,00	3,00	152,4	50,8	2	SCD480-0200-2-2-135HA05-HU610	30621168	○
2,10	3,00	152,4	50,8	2	SCD480-0210-2-2-135HA05-HU610	30621169	○
2,20	3,00	152,4	50,8	2	SCD480-0220-2-2-135HA05-HU610	30621170	○
2,30	3,00	152,4	50,8	2	SCD480-0230-2-2-135HA05-HU610	30621171	○
2,40	3,00	152,4	50,8	2	SCD480-0240-2-2-135HA05-HU610	30621172	○
2,50	3,00	152,4	50,8	2	SCD480-0250-2-2-135HA05-HU610	30621173	○
2,60	3,00	152,4	50,8	2	SCD480-0260-2-2-135HA05-HU610	30621174	○
2,70	3,00	152,4	50,8	2	SCD480-0270-2-2-135HA05-HU610	30621175	○
2,80	3,00	152,4	50,8	2	SCD480-0280-2-2-135HA05-HU610	30621176	○
2,90	3,00	152,4	50,8	2	SCD480-0290-2-2-135HA05-HU610	30621177	○
3,00	6,00	152,4	50,8	2	SCD480-0300-2-2-135HA05-HU610	30621178	○
3,10	6,00	152,4	50,8	2	SCD480-0310-2-2-135HA05-HU610	30621179	○
3,20	6,00	152,4	50,8	2	SCD480-0320-2-2-135HA05-HU610	30621180	○
3,30	6,00	152,4	50,8	2	SCD480-0330-2-2-135HA05-HU610	30621181	○
3,40	6,00	152,4	50,8	2	SCD480-0340-2-2-135HA05-HU610	30621182	○
3,50	6,00	152,4	50,8	2	SCD480-0350-2-2-135HA05-HU610	30621183	○
3,60	6,00	152,4	50,8	2	SCD480-0360-2-2-135HA05-HU610	30621184	○
3,70	6,00	152,4	50,8	2	SCD480-0370-2-2-135HA05-HU610	30621185	○
3,80	6,00	152,4	50,8	2	SCD480-0380-2-2-135HA05-HU610	30621186	○
3,90	6,00	152,4	50,8	2	SCD480-0390-2-2-135HA05-HU610	30621187	○
4,00	6,00	152,4	50,8	2	SCD480-0400-2-2-135HA05-HU610	30621188	○
4,08	6,00	152,4	50,8	2	SCD480-0408-2-2-135HA05-HU610	30621189	○
4,10	6,00	152,4	50,8	2	SCD480-0410-2-2-135HA05-HU610	30621190	○
4,14	6,00	152,4	50,8	2	SCD480-0414-2-2-135HA05-HU610	30621191	○
4,17	6,00	152,4	50,8	2	SCD480-0417-2-2-135HA05-HU610	30621192	○
4,18	6,00	152,4	50,8	2	SCD480-0418-2-2-135HA05-HU610	30621193	○
4,19	6,00	152,4	50,8	2	SCD480-0419-2-2-135HA05-HU610	30621194	○
4,20	6,00	152,4	50,8	2	SCD480-0420-2-2-135HA05-HU610	30621195	○
4,30	6,00	152,4	50,8	2	SCD480-0430-2-2-135HA05-HU610	30621196	○
4,40	6,00	152,4	50,8	2	SCD480-0440-2-2-135HA05-HU610	30621197	○
4,50	6,00	152,4	50,8	2	SCD480-0450-2-2-135HA05-HU610	30621198	○
4,60	6,00	152,4	50,8	2	SCD480-0460-2-2-135HA05-HU610	30621199	○

MEGA-Stack-Drill-Hand-CTA

Solid carbide twist drill, long design

SCD48 (5xD)

ø 4,70 - 6,60

Dimensions					Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z			
4,70	6,00	152,4	50,8	2	SCD480-0470-2-2-135HA05-HU610	30621200	○
4,73	6,00	152,4	50,8	2	SCD480-0473-2-2-135HA05-HU610	30621201	○
4,75	6,00	152,4	50,8	2	SCD480-0475-2-2-135HA05-HU610	30621202	○
4,80	6,00	152,4	50,8	2	SCD480-0480-2-2-135HA05-HU610	30621203	○
4,82	6,00	152,4	50,8	2	SCD480-0482-2-2-135HA05-HU610	30621204	○
4,83	6,00	152,4	50,8	2	SCD480-0483-2-2-135HA05-HU610	30621205	○
4,84	6,00	152,4	50,8	2	SCD480-0484-2-2-135HA05-HU610	30621206	○
4,90	6,00	152,4	50,8	2	SCD480-0490-2-2-135HA05-HU610	30621207	○
5,00	6,00	152,4	50,8	2	SCD480-0500-2-2-135HA05-HU610	30621208	○
5,10	6,00	152,4	50,8	2	SCD480-0510-2-2-135HA05-HU610	30621209	○
5,14	6,00	152,4	50,8	2	SCD480-0514-2-2-135HA05-HU610	30621210	○
5,20	6,00	152,4	50,8	2	SCD480-0520-2-2-135HA05-HU610	30621211	○
5,30	6,00	152,4	50,8	2	SCD480-0530-2-2-135HA05-HU610	30621212	○
5,40	6,00	152,4	50,8	2	SCD480-0540-2-2-135HA05-HU610	30621213	○
5,46	6,00	152,4	50,8	2	SCD480-0546-2-2-135HA05-HU610	30621214	○
5,48	6,00	152,4	50,8	2	SCD480-0548-2-2-135HA05-HU610	30621215	○
5,50	6,00	152,4	50,8	2	SCD480-0550-2-2-135HA05-HU610	30621216	○
5,53	6,00	152,4	50,8	2	SCD480-0553-2-2-135HA05-HU610	30621217	○
5,55	6,00	152,4	50,8	2	SCD480-0555-2-2-135HA05-HU610	30621218	○
5,56	6,00	152,4	50,8	2	SCD480-0556-2-2-135HA05-HU610	30621219	○
5,57	6,00	152,4	50,8	2	SCD480-0557-2-2-135HA05-HU610	30621220	○
5,60	6,00	152,4	50,8	2	SCD480-0560-2-2-135HA05-HU610	30621221	○
5,70	6,00	152,4	50,8	2	SCD480-0570-2-2-135HA05-HU610	30621222	○
5,80	6,00	152,4	50,8	2	SCD480-0580-2-2-135HA05-HU610	30621223	○
5,90	6,00	152,4	50,8	2	SCD480-0590-2-2-135HA05-HU610	30621224	○
6,00	6,00	152,4	50,8	2	SCD480-0600-2-2-135HA05-HU610	30621225	○
6,10	8,00	152,4	50,8	2	SCD480-0610-2-2-135HA05-HU610	30621226	○
6,20	8,00	152,4	50,8	2	SCD480-0620-2-2-135HA05-HU610	30621227	○
6,24	8,00	152,4	50,8	2	SCD480-0624-2-2-135HA05-HU610	30621228	○
6,27	8,00	152,4	50,8	2	SCD480-0627-2-2-135HA05-HU610	30621229	○
6,30	8,00	152,4	50,8	2	SCD480-0630-2-2-135HA05-HU610	30621230	○
6,33	8,00	152,4	50,8	2	SCD480-0633-2-2-135HA05-HU610	30621231	○
6,34	8,00	152,4	50,8	2	SCD480-0634-2-2-135HA05-HU610	30621232	○
6,35	8,00	152,4	50,8	2	SCD480-0635-2-2-135HA05-HU610	30621233	○
6,36	8,00	152,4	50,8	2	SCD480-0636-2-2-135HA05-HU610	30621234	○
6,37	8,00	152,4	50,8	2	SCD480-0637-2-2-135HA05-HU610	30621235	○
6,38	8,00	152,4	50,8	2	SCD480-0638-2-2-135HA05-HU610	30621236	○
6,40	8,00	152,4	50,8	2	SCD480-0640-2-2-135HA05-HU610	30621237	○
6,50	8,00	152,4	50,8	2	SCD480-0650-2-2-135HA05-HU610	30621238	○
6,60	8,00	152,4	50,8	2	SCD480-0660-2-2-135HA05-HU610	30621239	○

MEGA-Stack-Drill-Hand-CTA

Solid carbide twist drill, long design

SCD48 (5xD)

ø 6,67 - 9,51

Dimensions					Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z			
6,67	8,00	152,4	50,8	2	SCD480-0667-2-2-135HA05-HU610	30621240	○
6,70	8,00	152,4	50,8	2	SCD480-0670-2-2-135HA05-HU610	30621241	○
6,80	8,00	152,4	50,8	2	SCD480-0680-2-2-135HA05-HU610	30621242	○
6,90	8,00	152,4	50,8	2	SCD480-0690-2-2-135HA05-HU610	30621243	○
7,00	8,00	152,4	50,8	2	SCD480-0700-2-2-135HA05-HU610	30621244	○
7,10	8,00	152,4	50,8	2	SCD480-0710-2-2-135HA05-HU610	30621245	○
7,20	8,00	152,4	50,8	2	SCD480-0720-2-2-135HA05-HU610	30621246	○
7,30	8,00	152,4	50,8	2	SCD480-0730-2-2-135HA05-HU610	30621247	○
7,40	8,00	152,4	50,8	2	SCD480-0740-2-2-135HA05-HU610	30621248	○
7,50	8,00	152,4	50,8	2	SCD480-0750-2-2-135HA05-HU610	30621249	○
7,60	8,00	152,4	50,8	2	SCD480-0760-2-2-135HA05-HU610	30621250	○
7,70	8,00	152,4	50,8	2	SCD480-0770-2-2-135HA05-HU610	30621251	○
7,80	8,00	152,4	50,8	2	SCD480-0780-2-2-135HA05-HU610	30621252	○
7,82	8,00	152,4	50,8	2	SCD480-0782-2-2-135HA05-HU610	30621253	○
7,90	8,00	152,4	50,8	2	SCD480-0790-2-2-135HA05-HU610	30621254	○
7,92	8,00	152,4	50,8	2	SCD480-0792-2-2-135HA05-HU610	30621255	○
7,93	8,00	152,4	50,8	2	SCD480-0793-2-2-135HA05-HU610	30621256	○
7,94	8,00	152,4	50,8	2	SCD480-0794-2-2-135HA05-HU610	30621257	○
7,95	8,00	152,4	50,8	2	SCD480-0795-2-2-135HA05-HU610	30621258	○
7,96	8,00	152,4	50,8	2	SCD480-0796-2-2-135HA05-HU610	30621259	○
7,97	8,00	152,4	50,8	2	SCD480-0797-2-2-135HA05-HU610	30621260	○
8,00	8,00	152,4	50,8	2	SCD480-0800-2-2-135HA05-HU610	30621261	○
8,10	10,00	152,4	50,8	2	SCD480-0810-2-2-135HA05-HU610	30621262	○
8,20	10,00	152,4	50,8	2	SCD480-0820-2-2-135HA05-HU610	30621263	○
8,26	10,00	152,4	50,8	2	SCD480-0826-2-2-135HA05-HU610	30621264	○
8,30	10,00	152,4	50,8	2	SCD480-0830-2-2-135HA05-HU610	30621265	○
8,40	10,00	152,4	50,8	2	SCD480-0840-2-2-135HA05-HU610	30621266	○
8,50	10,00	152,4	50,8	2	SCD480-0850-2-2-135HA05-HU610	30621267	○
8,60	10,00	152,4	50,8	2	SCD480-0860-2-2-135HA05-HU610	30621268	○
8,70	10,00	152,4	50,8	2	SCD480-0870-2-2-135HA05-HU610	30621269	○
8,80	10,00	152,4	50,8	2	SCD480-0880-2-2-135HA05-HU610	30621270	○
8,90	10,00	152,4	50,8	2	SCD480-0890-2-2-135HA05-HU610	30621271	○
9,00	10,00	152,4	50,8	2	SCD480-0900-2-2-135HA05-HU610	30621272	○
9,10	10,00	152,4	50,8	2	SCD480-0910-2-2-135HA05-HU610	30621273	○
9,20	10,00	152,4	50,8	2	SCD480-0920-2-2-135HA05-HU610	30621274	○
9,30	10,00	152,4	50,8	2	SCD480-0930-2-2-135HA05-HU610	30621275	○
9,40	10,00	152,4	50,8	2	SCD480-0940-2-2-135HA05-HU610	30621276	○
9,44	10,00	152,4	50,8	2	SCD480-0944-2-2-135HA05-HU610	30621277	○
9,50	10,00	152,4	50,8	2	SCD480-0950-2-2-135HA05-HU610	30621278	○
9,51	10,00	152,4	50,8	2	SCD480-0951-2-2-135HA05-HU610	30621279	○

MEGA-Stack-Drill-Hand-CTA

Solid carbide twist drill, long design
SCD48 (5xD)

ø 9,52 - 12,30

Dimensions					Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z			
9,52	10,00	152,4	50,8	2	SCD480-0952-2-2-135HA05-HU610	30621280	○
9,53	10,00	152,4	50,8	2	SCD480-0953-2-2-135HA05-HU610	30621281	○
9,54	10,00	152,4	50,8	2	SCD480-0954-2-2-135HA05-HU610	30621282	○
9,55	10,00	152,4	50,8	2	SCD480-0955-2-2-135HA05-HU610	30621283	○
9,60	10,00	152,4	50,8	2	SCD480-0960-2-2-135HA05-HU610	30621284	○
9,70	10,00	152,4	50,8	2	SCD480-0970-2-2-135HA05-HU610	30621285	○
9,80	10,00	152,4	50,8	2	SCD480-0980-2-2-135HA05-HU610	30621286	○
9,84	10,00	152,4	50,8	2	SCD480-0984-2-2-135HA05-HU610	30621287	○
9,90	10,00	152,4	50,8	2	SCD480-0990-2-2-135HA05-HU610	30621288	○
10,00	10,00	152,4	50,8	2	SCD480-1000-2-2-135HA05-HU610	30621289	○
10,10	12,00	152,4	50,8	2	SCD480-1010-2-2-135HA05-HU610	30621290	○
10,20	12,00	152,4	50,8	2	SCD480-1020-2-2-135HA05-HU610	30621291	○
10,30	12,00	152,4	50,8	2	SCD480-1030-2-2-135HA05-HU610	30621292	○
10,40	12,00	152,4	50,8	2	SCD480-1040-2-2-135HA05-HU610	30621293	○
10,50	12,00	152,4	50,8	2	SCD480-1050-2-2-135HA05-HU610	30621294	○
10,60	12,00	152,4	50,8	2	SCD480-1060-2-2-135HA05-HU610	30621295	○
10,70	12,00	152,4	50,8	2	SCD480-1070-2-2-135HA05-HU610	30621296	○
10,80	12,00	152,4	50,8	2	SCD480-1080-2-2-135HA05-HU610	30621297	○
10,90	12,00	152,4	50,8	2	SCD480-1090-2-2-135HA05-HU610	30621298	○
10,98	12,00	152,4	50,8	2	SCD480-1098-2-2-135HA05-HU610	30621299	○
11,00	12,00	152,4	50,8	2	SCD480-1100-2-2-135HA05-HU610	30621300	○
11,03	12,00	152,4	50,8	2	SCD480-1103-2-2-135HA05-HU610	30621301	○
11,10	12,00	152,4	50,8	2	SCD480-1110-2-2-135HA05-HU610	30621302	○
11,11	12,00	152,4	50,8	2	SCD480-1111-2-2-135HA05-HU610	30621303	○
11,12	12,00	152,4	50,8	2	SCD480-1112-2-2-135HA05-HU610	30621304	○
11,13	12,00	152,4	50,8	2	SCD480-1113-2-2-135HA05-HU610	30621305	○
11,14	12,00	152,4	50,8	2	SCD480-1114-2-2-135HA05-HU610	30621306	○
11,20	12,00	152,4	50,8	2	SCD480-1135-2-2-135HA05-HU610	30621307	○
11,30	12,00	152,4	50,8	2	SCD480-1130-2-2-135HA05-HU610	30621308	○
11,40	12,00	152,4	50,8	2	SCD480-1140-2-2-135HA05-HU610	30621309	○
11,43	12,00	152,4	50,8	2	SCD480-1143-2-2-135HA05-HU610	30621310	○
11,50	12,00	152,4	50,8	2	SCD480-1150-2-2-135HA05-HU610	30621311	○
11,60	12,00	152,4	50,8	2	SCD480-1160-2-2-135HA05-HU610	30621312	○
11,70	12,00	152,4	50,8	2	SCD480-1170-2-2-135HA05-HU610	30621313	○
11,80	12,00	152,4	50,8	2	SCD480-1180-2-2-135HA05-HU610	30621314	○
11,90	12,00	152,4	50,8	2	SCD480-1190-2-2-135HA05-HU610	30621315	○
12,00	12,00	152,4	50,8	2	SCD480-1350-2-2-135HA05-HU610	30621316	○
12,10	14,00	152,4	50,8	2	SCD480-1210-2-2-135HA05-HU610	30621317	○
12,20	14,00	152,4	50,8	2	SCD480-1220-2-2-135HA05-HU610	30621318	○
12,30	14,00	152,4	50,8	2	SCD480-1230-2-2-135HA05-HU610	30621319	○

MEGA-Stack-Drill-Hand-CTA

Solid carbide twist drill, long design
SCD48 (5xD)

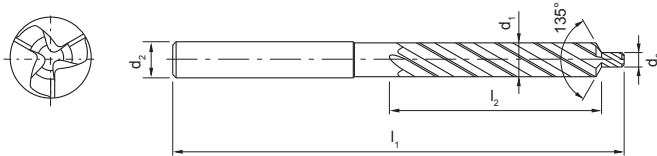
ø 12,40 - 13,02

Dimensions					Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z			
12,40	14,00	152,4	50,8	2	SCD480-1240-2-2-135HA05-HU610	30621320	○
12,50	14,00	152,4	50,8	2	SCD480-1250-2-2-135HA05-HU610	30621321	○
12,56	14,00	152,4	50,8	2	SCD480-1256-2-2-135HA05-HU610	30621322	○
12,60	14,00	152,4	50,8	2	SCD480-1260-2-2-135HA05-HU610	30621323	○
12,61	14,00	152,4	50,8	2	SCD480-1261-2-2-135HA05-HU610	30621324	○
12,69	14,00	152,4	50,8	2	SCD480-1269-2-2-135HA05-HU610	30621325	○
12,70	14,00	152,4	50,8	2	SCD480-1270-2-2-135HA05-HU610	30621326	○
12,71	14,00	152,4	50,8	2	SCD480-1271-2-2-135HA05-HU610	30621327	○
12,72	14,00	152,4	50,8	2	SCD480-1272-2-2-135HA05-HU610	30621328	○
12,73	14,00	152,4	50,8	2	SCD480-1273-2-2-135HA05-HU610	30621329	○
12,80	14,00	152,4	50,8	2	SCD480-1280-2-2-135HA05-HU610	30621330	○
12,90	14,00	152,4	50,8	2	SCD480-1290-2-2-135HA05-HU610	30621331	○
13,00	14,00	152,4	50,8	2	SCD480-1300-2-2-135HA05-HU610	30621332	○
13,02	14,00	152,4	50,8	2	SCD480-1302-2-2-135HA05-HU610	30621333	○

MEGA-Stack-CoreDrill-Hand-CTA

Solid carbide boring tool, short design

SCD51 (5xD)



Design:

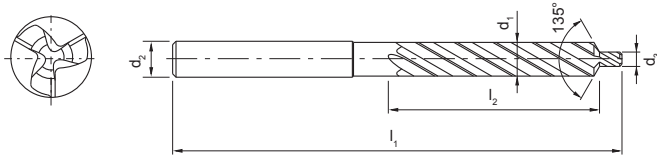
Drill diameter:	4,00 - 12,00 mm
Bore tolerance:	IT 8
Shank form:	HA
Coating:	uncoated
Number of blades:	3
Guide chamfer:	3
Tip angle:	135°
Helix angle:	30°

Application: Boring tool for multi-layer out of CFRP and aluminium or CFRP and titanium

Dimensions						Specification	Order number	
d ₁	d ₂	d ₃	l ₁	l ₂	z			
4,00	4,00	3,2	101,6	50,8	4	SCD510-0200-3-3-135HA05-HU610	30621372	○
4,50	4,50	3,2	101,6	50,8	4	SCD510-0210-3-3-135HA05-HU610	30621373	○
5,00	5,00	3,2	101,6	50,8	4	SCD510-0220-3-3-135HA05-HU610	30621374	○
5,50	5,50	3,2	101,6	50,8	4	SCD510-0230-3-3-135HA05-HU610	30621375	○
6,00	6,00	3,2	101,6	50,8	4	SCD510-0240-3-3-135HA05-HU610	30621376	○
6,50	6,50	3,2	101,6	50,8	4	SCD510-0250-3-3-135HA05-HU610	30621377	○
7,00	7,00	6	101,6	50,8	4	SCD510-0260-3-3-135HA05-HU610	30621378	○
7,50	7,50	6	101,6	50,8	4	SCD510-0270-3-3-135HA05-HU610	30621379	○
8,00	8,00	6	101,6	50,8	4	SCD510-0280-3-3-135HA05-HU610	30621380	○
8,50	8,50	6	101,6	50,8	4	SCD510-0290-3-3-135HA05-HU610	30621381	○
9,00	9,00	6	101,6	50,8	4	SCD510-0300-3-3-135HA05-HU610	30621382	○
9,50	9,50	6	101,6	50,8	4	SCD510-0310-3-3-135HA05-HU610	30621383	○
10,00	10,00	9	101,6	50,8	4	SCD510-0320-3-3-135HA05-HU610	30621384	○
10,50	10,00	9	101,6	50,8	4	SCD510-0330-3-3-135HA05-HU610	30621385	○
11,00	10,00	9	101,6	50,8	4	SCD510-0340-3-3-135HA05-HU610	30621386	○
11,50	10,00	9	101,6	50,8	4	SCD510-0350-3-3-135HA05-HU610	30621387	○
12,00	10,00	9	101,6	50,8	4	SCD510-0360-3-3-135HA05-HU610	30621388	○

MEGA-Stack-CoreDrill-Hand-CTA

Solid carbide boring tool, long design
SCD52 (5xD)



Design:

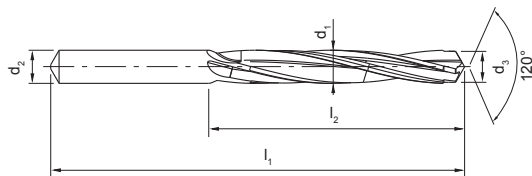
Drill diameter:	4,00 – 12,00 mm
Bore tolerance:	IT 8
Shank form:	HA
Coating:	uncoated
Number of blades:	3
Guide chamfer:	3
Tip angle:	135°
Helix angle:	30°

Application: Boring tool for multi-layer out of CFRP and aluminium or CFRP and titanium

Dimensions						Specification	Order number	
d ₁	d ₂	d ₃	l ₁	l ₂	z			
4,00	4,00	3,2	152,4	50,8	4	SCD520-0400-3-3-135HA05-HU610	30621394	○
4,50	4,50	3,2	152,4	50,8	4	SCD520-0450-3-3-135HA05-HU610	30621395	○
5,00	5,00	3,2	152,4	50,8	4	SCD520-0500-3-3-135HA05-HU610	30621396	○
5,50	5,50	3,2	152,4	50,8	4	SCD520-0550-3-3-135HA05-HU610	30621397	○
6,00	6,00	3,2	152,4	50,8	4	SCD520-0600-3-3-135HA05-HU610	30621398	○
6,50	6,50	3,2	152,4	50,8	4	SCD520-0650-3-3-135HA05-HU610	30621399	○
7,00	7,00	6	152,4	50,8	4	SCD520-0700-3-3-135HA05-HU610	30621400	○
7,50	7,50	6	152,4	50,8	4	SCD520-0750-3-3-135HA05-HU610	30621401	○
8,00	8,00	6	152,4	50,8	4	SCD520-0800-3-3-135HA05-HU610	30621402	○
8,50	8,50	6	152,4	50,8	4	SCD520-0850-3-3-135HA05-HU610	30621403	○
9,00	9,00	6	152,4	50,8	4	SCD520-0900-3-3-135HA05-HU610	30621404	○
9,50	9,50	6	152,4	50,8	4	SCD520-0950-3-3-135HA05-HU610	30621405	○
10,00	10,00	9	152,4	50,8	4	SCD520-1000-3-3-135HA05-HU610	30621406	○
10,50	10,00	9	152,4	50,8	4	SCD520-1050-3-3-135HA05-HU610	30621407	○
11,00	10,00	9	152,4	50,8	4	SCD520-1100-3-3-135HA05-HU610	30621408	○
11,50	10,00	9	152,4	50,8	4	SCD520-1150-3-3-135HA05-HU610	30621409	○
12,00	10,00	9	152,4	50,8	4	SCD520-1350-3-3-120HA05-HU610	30621410	○

MEGA-Stack-Reamer-Hand-CTA

Solid carbide reamers, short design
SCD53 (5xD)



Design:	
Drill diameter:	4,00 – 13,02 mm
Bore tolerance:	IT 7
Shank form:	HA
Coating:	uncoated
Number of blades:	4
Guide chamfer:	4
Tip angle:	120°
Helix angle:	15°

Application: Reamer for multi-layer out of CFRP and aluminium or CFRP and titanium

Dimensions						Specification	Order number	
d ₁	d ₂	d ₃	l ₁	l ₂	z			
4,00	4,00	3,50	101,6	50,8	4	SCD530-0400-4-4-120HA05-HU610	30621414	○
4,08	4,08	3,50	101,6	50,8	4	SCD530-0408-4-4-120HA05-HU610	30621415	○
4,10	4,10	3,50	101,6	50,8	4	SCD530-0410-4-4-120HA05-HU610	30621416	○
4,14	4,14	3,50	101,6	50,8	4	SCD530-0414-4-4-120HA05-HU610	30621417	○
4,17	4,17	3,50	101,6	50,8	4	SCD530-0417-4-4-120HA05-HU610	30621418	○
4,18	4,18	3,50	101,6	50,8	4	SCD530-0418-4-4-120HA05-HU610	30621419	○
4,19	4,19	3,50	101,6	50,8	4	SCD530-0419-4-4-120HA05-HU610	30621420	○
4,20	4,20	3,50	101,6	50,8	4	SCD530-0420-4-4-120HA05-HU610	30621421	○
4,30	4,30	3,50	101,6	50,8	4	SCD530-0430-4-4-120HA05-HU610	30621422	○
4,40	4,40	3,50	101,6	50,8	4	SCD530-0440-4-4-120HA05-HU610	30621423	○
4,50	4,50	4,00	101,6	50,8	4	SCD530-0450-4-4-120HA05-HU610	30621424	○
4,60	4,60	4,00	101,6	50,8	4	SCD530-0460-4-4-120HA05-HU610	30621425	○
4,70	4,70	4,00	101,6	50,8	4	SCD530-0470-4-4-120HA05-HU610	30621426	○
4,73	4,73	4,00	101,6	50,8	4	SCD530-0473-4-4-120HA05-HU610	30621427	○
4,75	4,75	4,00	101,6	50,8	4	SCD530-0475-4-4-120HA05-HU610	30621428	○
4,80	4,80	4,00	101,6	50,8	4	SCD530-0480-4-4-120HA05-HU610	30621429	○
4,82	4,82	4,00	101,6	50,8	4	SCD530-0482-4-4-120HA05-HU610	30621430	○
4,83	4,83	4,00	101,6	50,8	4	SCD530-0483-4-4-120HA05-HU610	30621431	○
4,84	4,84	4,00	101,6	50,8	4	SCD530-0484-4-4-120HA05-HU610	30621432	○
4,90	4,90	4,00	101,6	50,8	4	SCD530-0490-4-4-120HA05-HU610	30621433	○
5,00	5,00	4,50	101,6	50,8	4	SCD530-0500-4-4-120HA05-HU610	30621434	○
5,10	5,10	4,50	101,6	50,8	4	SCD530-0510-4-4-120HA05-HU610	30621435	○
5,14	5,14	4,50	101,6	50,8	4	SCD530-0514-4-4-120HA05-HU610	30621436	○
5,20	5,20	4,50	101,6	50,8	4	SCD530-0520-4-4-120HA05-HU610	30621437	○
5,30	5,30	4,50	101,6	50,8	4	SCD530-0530-4-4-120HA05-HU610	30621438	○
5,40	5,40	4,50	101,6	50,8	4	SCD530-0540-4-4-120HA05-HU610	30621439	○
5,46	5,46	4,50	101,6	50,8	4	SCD530-0546-4-4-120HA05-HU610	30621440	○
5,48	5,48	4,50	101,6	50,8	4	SCD530-0548-4-4-120HA05-HU610	30621441	○
5,50	5,50	5,00	101,6	50,8	4	SCD530-0550-4-4-120HA05-HU610	30621442	○
5,53	5,53	5,00	101,6	50,8	4	SCD530-0553-4-4-120HA05-HU610	30621443	○
5,55	5,55	5,00	101,6	50,8	4	SCD530-0555-4-4-120HA05-HU610	30621444	○
5,56	5,56	5,00	101,6	50,8	4	SCD530-0556-4-4-120HA05-HU610	30621445	○

MEGA-Stack-Reamer-Hand-CTA

Solid carbide reamers, short design
SCD53 (5xD)

ø 5,57 - 7,96

Dimensions						Specification	Order number	
d ₁	d ₂	d ₃	l ₁	l ₂	z			
5,57	5,57	5,00	101,6	50,8	4	SCD530-0557-4-4-120HA05-HU610	30621446	○
5,60	5,60	5,00	101,6	50,8	4	SCD530-0560-4-4-120HA05-HU610	30621447	○
5,70	5,70	5,00	101,6	50,8	4	SCD530-0570-4-4-120HA05-HU610	30621448	○
5,80	5,80	5,00	101,6	50,8	4	SCD530-0580-4-4-120HA05-HU610	30621449	○
5,90	5,90	5,00	101,6	50,8	4	SCD530-0590-4-4-120HA05-HU610	30621450	○
6,00	6,00	5,50	101,6	50,8	4	SCD530-0600-4-4-120HA05-HU610	30621451	○
6,10	6,10	5,50	101,6	50,8	4	SCD530-0610-4-4-120HA05-HU610	30621452	○
6,20	6,20	5,50	101,6	50,8	4	SCD530-0620-4-4-120HA05-HU610	30621453	○
6,24	6,24	5,50	101,6	50,8	4	SCD530-0624-4-4-120HA05-HU610	30621454	○
6,27	6,27	5,50	101,6	50,8	4	SCD530-0627-4-4-120HA05-HU610	30621455	○
6,30	6,30	5,50	101,6	50,8	4	SCD530-0630-4-4-120HA05-HU610	30621456	○
6,33	6,33	5,50	101,6	50,8	4	SCD530-0633-4-4-120HA05-HU610	30621457	○
6,34	6,34	5,50	101,6	50,8	4	SCD530-0634-4-4-120HA05-HU610	30621458	○
6,35	6,35	5,50	101,6	50,8	4	SCD530-0635-4-4-120HA05-HU610	30621459	○
6,36	6,36	5,50	101,6	50,8	4	SCD530-0636-4-4-120HA05-HU610	30621460	○
6,37	6,37	5,50	101,6	50,8	4	SCD530-0637-4-4-120HA05-HU610	30621461	○
6,38	6,38	5,50	101,6	50,8	4	SCD530-0638-4-4-120HA05-HU610	30621462	○
6,40	6,40	5,50	101,6	50,8	4	SCD530-0640-4-4-120HA05-HU610	30621463	○
6,50	6,50	6,00	101,6	50,8	4	SCD530-0650-4-4-120HA05-HU610	30621464	○
6,60	6,60	6,00	101,6	50,8	4	SCD530-0660-4-4-120HA05-HU610	30621465	○
6,67	6,67	6,00	101,6	50,8	4	SCD530-0667-4-4-120HA05-HU610	30621466	○
6,70	6,70	6,00	101,6	50,8	4	SCD530-0670-4-4-120HA05-HU610	30621467	○
6,80	6,80	6,00	101,6	50,8	4	SCD530-0680-4-4-120HA05-HU610	30621468	○
6,90	6,90	6,00	101,6	50,8	4	SCD530-0690-4-4-120HA05-HU610	30621469	○
7,00	7,00	6,50	101,6	50,8	4	SCD530-0700-4-4-120HA05-HU610	30621470	○
7,10	7,10	6,50	101,6	50,8	4	SCD530-0710-4-4-120HA05-HU610	30621471	○
7,20	7,20	6,50	101,6	50,8	4	SCD530-0720-4-4-120HA05-HU610	30621472	○
7,30	7,30	6,50	101,6	50,8	4	SCD530-0730-4-4-120HA05-HU610	30621473	○
7,40	7,40	6,50	101,6	50,8	4	SCD530-0740-4-4-120HA05-HU610	30621474	○
7,50	7,50	7,00	101,6	50,8	4	SCD530-0750-4-4-120HA05-HU610	30621475	○
7,60	7,60	7,00	101,6	50,8	4	SCD530-0760-4-4-120HA05-HU610	30621476	○
7,70	7,70	7,00	101,6	50,8	4	SCD530-0770-4-4-120HA05-HU610	30621477	○
7,80	7,80	7,00	101,6	50,8	4	SCD530-0780-4-4-120HA05-HU610	30621478	○
7,82	7,82	7,00	101,6	50,8	4	SCD530-0782-4-4-120HA05-HU610	30621479	○
7,90	7,90	7,00	101,6	50,8	4	SCD530-0790-4-4-120HA05-HU610	30621480	○
7,92	7,92	7,00	101,6	50,8	4	SCD530-0792-4-4-120HA05-HU610	30621481	○
7,93	7,93	7,00	101,6	50,8	4	SCD530-0793-4-4-120HA05-HU610	30621482	○
7,94	7,94	7,00	101,6	50,8	4	SCD530-0794-4-4-120HA05-HU610	30621483	○
7,95	7,95	7,00	101,6	50,8	4	SCD530-0795-4-4-120HA05-HU610	30621484	○
7,96	7,96	7,00	101,6	50,8	4	SCD530-0796-4-4-120HA05-HU610	30621485	○

MEGA-Stack-Reamer-Hand-CTA

Solid carbide reamers, short design
SCD53 (5xD)

ø 7,97- 10,98

Dimensions						Specification	Order number	
d ₁	d ₂	d ₃	l ₁	l ₂	z			
7,97	7,97	7,00	101,6	50,8	4	SCD530-0797-4-4-120HA05-HU610	30621486	○
8,00	8,00	7,50	101,6	50,8	4	SCD530-0800-4-4-120HA05-HU610	30621487	○
8,10	8,10	7,50	101,6	50,8	4	SCD530-0810-4-4-120HA05-HU610	30621488	○
8,20	8,20	7,50	101,6	50,8	4	SCD530-0820-4-4-120HA05-HU610	30621489	○
8,26	8,26	7,50	101,6	50,8	4	SCD530-0826-4-4-120HA05-HU610	30621490	○
8,30	8,30	7,50	101,6	50,8	4	SCD530-0830-4-4-120HA05-HU610	30621491	○
8,40	8,40	7,50	101,6	50,8	4	SCD530-0840-4-4-120HA05-HU610	30621492	○
8,50	8,50	8,00	101,6	50,8	4	SCD530-0850-4-4-120HA05-HU610	30621493	○
8,60	8,60	8,00	101,6	50,8	4	SCD530-0860-4-4-120HA05-HU610	30621494	○
8,70	8,70	8,00	101,6	50,8	4	SCD530-0870-4-4-120HA05-HU610	30621495	○
8,80	8,80	8,00	101,6	50,8	4	SCD530-0880-4-4-120HA05-HU610	30621496	○
8,90	8,90	8,00	101,6	50,8	4	SCD530-0890-4-4-120HA05-HU610	30621497	○
9,00	9,00	8,50	101,6	50,8	4	SCD530-0900-4-4-120HA05-HU610	30621498	○
9,10	9,10	8,50	101,6	50,8	4	SCD530-0910-4-4-120HA05-HU610	30621499	○
9,20	9,20	8,50	101,6	50,8	4	SCD530-0920-4-4-120HA05-HU610	30621500	○
9,30	9,30	8,50	101,6	50,8	4	SCD530-0930-4-4-120HA05-HU610	30621501	○
9,40	9,40	8,50	101,6	50,8	4	SCD530-0940-4-4-120HA05-HU610	30621502	○
9,44	9,44	8,50	101,6	50,8	4	SCD530-0944-4-4-120HA05-HU610	30621503	○
9,50	9,50	9,00	101,6	50,8	4	SCD530-0950-4-4-120HA05-HU610	30621504	○
9,51	9,51	9,00	101,6	50,8	4	SCD530-0951-4-4-120HA05-HU610	30621505	○
9,52	9,52	9,00	101,6	50,8	4	SCD530-0952-4-4-120HA05-HU610	30621506	○
9,53	9,53	9,00	101,6	50,8	4	SCD530-0953-4-4-120HA05-HU610	30621507	○
9,54	9,54	9,00	101,6	50,8	4	SCD530-0954-4-4-120HA05-HU610	30621508	○
9,55	9,55	9,00	101,6	50,8	4	SCD530-0955-4-4-120HA05-HU610	30621509	○
9,60	9,60	9,00	101,6	50,8	4	SCD530-0960-4-4-120HA05-HU610	30621510	○
9,70	9,70	9,00	101,6	50,8	4	SCD530-0970-4-4-120HA05-HU610	30621511	○
9,80	9,80	9,00	101,6	50,8	4	SCD530-0980-4-4-120HA05-HU610	30621512	○
9,84	9,84	9,00	101,6	50,8	4	SCD530-0984-4-4-120HA05-HU610	30621513	○
9,90	9,90	9,00	101,6	50,8	4	SCD530-0990-4-4-120HA05-HU610	30621514	○
10,00	10,00	9,50	101,6	50,8	4	SCD530-1000-4-4-120HA05-HU610	30621515	○
10,10	10,00	9,50	101,6	50,8	4	SCD530-1010-4-4-120HA05-HU610	30621516	○
10,20	10,00	9,50	101,6	50,8	4	SCD530-1020-4-4-120HA05-HU610	30621517	○
10,30	10,00	9,50	101,6	50,8	4	SCD530-1030-4-4-120HA05-HU610	30621518	○
10,40	10,00	9,50	101,6	50,8	4	SCD530-1040-4-4-120HA05-HU610	30621519	○
10,50	10,00	10,00	101,6	50,8	4	SCD530-1050-4-4-120HA05-HU610	30621520	○
10,60	10,00	10,00	101,6	50,8	4	SCD530-1060-4-4-120HA05-HU610	30621521	○
10,70	10,00	10,00	101,6	50,8	4	SCD530-1070-4-4-120HA05-HU610	30621522	○
10,80	10,00	10,00	101,6	50,8	4	SCD530-1080-4-4-120HA05-HU610	30621523	○
10,90	10,00	10,00	101,6	50,8	4	SCD530-1090-4-4-120HA05-HU610	30621524	○
10,98	10,00	10,00	101,6	50,8	4	SCD530-1098-4-4-120HA05-HU610	30621525	○

MEGA-Stack-Reamer-Hand-CTA

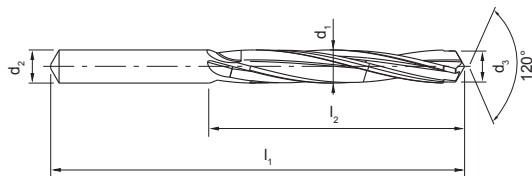
Solid carbide reamers, short design
SCD53 (5xD)

ø 11,00 - 13,02

Dimensions						Specification	Order number	
d ₁	d ₂	d ₃	l ₁	l ₂	z			
11,00	10,00	10,50	101,6	50,8	4	SCD530-1100-4-4-120HA05-HU610	30621526	○
11,03	10,00	10,50	101,6	50,8	4	SCD530-1102,8-4-4-120HA05-HU610	30621527	○
11,10	10,00	10,50	101,6	50,8	4	SCD530-1110-4-4-120HA05-HU610	30621528	○
11,11	10,00	10,50	101,6	50,8	4	SCD530-1111-4-4-120HA05-HU610	30621529	○
11,12	10,00	10,50	101,6	50,8	4	SCD530-1112-4-4-120HA05-HU610	30621530	○
11,13	10,00	10,50	101,6	50,8	4	SCD530-1113-4-4-120HA05-HU610	30621531	○
11,14	10,00	10,50	101,6	50,8	4	SCD530-1114-4-4-120HA05-HU610	30621532	○
11,20	10,00	10,50	101,6	50,8	4	SCD530-1120-4-4-120HA05-HU610	30621533	○
11,30	10,00	10,50	101,6	50,8	4	SCD530-1130-4-4-120HA05-HU610	30621534	○
11,40	10,00	10,50	101,6	50,8	4	SCD530-1140-4-4-120HA05-HU610	30621535	○
11,43	10,00	10,50	101,6	50,8	4	SCD530-1143-4-4-120HA05-HU610	30621537	○
11,50	10,00	11,00	101,6	50,8	4	SCD530-1150-4-4-120HA05-HU610	30621538	○
11,60	10,00	11,00	101,6	50,8	4	SCD530-1160-4-4-120HA05-HU610	30621539	○
11,70	10,00	11,00	101,6	50,8	4	SCD530-1170-4-4-120HA05-HU610	30621540	○
11,80	10,00	11,00	101,6	50,8	4	SCD530-1180-4-4-120HA05-HU610	30621541	○
11,90	10,00	11,00	101,6	50,8	4	SCD530-1190-4-4-120HA05-HU610	30621542	○
12,00	10,00	11,50	101,6	50,8	4	SCD530-1200-4-4-120HA05-HU610	30621543	○
12,10	10,00	11,50	101,6	50,8	4	SCD530-1210-4-4-120HA05-HU610	30621544	○
12,20	10,00	11,50	101,6	50,8	4	SCD530-1220-4-4-120HA05-HU610	30621545	○
12,30	10,00	11,50	101,6	50,8	4	SCD530-1230-4-4-120HA05-HU610	30621546	○
12,40	10,00	11,50	101,6	50,8	4	SCD530-1240-4-4-120HA05-HU610	30621547	○
12,50	10,00	12,00	101,6	50,8	4	SCD530-1250-4-4-120HA05-HU610	30621548	○
12,56	10,00	12,00	101,6	50,8	4	SCD530-1256-4-4-120HA05-HU610	30621549	○
12,60	10,00	12,00	101,6	50,8	4	SCD530-1260-4-4-120HA05-HU610	30621550	○
12,61	10,00	12,00	101,6	50,8	4	SCD530-1261-4-4-120HA05-HU610	30621551	○
12,69	10,00	12,00	101,6	50,8	4	SCD530-1269-4-4-120HA05-HU610	30621552	○
12,70	10,00	12,00	101,6	50,8	4	SCD530-1270-4-4-120HA05-HU610	30621553	○
12,71	10,00	12,00	101,6	50,8	4	SCD530-1271-4-4-120HA05-HU610	30621554	○
12,72	10,00	12,00	101,6	50,8	4	SCD530-1272-4-4-120HA05-HU610	30621555	○
12,73	10,00	12,00	101,6	50,8	4	SCD530-1273-4-4-120HA05-HU610	30621556	○
12,80	10,00	12,00	101,6	50,8	4	SCD530-1280-4-4-120HA05-HU610	30621557	○
12,90	10,00	12,00	101,6	50,8	4	SCD530-1290-4-4-120HA05-HU610	30621558	○
13,00	10,00	12,00	101,6	50,8	4	SCD530-1300-4-4-120HA05-HU610	30621559	○
13,02	10,00	12,00	101,6	50,8	4	SCD530-1302-4-4-120HA05-HU610	30621560	○

MEGA-Stack-Reamer-Hand-CTA

Solid carbide reamers, long design
SCD54 (5xD)



Design:	
Drill diameter:	4,00 - 13,02 mm
Bore tolerance:	IT 7
Shank form:	HA
Coating:	uncoated
Number of blades:	4
Guide chamfer:	4
Tip angle:	120°
Helix angle:	15°

Application: Reamer for multi-layer out of CFRP and aluminium or CFRP and titanium

Dimensions						Specification	Order number	
d ₁	d ₂	d ₃	l ₁	l ₂	z			
4,00	4,00	3,50	152,4	50,8	4	SCD540-0400-4-4-120HA05-HU610	30621571	○
4,08	4,08	3,50	152,4	50,8	4	SCD540-0408-4-4-120HA05-HU610	30621572	○
4,10	4,10	3,50	152,4	50,8	4	SCD540-0410-4-4-120HA05-HU610	30621573	○
4,14	4,14	3,50	152,4	50,8	4	SCD540-0414-4-4-120HA05-HU610	30621574	○
4,17	4,17	3,50	152,4	50,8	4	SCD540-0417-4-4-120HA05-HU610	30621575	○
4,18	4,18	3,50	152,4	50,8	4	SCD540-0418-4-4-120HA05-HU610	30621576	○
4,19	4,19	3,50	152,4	50,8	4	SCD540-0419-4-4-120HA05-HU610	30621577	○
4,20	4,20	3,50	152,4	50,8	4	SCD540-0420-4-4-120HA05-HU610	30621578	○
4,30	4,30	3,50	152,4	50,8	4	SCD540-0430-4-4-120HA05-HU610	30621579	○
4,40	4,40	3,50	152,4	50,8	4	SCD540-0440-4-4-120HA05-HU610	30621580	○
4,50	4,50	4,00	152,4	50,8	4	SCD540-0450-4-4-120HA05-HU610	30621581	○
4,60	4,60	4,00	152,4	50,8	4	SCD540-0460-4-4-120HA05-HU610	30621582	○
4,70	4,70	4,00	152,4	50,8	4	SCD540-0470-4-4-120HA05-HU610	30621583	○
4,73	4,73	4,00	152,4	50,8	4	SCD540-0473-4-4-120HA05-HU610	30621584	○
4,75	4,75	4,00	152,4	50,8	4	SCD540-0475-4-4-120HA05-HU610	30621585	○
4,80	4,80	4,00	152,4	50,8	4	SCD540-0480-4-4-120HA05-HU610	30621586	○
4,82	4,82	4,00	152,4	50,8	4	SCD540-0482-4-4-120HA05-HU610	30621587	○
4,83	4,83	4,00	152,4	50,8	4	SCD540-0483-4-4-120HA05-HU610	30621588	○
4,84	4,84	4,00	152,4	50,8	4	SCD540-0484-4-4-120HA05-HU610	30621589	○
4,90	4,90	4,00	152,4	50,8	4	SCD540-0490-4-4-120HA05-HU610	30621590	○
5,00	5,00	4,50	152,4	50,8	4	SCD540-0500-4-4-120HA05-HU610	30621591	○
5,10	5,10	4,50	152,4	50,8	4	SCD540-0510-4-4-120HA05-HU610	30621592	○
5,14	5,14	4,50	152,4	50,8	4	SCD540-0514-4-4-120HA05-HU610	30621593	○
5,20	5,20	4,50	152,4	50,8	4	SCD540-0520-4-4-120HA05-HU610	30621594	○
5,30	5,30	4,50	152,4	50,8	4	SCD540-0530-4-4-120HA05-HU610	30621595	○
5,40	5,40	4,50	152,4	50,8	4	SCD540-0540-4-4-120HA05-HU610	30621596	○
5,46	5,46	4,50	152,4	50,8	4	SCD540-0546-4-4-120HA05-HU610	30621597	○
5,48	5,48	4,50	152,4	50,8	4	SCD540-0548-4-4-120HA05-HU610	30621598	○
5,50	5,50	5,00	152,4	50,8	4	SCD540-0550-4-4-120HA05-HU610	30621599	○
5,53	5,53	5,00	152,4	50,8	4	SCD540-0553-4-4-120HA05-HU610	30621600	○
5,55	5,55	5,00	152,4	50,8	4	SCD540-0555-4-4-120HA05-HU610	30621601	○
5,56	5,56	5,00	152,4	50,8	4	SCD540-0556-4-4-120HA05-HU610	30621602	○

MEGA-Stack-Reamer-Hand-CTA

Solid carbide reamers, long design
SCD54 (5xD)

ø 5,57 - 7,96

Dimensions						Specification	Order number	
d ₁	d ₂	d ₃	l ₁	l ₂	z			
5,57	5,57	5,00	152,4	50,8	4	SCD540-0557-4-4-120HA05-HU610	30621603	○
5,60	5,60	5,00	152,4	50,8	4	SCD540-0560-4-4-120HA05-HU610	30621604	○
5,70	5,70	5,00	152,4	50,8	4	SCD540-0570-4-4-120HA05-HU610	30621605	○
5,80	5,80	5,00	152,4	50,8	4	SCD540-0580-4-4-120HA05-HU610	30621606	○
5,90	5,90	5,00	152,4	50,8	4	SCD540-0590-4-4-120HA05-HU610	30621607	○
6,00	6,00	5,50	152,4	50,8	4	SCD540-0600-4-4-120HA05-HU610	30621608	○
6,10	6,10	5,50	152,4	50,8	4	SCD540-0610-4-4-120HA05-HU610	30621609	○
6,20	6,20	5,50	152,4	50,8	4	SCD540-0620-4-4-120HA05-HU610	30621610	○
6,24	6,24	5,50	152,4	50,8	4	SCD540-0624-4-4-120HA05-HU610	30621611	○
6,27	6,27	5,50	152,4	50,8	4	SCD540-0627-4-4-120HA05-HU610	30621612	○
6,30	6,30	5,50	152,4	50,8	4	SCD540-0630-4-4-120HA05-HU610	30621613	○
6,33	6,33	5,50	152,4	50,8	4	SCD540-0633-4-4-120HA05-HU610	30621614	○
6,34	6,34	5,50	152,4	50,8	4	SCD540-0634-4-4-120HA05-HU610	30621615	○
6,35	6,35	5,50	152,4	50,8	4	SCD540-0635-4-4-120HA05-HU610	30621616	○
6,36	6,36	5,50	152,4	50,8	4	SCD540-0636-4-4-120HA05-HU610	30621617	○
6,37	6,37	5,50	152,4	50,8	4	SCD540-0637-4-4-120HA05-HU610	30621618	○
6,38	6,38	5,50	152,4	50,8	4	SCD540-0638-4-4-120HA05-HU610	30621619	○
6,40	6,40	5,50	152,4	50,8	4	SCD540-0640-4-4-120HA05-HU610	30621620	○
6,50	6,50	6,00	152,4	50,8	4	SCD540-0650-4-4-120HA05-HU610	30621621	○
6,60	6,60	6,00	152,4	50,8	4	SCD540-0660-4-4-120HA05-HU610	30621622	○
6,67	6,67	6,00	152,4	50,8	4	SCD540-0667-4-4-120HA05-HU610	30621623	○
6,70	6,70	6,00	152,4	50,8	4	SCD540-0670-4-4-120HA05-HU610	30621624	○
6,80	6,80	6,00	152,4	50,8	4	SCD540-0680-4-4-120HA05-HU610	30621625	○
6,90	6,90	6,00	152,4	50,8	4	SCD540-0690-4-4-120HA05-HU610	30621626	○
7,00	7,00	6,50	152,4	50,8	4	SCD540-0700-4-4-120HA05-HU610	30621627	○
7,10	7,10	6,50	152,4	50,8	4	SCD540-0710-4-4-120HA05-HU610	30621628	○
7,20	7,20	6,50	152,4	50,8	4	SCD540-0720-4-4-120HA05-HU610	30621629	○
7,30	7,30	6,50	152,4	50,8	4	SCD540-0730-4-4-120HA05-HU610	30621630	○
7,40	7,40	6,50	152,4	50,8	4	SCD540-0740-4-4-120HA05-HU610	30621631	○
7,50	7,50	7,00	152,4	50,8	4	SCD540-0750-4-4-120HA05-HU610	30621632	○
7,60	7,60	7,00	152,4	50,8	4	SCD540-0760-4-4-120HA05-HU610	30621633	○
7,70	7,70	7,00	152,4	50,8	4	SCD540-0770-4-4-120HA05-HU610	30621634	○
7,80	7,80	7,00	152,4	50,8	4	SCD540-0780-4-4-120HA05-HU610	30621635	○
7,82	7,82	7,00	152,4	50,8	4	SCD540-0782-4-4-120HA05-HU610	30621636	○
7,90	7,90	7,00	152,4	50,8	4	SCD540-0790-4-4-120HA05-HU610	30621637	○
7,92	7,92	7,00	152,4	50,8	4	SCD540-0792-4-4-120HA05-HU610	30621638	○
7,93	7,93	7,00	152,4	50,8	4	SCD540-0793-4-4-120HA05-HU610	30621639	○
7,94	7,94	7,00	152,4	50,8	4	SCD540-0794-4-4-120HA05-HU610	30621640	○
7,95	7,95	7,00	152,4	50,8	4	SCD540-0795-4-4-120HA05-HU610	30621641	○
7,96	7,96	7,00	152,4	50,8	4	SCD540-0796-4-4-120HA05-HU610	30621642	○

MEGA-Stack-Reamer-Hand-CTA

Solid carbide reamers, long design
SCD54 (5xD)

ø 7,97 - 10,98

Dimensions						Specification	Order number	
d ₁	d ₂	d ₃	l ₁	l ₂	z			
7,97	7,97	7,00	152,4	50,8	4	SCD540-0797-4-4-120HA05-HU610	30621643	○
8,00	8,00	7,50	152,4	50,8	4	SCD540-0800-4-4-120HA05-HU610	30621644	○
8,10	8,10	7,50	152,4	50,8	4	SCD540-0810-4-4-120HA05-HU610	30621645	○
8,20	8,20	7,50	152,4	50,8	4	SCD540-0820-4-4-120HA05-HU610	30621646	○
8,26	8,26	7,50	152,4	50,8	4	SCD540-0826-4-4-120HA05-HU610	30621647	○
8,30	8,30	7,50	152,4	50,8	4	SCD540-0830-4-4-120HA05-HU610	30621648	○
8,40	8,40	7,50	152,4	50,8	4	SCD540-0840-4-4-120HA05-HU610	30621649	○
8,50	8,50	8,00	152,4	50,8	4	SCD540-0850-4-4-120HA05-HU610	30621650	○
8,60	8,60	8,00	152,4	50,8	4	SCD540-0860-4-4-120HA05-HU610	30621651	○
8,70	8,70	8,00	152,4	50,8	4	SCD540-0870-4-4-120HA05-HU610	30621652	○
8,80	8,80	8,00	152,4	50,8	4	SCD540-0880-4-4-120HA05-HU610	30621653	○
8,90	8,90	8,00	152,4	50,8	4	SCD540-0890-4-4-120HA05-HU610	30621654	○
9,00	9,00	8,50	152,4	50,8	4	SCD540-0900-4-4-120HA05-HU610	30621655	○
9,10	9,10	8,50	152,4	50,8	4	SCD540-0910-4-4-120HA05-HU610	30621656	○
9,20	9,20	8,50	152,4	50,8	4	SCD540-0920-4-4-120HA05-HU610	30621657	○
9,30	9,30	8,50	152,4	50,8	4	SCD540-0930-4-4-120HA05-HU610	30621658	○
9,40	9,40	8,50	152,4	50,8	4	SCD540-0940-4-4-120HA05-HU610	30621659	○
9,44	9,44	8,50	152,4	50,8	4	SCD540-0944-4-4-120HA05-HU610	30621660	○
9,50	9,50	9,00	152,4	50,8	4	SCD540-0950-4-4-120HA05-HU610	30621661	○
9,51	9,51	9,00	152,4	50,8	4	SCD540-0951-4-4-120HA05-HU610	30621662	○
9,52	9,52	9,00	152,4	50,8	4	SCD540-0952-4-4-120HA05-HU610	30621663	○
9,53	9,53	9,00	152,4	50,8	4	SCD540-0953-4-4-120HA05-HU610	30621664	○
9,54	9,54	9,00	152,4	50,8	4	SCD540-0954-4-4-120HA05-HU610	30621665	○
9,55	9,55	9,00	152,4	50,8	4	SCD540-0955-4-4-120HA05-HU610	30621666	○
9,60	9,60	9,00	152,4	50,8	4	SCD540-0960-4-4-120HA05-HU610	30621667	○
9,70	9,70	9,00	152,4	50,8	4	SCD540-0970-4-4-120HA05-HU610	30621668	○
9,80	9,80	9,00	152,4	50,8	4	SCD540-0980-4-4-120HA05-HU610	30621669	○
9,84	9,84	9,00	152,4	50,8	4	SCD540-0984-4-4-120HA05-HU610	30621670	○
9,90	9,90	9,00	152,4	50,8	4	SCD540-0990-4-4-120HA05-HU610	30621671	○
10,00	10,00	9,50	152,4	50,8	4	SCD540-1000-4-4-120HA05-HU610	30621672	○
10,10	10,00	9,50	152,4	50,8	4	SCD540-1010-4-4-120HA05-HU610	30621673	○
10,20	10,00	9,50	152,4	50,8	4	SCD540-1020-4-4-120HA05-HU610	30621674	○
10,30	10,00	9,50	152,4	50,8	4	SCD540-1030-4-4-120HA05-HU610	30621675	○
10,40	10,00	9,50	152,4	50,8	4	SCD540-1040-4-4-120HA05-HU610	30621676	○
10,50	10,00	10,00	152,4	50,8	4	SCD540-1050-4-4-120HA05-HU610	30621677	○
10,60	10,00	10,00	152,4	50,8	4	SCD540-1060-4-4-120HA05-HU610	30621678	○
10,70	10,00	10,00	152,4	50,8	4	SCD540-1070-4-4-120HA05-HU610	30621679	○
10,80	10,00	10,00	152,4	50,8	4	SCD540-1080-4-4-120HA05-HU610	30621680	○
10,90	10,00	10,00	152,4	50,8	4	SCD540-1090-4-4-120HA05-HU610	30621681	○
10,98	10,00	10,00	152,4	50,8	4	SCD540-1098-4-4-120HA05-HU610	30621682	○

MEGA-Stack-Reamer-Hand-CTA

Solid carbide reamers, long design

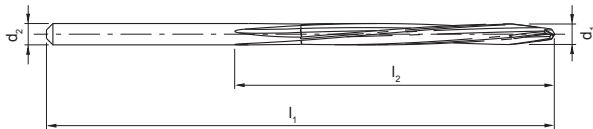
SCD54 (5xD)

ø 11,00 - 13,02

Dimensions						Specification	Order number	
d ₁	d ₂	d ₃	l ₁	l ₂	z			
11,00	10,00	10,50	152,4	50,8	4	SCD540-1100-4-4-120HA05-HU610	30621683	○
11,03	10,00	10,50	152,4	50,8	4	SCD540-1102,8-4-4-120HA05-HU610	30621684	○
11,10	10,00	10,50	152,4	50,8	4	SCD540-1110-4-4-120HA05-HU610	30621685	○
11,11	10,00	10,50	152,4	50,8	4	SCD540-1111-4-4-120HA05-HU610	30621686	○
11,12	10,00	10,50	152,4	50,8	4	SCD540-1112-4-4-120HA05-HU610	30621687	○
11,13	10,00	10,50	152,4	50,8	4	SCD540-1113-4-4-120HA05-HU610	30621688	○
11,14	10,00	10,50	152,4	50,8	4	SCD540-1114-4-4-120HA05-HU610	30621689	○
11,20	10,00	10,50	152,4	50,8	4	SCD540-1120-4-4-120HA05-HU610	30621690	○
11,30	10,00	10,50	152,4	50,8	4	SCD540-1130-4-4-120HA05-HU610	30621691	○
11,40	10,00	10,50	152,4	50,8	4	SCD540-1140-4-4-120HA05-HU610	30621692	○
11,43	10,00	10,50	152,4	50,8	4	SCD540-1143-4-4-120HA05-HU610	30621693	○
11,50	10,00	11,00	152,4	50,8	4	SCD540-1150-4-4-120HA05-HU610	30621694	○
11,60	10,00	11,00	152,4	50,8	4	SCD540-1160-4-4-120HA05-HU610	30621695	○
11,70	10,00	11,00	152,4	50,8	4	SCD540-1170-4-4-120HA05-HU610	30621696	○
11,80	10,00	11,00	152,4	50,8	4	SCD540-1180-4-4-120HA05-HU610	30621697	○
11,90	10,00	11,00	152,4	50,8	4	SCD540-1190-4-4-120HA05-HU610	30621698	○
12,00	10,00	11,50	152,4	50,8	4	SCD540-1200-4-4-120HA05-HU610	30621699	○
12,10	10,00	11,50	152,4	50,8	4	SCD540-1210-4-4-120HA05-HU610	30621700	○
12,20	10,00	11,50	152,4	50,8	4	SCD540-1220-4-4-120HA05-HU610	30621701	○
12,30	10,00	11,50	152,4	50,8	4	SCD540-1230-4-4-120HA05-HU610	30621702	○
12,40	10,00	11,50	152,4	50,8	4	SCD540-1240-4-4-120HA05-HU610	30621703	○
12,50	10,00	12,00	152,4	50,8	4	SCD540-1250-4-4-120HA05-HU610	30621704	○
12,56	10,00	12,00	152,4	50,8	4	SCD540-1256-4-4-120HA05-HU610	30621705	○
12,60	10,00	12,00	152,4	50,8	4	SCD540-1260-4-4-120HA05-HU610	30621706	○
12,61	10,00	12,00	152,4	50,8	4	SCD540-1261-4-4-120HA05-HU610	30621707	○
12,69	10,00	12,00	152,4	50,8	4	SCD540-1269-4-4-120HA05-HU610	30621708	○
12,70	10,00	12,00	152,4	50,8	4	SCD540-1270-4-4-120HA05-HU610	30621709	○
12,71	10,00	12,00	152,4	50,8	4	SCD540-1271-4-4-120HA05-HU610	30621710	○
12,72	10,00	12,00	152,4	50,8	4	SCD540-1272-4-4-120HA05-HU610	30621711	○
12,73	10,00	12,00	152,4	50,8	4	SCD540-1273-4-4-120HA05-HU610	30621712	○
12,80	10,00	12,00	152,4	50,8	4	SCD540-1280-4-4-120HA05-HU610	30621713	○
12,90	10,00	12,00	152,4	50,8	4	SCD540-1290-4-4-120HA05-HU610	30621714	○
13,00	10,00	12,00	152,4	50,8	4	SCD540-1300-4-4-120HA05-HU610	30621715	○
13,02	10,00	12,00	152,4	50,8	4	SCD540-1302-4-4-120HA05-HU610	30621716	○

MEGA-Stack-Drill-Hand-CC

Solid carbide twist drill, short design
SCD49 (5xD)



Design:
 Drill diameter: 2,00 – 13,02 mm
 Bore tolerance: IT 8
 Shank form: HA
 Coating: uncoated
 Number of blades: 4
 Guide chamfer: 4
 Point angle: 118°
 Helix angle: 5°

Application: CFRP with multidirectional fibre structure

Dimensions					Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z			
2,00	2,00	101,6	50,8	4	SCD490-0200-4-4-118HA05-HU610	30621818	●
2,10	2,10	101,6	50,8	4	SCD490-0210-4-4-118HA05-HU610	30621819	○
2,20	2,20	101,6	50,8	4	SCD490-0220-4-4-118HA05-HU610	30621821	○
2,30	2,30	101,6	50,8	4	SCD490-0230-4-4-118HA05-HU610	30621822	○
2,40	2,40	101,6	50,8	4	SCD490-0240-4-4-118HA05-HU610	30621823	○
2,50	2,50	101,6	50,8	4	SCD490-0250-4-4-118HA05-HU610	30621824	●
2,60	2,60	101,6	50,8	4	SCD490-0260-4-4-118HA05-HU610	30621825	○
2,70	2,70	101,6	50,8	4	SCD490-0270-4-4-118HA05-HU610	30621826	○
2,80	2,80	101,6	50,8	4	SCD490-0280-4-4-118HA05-HU610	30621827	○
2,90	2,90	101,6	50,8	4	SCD490-0290-4-4-118HA05-HU610	30621828	○
3,00	3,00	101,6	50,8	4	SCD490-0300-4-4-118HA05-HU610	30621829	●
3,10	3,10	101,6	50,8	4	SCD490-0310-4-4-118HA05-HU610	30621830	○
3,20	3,20	101,6	50,8	4	SCD490-0320-4-4-118HA05-HU610	30621831	●
3,30	3,30	101,6	50,8	4	SCD490-0330-4-4-118HA05-HU610	30621832	○
3,40	3,40	101,6	50,8	4	SCD490-0340-4-4-118HA05-HU610	30621833	○
3,50	3,50	101,6	50,8	4	SCD490-0350-4-4-118HA05-HU610	30621834	○
3,60	3,60	101,6	50,8	4	SCD490-0360-4-4-118HA05-HU610	30621835	○
3,70	3,70	101,6	50,8	4	SCD490-0370-4-4-118HA05-HU610	30621836	○
3,80	3,80	101,6	50,8	4	SCD490-0380-4-4-118HA05-HU610	30621837	○
3,90	3,90	101,6	50,8	4	SCD490-0390-4-4-118HA05-HU610	30621838	○
4,00	4,00	101,6	50,8	4	SCD490-0400-4-4-118HA05-HU610	30621839	●
4,08	4,08	101,6	50,8	4	SCD490-0408-4-4-118HA05-HU610	30621840	○
4,10	4,10	101,6	50,8	4	SCD490-0410-4-4-118HA05-HU610	30621841	○
4,14	4,14	101,6	50,8	4	SCD490-0414-4-4-118HA05-HU610	30621842	○
4,17	4,17	101,6	50,8	4	SCD490-0417-4-4-118HA05-HU610	30621843	○
4,18	4,18	101,6	50,8	4	SCD490-0418-4-4-118HA05-HU610	30621844	○
4,19	4,19	101,6	50,8	4	SCD490-0419-4-4-118HA05-HU610	30621845	○
4,20	4,20	101,6	50,8	4	SCD490-0420-4-4-118HA05-HU610	30621846	○
4,30	4,30	101,6	50,8	4	SCD490-0430-4-4-118HA05-HU610	30621847	○
4,40	4,40	101,6	50,8	4	SCD490-0440-4-4-118HA05-HU610	30621848	○
4,50	4,50	101,6	50,8	4	SCD490-0450-4-4-118HA05-HU610	30621849	●
4,60	4,60	101,6	50,8	4	SCD490-0460-4-4-118HA05-HU610	30621850	○

MEGA-Stack-Drill-Hand-CC

Solid carbide twist drill, short design

SCD49 (5xD)

ø 4,70 - 6,60

Dimensions					Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z			
4,70	4,70	101,6	50,8	4	SCD490-0470-4-4-118HA05-HU610	30621851	○
4,73	4,73	101,6	50,8	4	SCD490-0473-4-4-118HA05-HU610	30621852	○
4,75	4,75	101,6	50,8	4	SCD490-0475-4-4-118HA05-HU610	30621853	○
4,80	4,80	101,6	50,8	4	SCD490-0480-4-4-118HA05-HU610	30621854	○
4,82	4,82	101,6	50,8	4	SCD490-0482-4-4-118HA05-HU610	30621855	○
4,83	4,83	101,6	50,8	4	SCD490-0483-4-4-118HA05-HU610	30621856	●
4,84	4,84	101,6	50,8	4	SCD490-0484-4-4-118HA05-HU610	30621857	○
4,90	4,90	101,6	50,8	4	SCD490-0490-4-4-118HA05-HU610	30621858	○
5,00	5,00	101,6	50,8	4	SCD490-0500-4-4-118HA05-HU610	30621859	●
5,10	5,10	101,6	50,8	4	SCD490-0510-4-4-118HA05-HU610	30621860	○
5,14	5,14	101,6	50,8	4	SCD490-0514-4-4-118HA05-HU610	30621861	○
5,20	5,20	101,6	50,8	4	SCD490-0520-4-4-118HA05-HU610	30621862	○
5,30	5,30	101,6	50,8	4	SCD490-0530-4-4-118HA05-HU610	30621863	○
5,40	5,40	101,6	50,8	4	SCD490-0540-4-4-118HA05-HU610	30621864	○
5,46	5,46	101,6	50,8	4	SCD490-0546-4-4-118HA05-HU610	30621865	○
5,48	5,48	101,6	50,8	4	SCD490-0548-4-4-118HA05-HU610	30621866	○
5,50	5,50	101,6	50,8	4	SCD490-0550-4-4-118HA05-HU610	30621867	●
5,53	5,53	101,6	50,8	4	SCD490-0553-4-4-118HA05-HU610	30621868	○
5,55	5,55	101,6	50,8	4	SCD490-0555-4-4-118HA05-HU610	30621869	○
5,56	5,56	101,6	50,8	4	SCD490-0556-4-4-118HA05-HU610	30621870	○
5,57	5,57	101,6	50,8	4	SCD490-0557-4-4-118HA05-HU610	30621871	○
5,60	5,60	101,6	50,8	4	SCD490-0560-4-4-118HA05-HU610	30621872	○
5,70	5,70	101,6	50,8	4	SCD490-0570-4-4-118HA05-HU610	30621873	○
5,80	5,80	101,6	50,8	4	SCD490-0580-4-4-118HA05-HU610	30621874	○
5,90	5,90	101,6	50,8	4	SCD490-0590-4-4-118HA05-HU610	30621875	○
6,00	6,00	101,6	50,8	4	SCD490-0600-4-4-118HA05-HU610	30621876	●
6,10	6,10	101,6	50,8	4	SCD490-0610-4-4-118HA05-HU610	30621877	○
6,20	6,20	101,6	50,8	4	SCD490-0620-4-4-118HA05-HU610	30621878	○
6,24	6,24	101,6	50,8	4	SCD490-0624-4-4-118HA05-HU610	30621879	○
6,27	6,27	101,6	50,8	4	SCD490-0627-4-4-118HA05-HU610	30621880	○
6,30	6,30	101,6	50,8	4	SCD490-0630-4-4-118HA05-HU610	30621881	○
6,33	6,33	101,6	50,8	4	SCD490-0633-4-4-118HA05-HU610	30621882	○
6,34	6,34	101,6	50,8	4	SCD490-0634-4-4-118HA05-HU610	30621883	○
6,35	6,35	101,6	50,8	4	SCD490-0635-4-4-118HA05-HU610	30621884	●
6,36	6,36	101,6	50,8	4	SCD490-0636-4-4-118HA05-HU610	30621885	○
6,37	6,37	101,6	50,8	4	SCD490-0637-4-4-118HA05-HU610	30621886	○
6,38	6,38	101,6	50,8	4	SCD490-0638-4-4-118HA05-HU610	30621887	○
6,40	6,40	101,6	50,8	4	SCD490-0640-4-4-118HA05-HU610	30621888	○
6,50	6,50	101,6	50,8	4	SCD490-0650-4-4-118HA05-HU610	30621889	●
6,60	6,60	101,6	50,8	4	SCD490-0660-4-4-118HA05-HU610	30621890	○

Dimensions in mm.

Machining values see chapter technical information.

● Available ex stock Germany.

○ Standard tool not on stock (delivery on request).

MEGA-Stack-Drill-Hand-CC

Solid carbide twist drill, short design
SCD49 (5xD)

ø 6,67 - 9,51

Dimensions					Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z			
6,67	6,67	101,6	50,8	4	SCD490-0667-4-4-118HA05-HU610	30621891	○
6,70	6,70	101,6	50,8	4	SCD490-0670-4-4-118HA05-HU610	30621892	○
6,80	6,80	101,6	50,8	4	SCD490-0680-4-4-118HA05-HU610	30621893	○
6,90	6,90	101,6	50,8	4	SCD490-0690-4-4-118HA05-HU610	30621894	○
7,00	7,00	101,6	50,8	4	SCD490-0700-4-4-118HA05-HU610	30621895	●
7,10	7,10	101,6	50,8	4	SCD490-0710-4-4-118HA05-HU610	30621896	○
7,20	7,20	101,6	50,8	4	SCD490-0720-4-4-118HA05-HU610	30621897	○
7,30	7,30	101,6	50,8	4	SCD490-0730-4-4-118HA05-HU610	30621898	○
7,40	7,40	101,6	50,8	4	SCD490-0740-4-4-118HA05-HU610	30621899	○
7,50	7,50	101,6	50,8	4	SCD490-0750-4-4-118HA05-HU610	30621900	●
7,60	7,60	101,6	50,8	4	SCD490-0760-4-4-118HA05-HU610	30621901	○
7,70	7,70	101,6	50,8	4	SCD490-0770-4-4-118HA05-HU610	30621902	○
7,80	7,80	101,6	50,8	4	SCD490-0780-4-4-118HA05-HU610	30621903	●
7,82	7,82	101,6	50,8	4	SCD490-0782-4-4-118HA05-HU610	30621904	○
7,90	7,90	101,6	50,8	4	SCD490-0790-4-4-118HA05-HU610	30621905	○
7,92	7,92	101,6	50,8	4	SCD490-0792-4-4-118HA05-HU610	30621906	○
7,93	7,93	101,6	50,8	4	SCD490-0793-4-4-118HA05-HU610	30621907	○
7,94	7,94	101,6	50,8	4	SCD490-0794-4-4-118HA05-HU610	30621908	●
7,95	7,95	101,6	50,8	4	SCD490-0795-4-4-118HA05-HU610	30621909	○
7,96	7,96	101,6	50,8	4	SCD490-0796-4-4-118HA05-HU610	30621910	○
7,97	7,97	101,6	50,8	4	SCD490-0797-4-4-118HA05-HU610	30621911	○
8,00	8,00	101,6	50,8	4	SCD490-0800-4-4-118HA05-HU610	30621912	●
8,10	8,10	101,6	50,8	4	SCD490-0810-4-4-118HA05-HU610	30621913	○
8,20	8,20	101,6	50,8	4	SCD490-0820-4-4-118HA05-HU610	30621914	○
8,26	8,26	101,6	50,8	4	SCD490-0826-4-4-118HA05-HU610	30621915	○
8,30	8,30	101,6	50,8	4	SCD490-0830-4-4-118HA05-HU610	30621916	○
8,40	8,40	101,6	50,8	4	SCD490-0840-4-4-118HA05-HU610	30621917	○
8,50	8,50	101,6	50,8	4	SCD490-0850-4-4-118HA05-HU610	30621918	●
8,60	8,60	101,6	50,8	4	SCD490-0860-4-4-118HA05-HU610	30621919	○
8,70	8,70	101,6	50,8	4	SCD490-0870-4-4-118HA05-HU610	30621920	○
8,80	8,80	101,6	50,8	4	SCD490-0880-4-4-118HA05-HU610	30621921	○
8,90	8,90	101,6	50,8	4	SCD490-0890-4-4-118HA05-HU610	30621922	○
9,00	9,00	101,6	50,8	4	SCD490-0900-4-4-118HA05-HU610	30621923	●
9,10	9,10	101,6	50,8	4	SCD490-0910-4-4-118HA05-HU610	30621924	○
9,20	9,20	101,6	50,8	4	SCD490-0920-4-4-118HA05-HU610	30621925	○
9,30	9,30	101,6	50,8	4	SCD490-0930-4-4-118HA05-HU610	30621926	○
9,40	9,40	101,6	50,8	4	SCD490-0940-4-4-118HA05-HU610	30621927	○
9,44	9,44	101,6	50,8	4	SCD490-0944-4-4-118HA05-HU610	30621928	○
9,50	9,50	101,6	50,8	4	SCD490-0950-4-4-118HA05-HU610	30621929	●
9,51	9,51	101,6	50,8	4	SCD490-0951-4-4-118HA05-HU610	30621930	○

MEGA-Stack-Drill-Hand-CC

Solid carbide twist drill, short design

SCD49 (5xD)

ø 9,52 - 12,30

Dimensions					Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z			
9,52	9,52	101,6	50,8	4	SCD490-0952-4-4-118HA05-HU610	30621931	○
9,53	9,53	101,6	50,8	4	SCD490-0953-4-4-118HA05-HU610	30621932	●
9,54	9,54	101,6	50,8	4	SCD490-0954-4-4-118HA05-HU610	30621933	○
9,55	9,55	101,6	50,8	4	SCD490-0955-4-4-118HA05-HU610	30621934	○
9,60	9,60	101,6	50,8	4	SCD490-0960-4-4-118HA05-HU610	30621935	○
9,70	9,70	101,6	50,8	4	SCD490-0970-4-4-118HA05-HU610	30621936	○
9,80	9,80	101,6	50,8	4	SCD490-0980-4-4-118HA05-HU610	30621937	○
9,84	9,84	101,6	50,8	4	SCD490-0984-4-4-118HA05-HU610	30621938	○
9,90	9,90	101,6	50,8	4	SCD490-0990-4-4-118HA05-HU610	30621939	○
10,00	10,00	101,6	50,8	4	SCD490-1000-4-4-118HA05-HU610	30621940	●
10,10	10,00	101,6	50,8	4	SCD490-1010-4-4-118HA05-HU610	30621941	○
10,20	10,00	101,6	50,8	4	SCD490-1020-4-4-118HA05-HU610	30621942	○
10,30	10,00	101,6	50,8	4	SCD490-1030-4-4-118HA05-HU610	30621943	○
10,40	10,00	101,6	50,8	4	SCD490-1040-4-4-118HA05-HU610	30621944	○
10,50	10,00	101,6	50,8	4	SCD490-1050-4-4-118HA05-HU610	30621945	●
10,60	10,00	101,6	50,8	4	SCD490-1060-4-4-118HA05-HU610	30621946	○
10,70	10,00	101,6	50,8	4	SCD490-1070-4-4-118HA05-HU610	30621947	○
10,80	10,00	101,6	50,8	4	SCD490-1080-4-4-118HA05-HU610	30621948	○
10,90	10,00	101,6	50,8	4	SCD490-1090-4-4-118HA05-HU610	30621949	○
10,98	10,00	101,6	50,8	4	SCD490-1098-4-4-118HA05-HU610	30621950	○
11,00	10,00	101,6	50,8	4	SCD490-1100-4-4-118HA05-HU610	30621951	●
11,03	10,00	101,6	50,8	4	SCD490-1103-4-4-118HA05-HU610	30621952	○
11,10	10,00	101,6	50,8	4	SCD490-1110-4-4-118HA05-HU610	30621953	○
11,11	10,00	101,6	50,8	4	SCD490-1111-4-4-118HA05-HU610	30621954	●
11,12	10,00	101,6	50,8	4	SCD490-1112-4-4-118HA05-HU610	30621955	○
11,13	10,00	101,6	50,8	4	SCD490-1113-4-4-118HA05-HU610	30621956	○
11,14	10,00	101,6	50,8	4	SCD490-1114-4-4-118HA05-HU610	30621957	○
11,20	10,00	101,6	50,8	4	SCD490-1120-4-4-118HA05-HU610	30621958	○
11,30	10,00	101,6	50,8	4	SCD490-1130-4-4-118HA05-HU610	30621959	○
11,40	10,00	101,6	50,8	4	SCD490-1140-4-4-118HA05-HU610	30621960	○
11,43	10,00	101,6	50,8	4	SCD490-1143-4-4-118HA05-HU610	30621961	○
11,50	10,00	101,6	50,8	4	SCD490-1150-4-4-118HA05-HU610	30621962	●
11,60	10,00	101,6	50,8	4	SCD490-1160-4-4-118HA05-HU610	30621963	○
11,70	10,00	101,6	50,8	4	SCD490-1170-4-4-118HA05-HU610	30621964	○
11,80	10,00	101,6	50,8	4	SCD490-1180-4-4-118HA05-HU610	30621965	○
11,90	10,00	101,6	50,8	4	SCD490-1190-4-4-118HA05-HU610	30621966	○
12,00	10,00	101,6	50,8	4	SCD490-1200-4-4-118HA05-HU610	30621967	●
12,10	10,00	101,6	50,8	4	SCD490-1210-4-4-118HA05-HU610	30621968	○
12,20	10,00	101,6	50,8	4	SCD490-1220-4-4-118HA05-HU610	30621969	○
12,30	10,00	101,6	50,8	4	SCD490-1230-4-4-118HA05-HU610	30621970	○

Dimensions in mm.

Machining values see chapter technical information.

● Available ex stock Germany.

○ Standard tool not on stock (delivery on request).

MEGA-Stack-Drill-Hand-CC

Solid carbide twist drill, short design

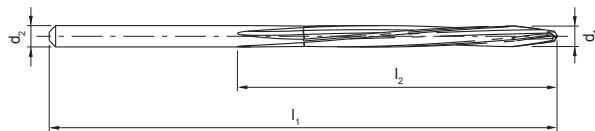
SCD49 (5xD)

ø 12,40 - 13,02

Dimensions					Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z			
12,40	10,00	101,6	50,8	4	SCD490-1240-4-4-118HA05-HU610	30621971	○
12,50	10,00	101,6	50,8	4	SCD490-1250-4-4-118HA05-HU610	30621972	●
12,56	10,00	101,6	50,8	4	SCD490-1256-4-4-118HA05-HU610	30621973	○
12,60	10,00	101,6	50,8	4	SCD490-1260-4-4-118HA05-HU610	30621974	○
12,61	10,00	101,6	50,8	4	SCD490-1261-4-4-118HA05-HU610	30621975	○
12,69	10,00	101,6	50,8	4	SCD490-1269-4-4-118HA05-HU610	30621976	○
12,70	10,00	101,6	50,8	4	SCD490-1270-4-4-118HA05-HU610	30621977	●
12,71	10,00	101,6	50,8	4	SCD490-1271-4-4-118HA05-HU610	30621978	○
12,72	10,00	101,6	50,8	4	SCD490-1272-4-4-118HA05-HU610	30621979	○
12,73	10,00	101,6	50,8	4	SCD490-1273-4-4-118HA05-HU610	30621980	○
12,80	10,00	101,6	50,8	4	SCD490-1280-4-4-118HA05-HU610	30621981	○
12,90	10,00	101,6	50,8	4	SCD490-1290-4-4-118HA05-HU610	30621982	○
13,00	10,00	101,6	50,8	4	SCD490-1300-4-4-118HA05-HU610	30621983	●
13,02	10,00	101,6	50,8	4	SCD490-1302-4-4-118HA05-HU610	30621984	○

MEGA-Stack-Drill-Hand-CC

Solid carbide twist drill, long design
SCD50 (5xD)



Design:	
Drill diameter:	2,00 – 13,02 mm
Bore tolerance:	IT 8
Shank form:	HA
Coating:	uncoated
Number of blades:	4
Guide chamfer:	4
Tip angle:	118°
Helix angle:	5°

Application: CFRP with multidirectional fibres

Dimensions					Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z			
2,00	2,00	152,4	50,8	4	SCD500-0200-4-4-118HA05-HU610	30621991	○
2,10	2,10	152,4	50,8	4	SCD500-0210-4-4-118HA05-HU610	30621992	○
2,20	2,20	152,4	50,8	4	SCD500-0220-4-4-118HA05-HU610	30621993	○
2,30	2,30	152,4	50,8	4	SCD500-0230-4-4-118HA05-HU610	30621994	○
2,40	2,40	152,4	50,8	4	SCD500-0240-4-4-118HA05-HU610	30621995	○
2,50	2,50	152,4	50,8	4	SCD500-0250-4-4-118HA05-HU610	30621996	○
2,60	2,60	152,4	50,8	4	SCD500-0260-4-4-118HA05-HU610	30621997	○
2,70	2,70	152,4	50,8	4	SCD500-0270-4-4-118HA05-HU610	30621998	○
2,80	2,80	152,4	50,8	4	SCD500-0280-4-4-118HA05-HU610	30621999	○
2,90	2,90	152,4	50,8	4	SCD500-0290-4-4-118HA05-HU610	30622000	○
3,00	3,00	152,4	50,8	4	SCD500-0300-4-4-118HA05-HU610	30622001	○
3,10	3,10	152,4	50,8	4	SCD500-0310-4-4-118HA05-HU610	30622002	○
3,20	3,20	152,4	50,8	4	SCD500-0320-4-4-118HA05-HU610	30622003	○
3,30	3,30	152,4	50,8	4	SCD500-0330-4-4-118HA05-HU610	30622004	○
3,40	3,40	152,4	50,8	4	SCD500-0340-4-4-118HA05-HU610	30622005	○
3,50	3,50	152,4	50,8	4	SCD500-0350-4-4-118HA05-HU610	30622006	○
3,60	3,60	152,4	50,8	4	SCD500-0360-4-4-118HA05-HU610	30622007	○
3,70	3,70	152,4	50,8	4	SCD500-0370-4-4-118HA05-HU610	30622008	○
3,80	3,80	152,4	50,8	4	SCD500-0380-4-4-118HA05-HU610	30622009	○
3,90	3,90	152,4	50,8	4	SCD500-0390-4-4-118HA05-HU610	30622010	○
4,00	4,00	152,4	50,8	4	SCD500-0400-4-4-118HA05-HU610	30622011	○
4,08	4,08	152,4	50,8	4	SCD500-0408-4-4-118HA05-HU610	30622012	○
4,10	4,10	152,4	50,8	4	SCD500-0410-4-4-118HA05-HU610	30622013	○
4,14	4,14	152,4	50,8	4	SCD500-0414-4-4-118HA05-HU610	30622014	○
4,17	4,17	152,4	50,8	4	SCD500-0417-4-4-118HA05-HU610	30622015	○
4,18	4,18	152,4	50,8	4	SCD500-0418-4-4-118HA05-HU610	30622016	○
4,19	4,19	152,4	50,8	4	SCD500-0419-4-4-118HA05-HU610	30622017	○
4,20	4,20	152,4	50,8	4	SCD500-0420-4-4-118HA05-HU610	30622018	○
4,30	4,30	152,4	50,8	4	SCD500-0430-4-4-118HA05-HU610	30622019	○
4,40	4,40	152,4	50,8	4	SCD500-0440-4-4-118HA05-HU610	30622020	○
4,50	4,50	152,4	50,8	4	SCD500-0450-4-4-118HA05-HU610	30622021	○
4,60	4,60	152,4	50,8	4	SCD500-0460-4-4-118HA05-HU610	30622022	○

MEGA-Stack-Drill-Hand-CC

Solid carbide twist drill, long design

SCD50 (5xD)

ø 4,70 - 6,60

Dimensions					Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z			
4,70	4,70	152,4	50,8	4	SCD500-0470-4-4-118HA05-HU610	30622023	○
4,73	4,73	152,4	50,8	4	SCD500-0473-4-4-118HA05-HU610	30622024	○
4,75	4,75	152,4	50,8	4	SCD500-0475-4-4-118HA05-HU610	30622025	○
4,80	4,80	152,4	50,8	4	SCD500-0480-4-4-118HA05-HU610	30622026	○
4,82	4,82	152,4	50,8	4	SCD500-0482-4-4-118HA05-HU610	30622027	○
4,83	4,83	152,4	50,8	4	SCD500-0483-4-4-118HA05-HU610	30622028	○
4,84	4,84	152,4	50,8	4	SCD500-0484-4-4-118HA05-HU610	30622029	○
4,90	4,90	152,4	50,8	4	SCD500-0490-4-4-118HA05-HU610	30622030	○
5,00	5,00	152,4	50,8	4	SCD500-0500-4-4-118HA05-HU610	30622031	○
5,10	5,10	152,4	50,8	4	SCD500-0510-4-4-118HA05-HU610	30622032	○
5,14	5,14	152,4	50,8	4	SCD500-0514-4-4-118HA05-HU610	30622033	○
5,20	5,20	152,4	50,8	4	SCD500-0520-4-4-118HA05-HU610	30622034	○
5,30	5,30	152,4	50,8	4	SCD500-0530-4-4-118HA05-HU610	30622035	○
5,40	5,40	152,4	50,8	4	SCD500-0540-4-4-118HA05-HU610	30622036	○
5,46	5,46	152,4	50,8	4	SCD500-0546-4-4-118HA05-HU610	30622037	○
5,48	5,48	152,4	50,8	4	SCD500-0548-4-4-118HA05-HU610	30622038	○
5,50	5,50	152,4	50,8	4	SCD500-0550-4-4-118HA05-HU610	30622039	○
5,53	5,53	152,4	50,8	4	SCD500-0553-4-4-118HA05-HU610	30622040	○
5,55	5,55	152,4	50,8	4	SCD500-0555-4-4-118HA05-HU610	30622041	○
5,56	5,56	152,4	50,8	4	SCD500-0556-4-4-118HA05-HU610	30622042	○
5,57	5,57	152,4	50,8	4	SCD500-0557-4-4-118HA05-HU610	30622043	○
5,60	5,60	152,4	50,8	4	SCD500-0560-4-4-118HA05-HU610	30622044	○
5,70	5,70	152,4	50,8	4	SCD500-0570-4-4-118HA05-HU610	30622045	○
5,80	5,80	152,4	50,8	4	SCD500-0580-4-4-118HA05-HU610	30622046	○
5,90	5,90	152,4	50,8	4	SCD500-0590-4-4-118HA05-HU610	30622047	○
6,00	6,00	152,4	50,8	4	SCD500-0600-4-4-118HA05-HU610	30622048	○
6,10	6,10	152,4	50,8	4	SCD500-0610-4-4-118HA05-HU610	30622049	○
6,20	6,20	152,4	50,8	4	SCD500-0620-4-4-118HA05-HU610	30622050	○
6,24	6,24	152,4	50,8	4	SCD500-0624-4-4-118HA05-HU610	30622051	○
6,27	6,27	152,4	50,8	4	SCD500-0627-4-4-118HA05-HU610	30622052	○
6,30	6,30	152,4	50,8	4	SCD500-0630-4-4-118HA05-HU610	30622053	○
6,33	6,33	152,4	50,8	4	SCD500-0633-4-4-118HA05-HU610	30622054	○
6,34	6,34	152,4	50,8	4	SCD500-0634-4-4-118HA05-HU610	30622055	○
6,35	6,35	152,4	50,8	4	SCD500-0635-4-4-118HA05-HU610	30622056	○
6,36	6,36	152,4	50,8	4	SCD500-0636-4-4-118HA05-HU610	30622057	○
6,37	6,37	152,4	50,8	4	SCD500-0637-4-4-118HA05-HU610	30622058	○
6,38	6,38	152,4	50,8	4	SCD500-0638-4-4-118HA05-HU610	30622059	○
6,40	6,40	152,4	50,8	4	SCD500-0640-4-4-118HA05-HU610	30622060	○
6,50	6,50	152,4	50,8	4	SCD500-0650-4-4-118HA05-HU610	30622061	○
6,60	6,60	152,4	50,8	4	SCD500-0660-4-4-118HA05-HU610	30622062	○

MEGA-Stack-Drill-Hand-CC

Solid carbide twist drill, long design

SCD50 (5xD)

ø 6,67 - 9,51

Dimensions					Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z			
6,67	6,67	152,4	50,8	4	SCD500-0667-4-4-118HA05-HU610	30622063	○
6,70	6,70	152,4	50,8	4	SCD500-0670-4-4-118HA05-HU610	30622064	○
6,80	6,80	152,4	50,8	4	SCD500-0680-4-4-118HA05-HU610	30622065	○
6,90	6,90	152,4	50,8	4	SCD500-0690-4-4-118HA05-HU610	30622066	○
7,00	7,00	152,4	50,8	4	SCD500-0700-4-4-118HA05-HU610	30622067	○
7,10	7,10	152,4	50,8	4	SCD500-0710-4-4-118HA05-HU610	30622068	○
7,20	7,20	152,4	50,8	4	SCD500-0720-4-4-118HA05-HU610	30622069	○
7,30	7,30	152,4	50,8	4	SCD500-0730-4-4-118HA05-HU610	30622070	○
7,40	7,40	152,4	50,8	4	SCD500-0740-4-4-118HA05-HU610	30622071	○
7,50	7,50	152,4	50,8	4	SCD500-0750-4-4-118HA05-HU610	30622072	○
7,60	7,60	152,4	50,8	4	SCD500-0760-4-4-118HA05-HU610	30622073	○
7,70	7,70	152,4	50,8	4	SCD500-0770-4-4-118HA05-HU610	30622074	○
7,80	7,80	152,4	50,8	4	SCD500-0780-4-4-118HA05-HU610	30622075	○
7,82	7,82	152,4	50,8	4	SCD500-0782-4-4-118HA05-HU610	30622076	○
7,90	7,90	152,4	50,8	4	SCD500-0790-4-4-118HA05-HU610	30622077	○
7,92	7,92	152,4	50,8	4	SCD500-0792-4-4-118HA05-HU610	30622078	○
7,93	7,93	152,4	50,8	4	SCD500-0793-4-4-118HA05-HU610	30622079	○
7,94	7,94	152,4	50,8	4	SCD500-0794-4-4-118HA05-HU610	30622080	○
7,95	7,95	152,4	50,8	4	SCD500-0795-4-4-118HA05-HU610	30622081	○
7,96	7,96	152,4	50,8	4	SCD500-0796-4-4-118HA05-HU610	30622082	○
7,97	7,97	152,4	50,8	4	SCD500-0797-4-4-118HA05-HU610	30622083	○
8,00	8,00	152,4	50,8	4	SCD500-0800-4-4-118HA05-HU610	30622084	○
8,10	8,10	152,4	50,8	4	SCD500-0810-4-4-118HA05-HU610	30622085	○
8,20	8,20	152,4	50,8	4	SCD500-0820-4-4-118HA05-HU610	30622086	○
8,26	8,26	152,4	50,8	4	SCD500-0826-4-4-118HA05-HU610	30622087	○
8,30	8,30	152,4	50,8	4	SCD500-0830-4-4-118HA05-HU610	30622088	○
8,40	8,40	152,4	50,8	4	SCD500-0840-4-4-118HA05-HU610	30622089	○
8,50	8,50	152,4	50,8	4	SCD500-0850-4-4-118HA05-HU610	30622090	○
8,60	8,60	152,4	50,8	4	SCD500-0860-4-4-118HA05-HU610	30622091	○
8,70	8,70	152,4	50,8	4	SCD500-0870-4-4-118HA05-HU610	30622092	○
8,80	8,80	152,4	50,8	4	SCD500-0880-4-4-118HA05-HU610	30622093	○
8,90	8,90	152,4	50,8	4	SCD500-0890-4-4-118HA05-HU610	30622094	○
9,00	9,00	152,4	50,8	4	SCD500-0900-4-4-118HA05-HU610	30622095	○
9,10	9,10	152,4	50,8	4	SCD500-0910-4-4-118HA05-HU610	30622096	○
9,20	9,20	152,4	50,8	4	SCD500-0920-4-4-118HA05-HU610	30622097	○
9,30	9,30	152,4	50,8	4	SCD500-0930-4-4-118HA05-HU610	30622098	○
9,40	9,40	152,4	50,8	4	SCD500-0940-4-4-118HA05-HU610	30622099	○
9,44	9,44	152,4	50,8	4	SCD500-0944-4-4-118HA05-HU610	30622100	○
9,50	9,50	152,4	50,8	4	SCD500-0950-4-4-118HA05-HU610	30622101	○
9,51	9,51	152,4	50,8	4	SCD500-0951-4-4-118HA05-HU610	30622102	○

MEGA-Stack-Drill-Hand-CC

Solid carbide twist drill, long design
SCD50 (5xD)

ø 9,52 - 12,30

Dimensions					Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z			
9,52	9,52	152,4	50,8	4	SCD500-0952-4-4-118HA05-HU610	30622103	○
9,53	9,53	152,4	50,8	4	SCD500-0953-4-4-118HA05-HU610	30622104	●
9,54	9,54	152,4	50,8	4	SCD500-0954-4-4-118HA05-HU610	30622105	○
9,55	9,55	152,4	50,8	4	SCD500-0955-4-4-118HA05-HU610	30622106	○
9,60	9,60	152,4	50,8	4	SCD500-0960-4-4-118HA05-HU610	30622107	○
9,70	9,70	152,4	50,8	4	SCD500-0970-4-4-118HA05-HU610	30622108	○
9,80	9,80	152,4	50,8	4	SCD500-0980-4-4-118HA05-HU610	30622109	○
9,84	9,84	152,4	50,8	4	SCD500-0984-4-4-118HA05-HU610	30622110	○
9,90	9,90	152,4	50,8	4	SCD500-0990-4-4-118HA05-HU610	30622111	○
10,00	10,00	152,4	50,8	4	SCD500-1000-4-4-118HA05-HU610	30622112	●
10,10	10,00	152,4	50,8	4	SCD500-1010-4-4-118HA05-HU610	30622113	○
10,20	10,00	152,4	50,8	4	SCD500-1020-4-4-118HA05-HU610	30622114	○
10,30	10,00	152,4	50,8	4	SCD500-1030-4-4-118HA05-HU610	30622115	○
10,40	10,00	152,4	50,8	4	SCD500-1040-4-4-118HA05-HU610	30622116	○
10,50	10,00	152,4	50,8	4	SCD500-1050-4-4-118HA05-HU610	30622117	●
10,60	10,00	152,4	50,8	4	SCD500-1060-4-4-118HA05-HU610	30622118	○
10,70	10,00	152,4	50,8	4	SCD500-1070-4-4-118HA05-HU610	30622119	○
10,80	10,00	152,4	50,8	4	SCD500-1080-4-4-118HA05-HU610	30622120	○
10,90	10,00	152,4	50,8	4	SCD500-1090-4-4-118HA05-HU610	30622121	○
10,98	10,00	152,4	50,8	4	SCD500-1098-4-4-118HA05-HU610	30622122	○
11,00	10,00	152,4	50,8	4	SCD500-1100-4-4-118HA05-HU610	30622123	●
11,03	10,00	152,4	50,8	4	SCD500-1103-4-4-118HA05-HU610	30622124	○
11,10	10,00	152,4	50,8	4	SCD500-1110-4-4-118HA05-HU610	30622125	○
11,11	10,00	152,4	50,8	4	SCD500-1111-4-4-118HA05-HU610	30622126	●
11,12	10,00	152,4	50,8	4	SCD500-1112-4-4-118HA05-HU610	30622127	○
11,13	10,00	152,4	50,8	4	SCD500-1113-4-4-118HA05-HU610	30622128	○
11,14	10,00	152,4	50,8	4	SCD500-1114-4-4-118HA05-HU610	30622129	○
11,20	10,00	152,4	50,8	4	SCD500-1120-4-4-118HA05-HU610	30622130	○
11,30	10,00	152,4	50,8	4	SCD500-1130-4-4-118HA05-HU610	30622131	○
11,40	10,00	152,4	50,8	4	SCD500-1140-4-4-118HA05-HU610	30622132	○
11,43	10,00	152,4	50,8	4	SCD500-1143-4-4-118HA05-HU610	30622133	○
11,50	10,00	152,4	50,8	4	SCD500-1150-4-4-118HA05-HU610	30622134	●
11,60	10,00	152,4	50,8	4	SCD500-1160-4-4-118HA05-HU610	30622135	○
11,70	10,00	152,4	50,8	4	SCD500-1170-4-4-118HA05-HU610	30622136	○
11,80	10,00	152,4	50,8	4	SCD500-1180-4-4-118HA05-HU610	30622137	○
11,90	10,00	152,4	50,8	4	SCD500-1190-4-4-118HA05-HU610	30622138	○
12,00	10,00	152,4	50,8	4	SCD500-1200-4-4-118HA05-HU610	30622139	●
12,10	10,00	152,4	50,8	4	SCD500-1210-4-4-118HA05-HU610	30622140	○
12,20	10,00	152,4	50,8	4	SCD500-1220-4-4-118HA05-HU610	30622141	○
12,30	10,00	152,4	50,8	4	SCD500-1230-4-4-118HA05-HU610	30622142	○

MEGA-Stack-Drill-Hand-CC

Solid carbide twist drill, long design
SCD50 (5xD)

ø 12,40 - 13,02

Dimensions					Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z			
12,40	10,00	152,4	50,8	4	SCD500-1240-4-4-118HA05-HU610	30622143	○
12,50	10,00	152,4	50,8	4	SCD500-1250-4-4-118HA05-HU610	30622144	●
12,56	10,00	152,4	50,8	4	SCD500-1256-4-4-118HA05-HU610	30622145	○
12,60	10,00	152,4	50,8	4	SCD500-1260-4-4-118HA05-HU610	30622146	○
12,61	10,00	152,4	50,8	4	SCD500-1261-4-4-118HA05-HU610	30622147	○
12,69	10,00	152,4	50,8	4	SCD500-1269-4-4-118HA05-HU610	30622148	○
12,70	10,00	152,4	50,8	4	SCD500-1270-4-4-118HA05-HU610	30622149	●
12,71	10,00	152,4	50,8	4	SCD500-1271-4-4-118HA05-HU610	30622150	○
12,72	10,00	152,4	50,8	4	SCD500-1272-4-4-118HA05-HU610	30622151	○
12,73	10,00	152,4	50,8	4	SCD500-1273-4-4-118HA05-HU610	30622152	○
12,80	10,00	152,4	50,8	4	SCD500-1280-4-4-118HA05-HU610	30622153	○
12,90	10,00	152,4	50,8	4	SCD500-1290-4-4-118HA05-HU610	30622154	○
13,00	10,00	152,4	50,8	4	SCD500-1300-4-4-118HA05-HU610	30622155	●
13,02	10,00	152,4	50,8	4	SCD500-1302-4-4-118HA05-HU610	30622156	○





Milling cutter for modern materials

For the production of breakthroughs and pockets, for trimming the outer contours and for milling surfaces, ADD ENGINEERING offers solid carbide end milling cutters with a diamond coating and PCD and CVD-tipped milling cutters.

They impress with very good machining results. They prevent delamination at the edges produced on the parts and permit short machining times and long tool lives, without costly re-work.

[Milling cutter selection aid](#)

[Milling cutter product tables](#)

[Milling cutter arbors for face milling head PowerM...](#)

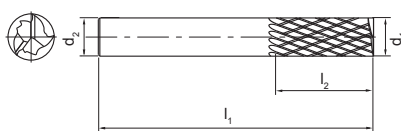
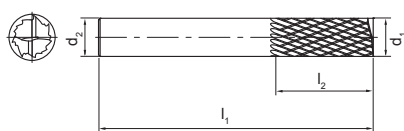
Selection assistant | Tool programm milling

			OptiMill-Composite-MT	OptiMill-Composite-Speed	OptiMill-Composite-Quadro	OptiMill-Composite-TwinCut	OptiMill-Composite-SF	OptiMill-Hardfoam	OptiMill-Thermoplastic	OptiMill-Thermoplastic-FR
Material			Material examples							
N	N1.1	Aluminium, non-alloyed and alloyed < 3 % Si	Alloy 2024, Alloy 7075, Al99							
	N3.1	Graphite								
	N4.1	Plastic, thermoplastic	PA, PE, PC, PS, PVC, PP, PTFE, POM, PMMA							
	N4.2	Plastic, thermosetting plastic (duroplast)	PU, PF, EP, UP, VE, CR							
	N4.3	Plastic, foam	EPS, PUR, PVC-E, PS-E, PP-E							
C	C1.1	Plastic matrix, aramid fibre reinforced plastic (AKF)	Nomex, Kevlar, Twaron, KOREX							
	C1.2	Plastic matrix (thermosetting), CFRP/GFRP	IMS, HTA							
	C1.3	Plastic matrix (thermoplastic), CFRP/GFRP	GMT-PP, PEEK							
	C2.1	Plastic matrix, carbon fiber reinforced (CFC)	CF222, CF225, CF226, CF227, CF260							
	C4.1	Sandwich construction, honeycomb core of paper								
	C4.2	Sandwich construction, honeycomb core of paper	PLASCORE PAMG-XR1 5052, PCGA-XR1 3003, PAMG-XR1 5056, Micro-Cell (Alloy Core of 5052/5056)							
	C4.3	Sandwich construction, honeycomb core of plastic and fibre composite materials	CORMASTER, TUBUS, KOREX, HFT-G, TPU, HFT, HRH (HRH-10, HRH-310, HRH-78, HRH-49, HRH-327), HDC-F							
	C4.4	Sandwich construction, core of rigid foam	AIREX R63, AIREX C70, ROHACELL IG-F							
	C5.1	Stack (hybrid structure) CFRP-aluminium	IMS/HTA + Alloy 2024/6061/7075							
S	S2.1	Titanium, titanium alloys	TiAl6V4							
	S4.1	Heat resistant super alloys, Ni, Co, and Fe based	Hardox, Hastelloy, Incoloy, Inconel, NIMONIC, Stellite, Waspaloy							
M	M1.1	Stainless steel, austenitic	X5CrNi18-10 (V2A), X6CrNiMoTi17-12-2 (V4A)							
	M1.2	Stainless steel, ferritic/austenitic (Duplex)	X2CrNiN23-4 (Alloy 2304), X2CrNiMoCuWN25-7-4, X2CrNiMoN22-5-3 (LDX 2404)							
Drill diameter			4,00-20,00	4,00-20,00	6,00-20,00	4,00-20,00	4,00-16,00	6,00-20,00	3,00-20,00	4,00-20,00
Drilling depth			Multi tooth	8	4	2	4	8	4	
Number of blades			-	0° - 8°	12,5°	0°	6°	0°	0°/3°	0°
Cutting material			Solid Carbide	Solid Carbide	Solid Carbide	Solid Carbide	Solid Carbide	Solid Carbide	Solid Carbide	Solid Carbide
Coating			uncoated	Diamond	Diamond	uncoated	uncoated	uncoated	uncoated	Diamond
Internal coolant supply				X				X		
External coolant supply			X	X	X	X	X		X	X
Shank form HA (to DIN 6535)			X	X	X	X	X	X	X	X
Shank form HB (to DIN 6535)										
Shank form HE (to DIN 6535)										
HSK-A 63										
Page			88	93	97	98	99	100	101	102

	OptiMill-Honeycomb	OptiMill-Composite-UD	OptiMill-Composite-Micro	OptiMill-Mono-Plastic	HP-EndMill-Composite-Trimming	HP-EndMill-Composite-Scarfing	OptiMill-Titan	OptiMill-Trochoid	OptiMill-SPM / CPMill-SPM	OptiMill-Diamond-SPM / CPMill-Diamond-SPM	PCD face milling cutter PowerFeed
											
											
											
											
											
											
											
											
											
											
											
											
											
											
	4,00-20,00	4,00-20,00	1,00-3,00	2,00-12,70	11,00-20,00	20,00	6,00-20,00	5,00-25,00	3,00-32,00	4,00-50,00	63,00-400,00
	8	2	Multi tooth	1	4	5	4	5	3	3 - 4	8 - 50
	15°	15°	-	25°	0°	4°	40°- 42°	41°- 42°	43°	9° - 17°	0°- 6°
	Solid Carbide uncoated	Solid Carbide Diamond	Solid Carbide Diamond	Solid Carbide uncoated	PCD -	PCD -	Solid Carbide uncoated	Solid Carbide coated	Solid Carbide uncoated	PCD -	PCD -
	X	X	X	X	X	X	X	X	X	X	X
	X	X	X	X	X	X			X	X	
							X	X			
										X	
	103	104	106	107	109	109	110	112-114	115-118	116-119	122

OptiMill®-Composite-MT

Solid carbide multi-tooth milling cutter
SCM40



Design:
Mill diameter: 4,00 – 20,00 mm
Shank form: HA (DIN 6535)
Coating: uncoated
(Diamond coating on request)
Number of blades: multi-tooth
Point geometry: 180°

Medium tooth, pulling

Application: Medium tooth for CFRP / GFRP > 40 % portion of fibres,
pulling cut primarily suitable for roughing thinner materials

Dimensions					Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z			
4,00	4	50	16	Multi-tooth	SCM400-0400ZMVR-S-HA-HU211	30402599	●
5,00	5	50	16	Multi-tooth	SCM400-0500ZMVR-S-HA-HU211	30402600	●
5,00	5	75	16	Multi-tooth	SCM400-0500ZMVR-S-HA-HU211	30402601	●
6,00	6	60	19	Multi-tooth	SCM400-0600ZMVR-S-HA-HU211	30402602	●
6,00	6	75	30	Multi-tooth	SCM400-0600ZMVR-S-HA-HU211	30402603	●
8,00	8	63	25	Multi-tooth	SCM400-0800ZMVR-S-HA-HU211	30402604	●
8,00	8	75	35	Multi-tooth	SCM400-0800ZMVR-S-HA-HU211	30402605	●
10,00	10	72	25	Multi-tooth	SCM400-1000ZMVR-S-HA-HU211	30402606	●
12,00	12	83	32	Multi-tooth	SCM400-1200ZMVR-S-HA-HU211	30402607	●
16,00	16	92	36	Multi-tooth	SCM400-1600ZMVR-S-HA-HU211	30402608	●
20,00	20	104	45	Multi-tooth	SCM400-2000ZMVR-S-HA-HU211	30402609	●

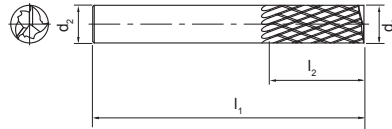
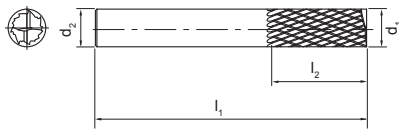
Coarse tooth, pulling

Application: Coarse tooth for CFRP / GFRP < 40 % portion of fibres,
pulling cut primarily suitable for roughing thicker materials.

Dimensions					Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z			
4,00	4	50	16	Multi-tooth	SCM400-0400ZGVR-S-HA-HU211	30402610	●
5,00	5	50	16	Multi-tooth	SCM400-0500ZGVR-S-HA-HU211	30402611	●
5,00	5	75	16	Multi-tooth	SCM400-0500ZGVR-S-HA-HU211	30402612	●
6,00	6	60	19	Multi-tooth	SCM400-0600ZGVR-S-HA-HU211	30402613	●
6,00	6	75	30	Multi-tooth	SCM400-0600ZGVR-S-HA-HU211	30402614	●
8,00	8	63	25	Multi-tooth	SCM400-0800ZGVR-S-HA-HU211	30402615	●
8,00	8	75	35	Multi-tooth	SCM400-0800ZGVR-S-HA-HU211	30402616	●
10,00	10	72	25	Multi-tooth	SCM400-1000ZGVR-S-HA-HU211	30402617	●
12,00	12	83	32	Multi-tooth	SCM400-1200ZGVR-S-HA-HU211	30402618	●
16,00	16	92	36	Multi-tooth	SCM400-1600ZGVR-S-HA-HU211	30402619	●
20,00	20	104	45	Multi-tooth	SCM400-2000ZGVR-S-HA-HU211	30402620	●

OptiMill®-Composite-MT

Solid carbide multi-tooth milling cutter
SCM41



Design:
Mill diameter: 4,00 - 10,00 mm
Shank form: HA (DIN 6535)
Coating: uncoated
(Diamond coating on request)
Number of blades: Multi-tooth
Point geometry: 180°

Medium tooth, pushing

Application: Medium tooth for CFRP > 40 % portion of fibres,
pushing cut primarily suitable for roughing thinner materials.

Dimensions					Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z			
4,00	4	50	16	Multi-tooth	SCM410-0400ZMVR-S-HA-HU211	30402621	●
5,00	5	50	16	Multi-tooth	SCM410-0500ZMVR-S-HA-HU211	30402622	●
6,00	6	60	19	Multi-tooth	SCM410-0600ZMVR-S-HA-HU211	30402623	●
10,00	10	72	25	Multi-tooth	SCM410-1000ZMVR-S-HA-HU211	30402624	●

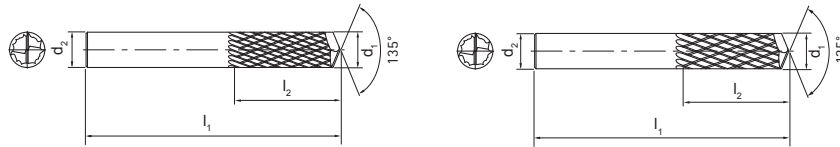
Coarse tooth, pushing

Application: Coarse tooth for CFRP < 40 % portion of fibres,
pushing cut primarily suitable for roughing thicker materials.

Dimensions					Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z			
4,00	4	50	16	Multi-tooth	SCM410-0400ZGVR-S-HA-HU211	30402625	●
5,00	5	50	16	Multi-tooth	SCM410-0500ZGVR-S-HA-HU211	30402626	●
6,00	6	60	19	Multi-tooth	SCM410-0600ZGVR-S-HA-HU211	30402627	●
10,00	10	72	25	Multi-tooth	SCM410-1000ZGVR-S-HA-HU211	30402628	●

OptiMill®-Composite-MT

Solid carbide multi-tooth milling cutter with drill point
SCM42



Design:

Mill diameter: 4,00 - 20,00 mm
Shank form: HA (DIN 6535)
Coating: uncoated
(Diamond coating on request)
Number of blades: Multi-tooth
Point geometry: 135° drill point

Medium tooth, pulling

Application: Medium tooth for CFRP / GFRP > 40 % portion of fibres,
pulling cut primarily suitable for roughing thinner materials

Dimensions					Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z			
4,00	4	50	16	Multi-tooth	SCM420-0400ZMVR-S-HA-HU211	30402629	●
5,00	5	50	16	Multi-tooth	SCM420-0500ZMVR-S-HA-HU211	30402630	●
5,00	5	75	16	Multi-tooth	SCM420-0500ZMVR-S-HA-HU211	30402631	●
6,00	6	60	19	Multi-tooth	SCM420-0600ZMVR-S-HA-HU211	30402632	●
6,00	6	75	30	Multi-tooth	SCM420-0600ZMVR-S-HA-HU211	30402633	●
8,00	8	60	25	Multi-tooth	SCM420-0800ZMVR-S-HA-HU211	30402634	●
8,00	8	75	35	Multi-tooth	SCM420-0800ZMVR-S-HA-HU211	30402635	●
10,00	10	72	30	Multi-tooth	SCM420-1000ZMVR-S-HA-HU211	30402636	●
12,00	12	83	32	Multi-tooth	SCM420-1200ZMVR-S-HA-HU211	30402637	●
16,00	16	92	36	Multi-tooth	SCM420-1600ZMVR-S-HA-HU211	30402638	●
20,00	20	104	45	Multi-tooth	SCM420-2000ZMVR-S-HA-HU211	30402639	●

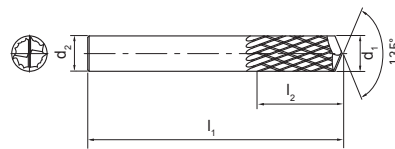
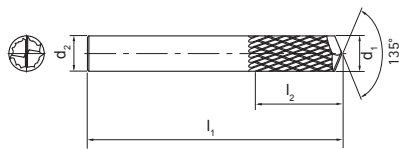
Coarse tooth, pulling

Application: Coarse tooth for CFRP / GFRP < 40 % portion of fibres,
pulling cut primarily suitable for roughing thicker materials.

Dimensions					Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z			
4,00	4	50	16	Multi-tooth	SCM420-0400ZGVR-S-HA-HU211	30402640	●
5,00	5	50	16	Multi-tooth	SCM420-0500ZGVR-S-HA-HU211	30402641	●
5,00	5	75	16	Multi-tooth	SCM420-0500ZGVR-S-HA-HU211	30402642	●
6,00	6	60	19	Multi-tooth	SCM420-0600ZGVR-S-HA-HU211	30402643	●
6,00	6	75	30	Multi-tooth	SCM420-0600ZGVR-S-HA-HU211	30402644	●
8,00	8	60	25	Multi-tooth	SCM420-0800ZGVR-S-HA-HU211	30402645	●
8,00	8	75	35	Multi-tooth	SCM420-0800ZGVR-S-HA-HU211	30402646	●
10,00	10	72	30	Multi-tooth	SCM420-1000ZGVR-S-HA-HU211	30402647	●
12,00	12	83	32	Multi-tooth	SCM420-1200ZGVR-S-HA-HU211	30402648	●
16,00	16	92	36	Multi-tooth	SCM420-1600ZGVR-S-HA-HU211	30402649	●
20,00	20	104	45	Multi-tooth	SCM420-2000ZGVR-S-HA-HU211	30402650	●

OptiMill®-Composite-MT

Solid carbide multi-tooth milling cutter with drill point
SCM43



Design:

Mill diameter:

4,00 - 10,00 mm

Shank form:

HA (DIN 6535)

Coating:

uncoated
(Diamond coating on request)

Number of blades:

Multi-tooth

Point geometry:

135°

Medium tooth, pushing

Application: Medium tooth for CFRP / GFRP > 40 % portion of fibres,
pushing cut primarily suitable for roughing thinner materials.

Dimensions					Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z			
4,00	4	50	16	Multi-tooth	SCM430-0400ZMVR-S-HA-HU211	30402651	●
5,00	5	50	16	Multi-tooth	SCM430-0500ZMVR-S-HA-HU211	30402652	●
6,00	6	60	19	Multi-tooth	SCM430-0600ZMVR-S-HA-HU211	30402653	●
10,00	10	72	25	Multi-tooth	SCM430-1000ZMVR-S-HA-HU211	30402654	●

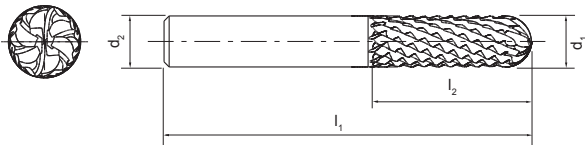
Coarse tooth, pushing

Application: Coarse tooth for CFRP / GFRP < 40 % portion of fibres,
pushing cut primarily suitable for roughing thicker materials.

Dimensions					Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z			
4,00	4	50	16	Multi-tooth	SCM430-0400ZGVR-S-HA-HU211	30402655	●
5,00	5	50	16	Multi-tooth	SCM430-0500ZGVR-S-HA-HU211	30402656	●
6,00	6	60	19	Multi-tooth	SCM430-0600ZGVR-S-HA-HU211	30402657	●
10,00	10	72	25	Multi-tooth	SCM430-1000ZGVR-S-HA-HU211	30402658	●

OptiMill®-Composite-MT

Solid carbide multi-tooth milling cutter with radius
SCM44



Design:

Mill diameter:

Shank form:

Coating:

Number of blades:

Point geometry:

4,00 - 20,00 mm

HA (DIN 6535)

uncoated

(Diamond coating on request)

Multi-tooth

Radius

Medium tooth, pulling

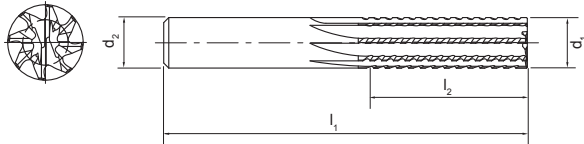
Application: Medium tooth for CFRP/GFRP > 40 % portion of fibres,
pulling cut primarily suitable for roughing thin materials

Dimensions					Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z			
4,00	4	50	19	Multi-tooth	SCM440-0400ZMVR-S-HA-HU211	30402659	●
5,00	5	50	19	Multi-tooth	SCM440-0500ZMVR-S-HA-HU211	30402660	●
5,00	5	75	19	Multi-tooth	SCM440-0500ZMVR-S-HA-HU211	30402661	●
6,00	6	60	22	Multi-tooth	SCM440-0600ZMVR-S-HA-HU211	30402662	●
6,00	6	75	33	Multi-tooth	SCM440-0600ZMVR-S-HA-HU211	30402663	●
8,00	8	63	29	Multi-tooth	SCM440-0800ZMVR-S-HA-HU211	30402664	●
8,00	8	75	39	Multi-tooth	SCM440-0800ZMVR-S-HA-HU211	30402665	●
10,00	10	72	30	Multi-tooth	SCM440-1000ZMVR-S-HA-HU211	30402666	●
12,00	12	83	38	Multi-tooth	SCM440-1200ZMVR-S-HA-HU211	30402667	●
16,00	16	92	44	Multi-tooth	SCM440-1600ZMVR-S-HA-HU211	30402668	●
20,00	20	104	55	Multi-tooth	SCM440-2000ZMVR-S-HA-HU211	30402669	●

OptiMill®-Composite-Speed

Solid carbide milling cutter

SCM45



Design:

Mill diameter:	4,00 - 20,00 mm
Shank form:	HA
Coating:	Diamond
Number of blades:	8
Point geometry:	Face cutting
Helix angle:	0°

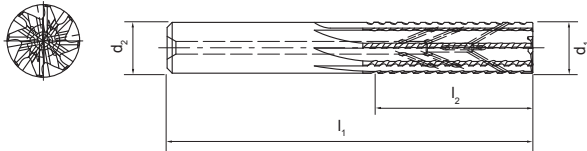
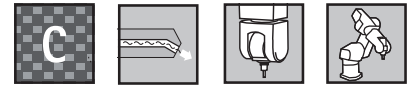
Straight

Application: Roughing and finishing CFRP in one machining step, neutral cut

Dimensions					Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z			
4,00	6	60	16	8	SCM450-0400Z08R-F0008HA-HC619	30402670	●
5,00	6	60	18	8	SCM450-0500Z08R-F0010HA-HC619	30402671	●
6,00	6	75	28	8	SCM450-0600Z08R-F0012HA-HC619	30402672	●
8,00	8	75	32	8	SCM450-0800Z08R-F0016HA-HC619	30402673	●
10,00	10	72	32	8	SCM450-1000Z08R-F0020HA-HC619	30402674	●
12,00	12	83	32	8	SCM450-1200Z08R-F0020HA-HC619	30402675	●
16,00	16	92	36	8	SCM450-1600Z08R-F0020HA-HC611	30402676	●
20,00	20	104	45	8	SCM450-2000Z08R-F0020HA-HC611	30402677	●

OptiMill®-Composite-Speed

Solid carbide milling cutter, internal coolant supply
SCM45



Design:

Mill diameter:	6,00 – 20,00 mm
Shank form:	HA
Coating:	Diamond
Number of blades:	8
Point geometry:	Face cutting
Helix angle:	0°

Straight

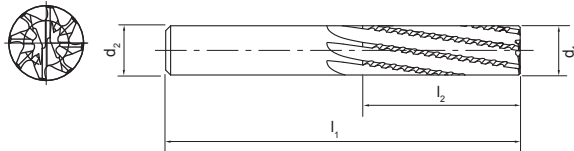
Application: Roughing and finishing CFRP in one machining step, neutral cut

Dimensions					Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z			
6,00	6	75	28	8	SCM451-0600Z08R-F0012HA-HC619	30402678	●
8,00	8	75	32	8	SCM451-0800Z08R-F0016HA-HC619	30402679	●
10,00	10	72	32	8	SCM451-1000Z08R-F0020HA-HC619	30402680	●
12,00	12	83	32	8	SCM451-1200Z08R-F0020HA-HC619	30402681	●
16,00	16	92	36	8	SCM451-1600Z08R-F0020HA-HC611	30402682	●
20,00	20	104	45	8	SCM451-2000Z08R-F0020HA-HC611	30402683	●

OptiMill®-Composite-Speed

Solid carbide milling cutter

SCM46



Design:

Mill diameter:	4,00 - 20,00 mm
Shank form:	HA
Coating:	Diamond
Number of blades:	8
Point geometry:	Face cutting
Helix angle:	8°

Pulling

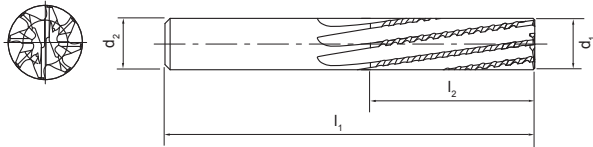
Application: Roughing and finishing CFRP in one machining step, pulling cut

Dimensions					Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z			
4,00	6	60	16	8	SCM460-0400Z08R-F0008HA-HC619	30402684	●
5,00	6	60	18	8	SCM460-0500Z08R-F0010HA-HC619	30402685	●
6,00	6	75	28	8	SCM460-0600Z08R-F0012HA-HC619	30402686	●
8,00	8	75	32	8	SCM460-0800Z08R-F0016HA-HC619	30402687	●
10,00	10	72	32	8	SCM460-1000Z08R-F0020HA-HC619	30402688	●
12,00	12	83	32	8	SCM460-1200Z08R-F0020HA-HC619	30402689	●
16,00	16	92	36	8	SCM460-1600Z08R-F0020HA-HC611	30402690	●
20,00	20	104	45	8	SCM460-2000Z08R-F0020HA-HC611	30402691	●

OptiMill®-Composite-Speed

Solid carbide milling cutter

SCM47



Design:

Mill diameter:	4,00 – 20,00 mm
Shank form:	HA
Coating:	Diamond
Number of blades:	8
Point geometry:	Face cutting
Helix angle:	-8°

Pushing

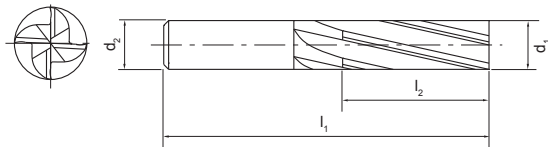
Application: Roughing and finishing CFRP in one machining step, pushing cut

Dimensions					Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z			
4,00	6	60	16	8	SCM470-0400Z08R-F0008HA-HC619	30402692	●
5,00	6	60	18	8	SCM470-0500Z08R-F0010HA-HC619	30402693	●
6,00	6	75	28	8	SCM470-0600Z08R-F0012HA-HC619	30402694	●
8,00	8	75	32	8	SCM470-0800Z08R-F0016HA-HC619	30402695	●
10,00	10	72	32	8	SCM470-1000Z08R-F0020HA-HC619	30402696	●
12,00	12	83	32	8	SCM470-1200Z08R-F0020HA-HC619	30402697	●
16,00	16	92	36	8	SCM470-1600Z08R-F0020HA-HC611	30402698	●
20,00	20	104	45	8	SCM470-2000Z08R-F0020HA-HC611	30402699	●

OptiMill®-Composite-Quadro

Solid carbide milling cutter

SCM48



Design:

Mill diameter:	6,00 - 20,00 mm
Shank form:	HA
Coating:	Diamond
Number of blades:	4
Point geometry:	Face cutting
Helix angle:	12,5°

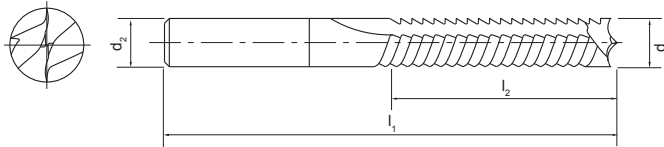
Application: For finishing CFRP / GFRP parts with high surface finish requirements

Dimensions					Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z			
6,00	6	63,5	25	4	SCM480-0600Z04R-S-HA-HC619	30402700	○
6,35	6,35	63,5	25,4	4	SCM480-06350Z04R-S-HA-HC619	30402701	○
8,00	8	75	30	4	SCM480-0800Z04R-S-HA-HC619	30402702	○
9,53	9,53	63,5	28,58	4	SCM480-09525Z04R-S-HA-HC619	30402703	○
10,00	10	92	40	4	SCM480-1000Z04R-S-HA-HC619	30402704	●
12,00	12	97	40	4	SCM480-1200Z04R-S-HA-HC619	30402705	●
16,00	16	100	40	4	SCM480-1600Z04R-S-HA-HC619	30402706	●
20,00	20	104	42	4	SCM480-2000Z04R-S-HA-HC611	30402707	●

OptiMill®-Composite-TwinCut

HSC milling cutter for aramide

SCM49



Design:

Mill diameter:

4,00 – 20,00 mm

Shank form:

HA

Coating:

uncoated

Number of blades:

2 - Alternating

Point geometry:

(180°)

Helix angle:

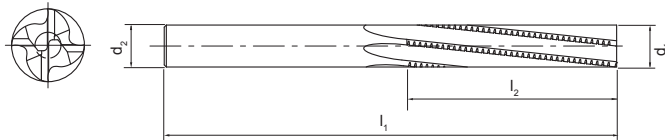
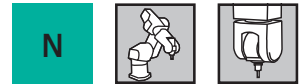
0°

Application: Kevlar parts

Dimensions					Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z			
4,00	4	75	20	2	SCM490-0400Z02R-S-HA-HU610	30402708	●
5,00	5	75	25	2	SCM490-0500Z02R-S-HA-HU610	30402709	○
6,00	6	100	35	2	SCM490-0600Z02R-S-HA-HU610	30402710	●
8,00	8	100	40	2	SCM490-0800Z02R-S-HA-HU610	30402711	●
10,00	10	125	50	2	SCM490-1000Z02R-S-HA-HU610	30402712	●
12,00	12	125	60	2	SCM490-1200Z02R-S-HA-HU610	30402713	○
16,00	16	150	75	2	SCM490-1600Z02R-S-HA-HU610	30402714	○
20,00	20	104	45	2	SCM490-2000Z02R-S-HA-HU610	30402715	○

OptiMill®-Composite-SF

HSC milling cutter for soft foam
SCM50



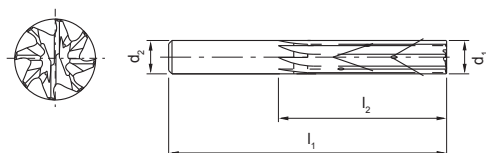
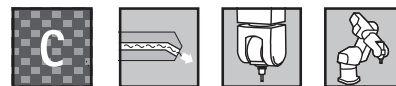
Design:
 Mill diameter: 4,00 - 16,00 mm
 Shank form: HA
 Coating: uncoated
 Number of blades: 4
 Point geometry: 180°
 Helix angle: 6°

Application: Soft foam

Dimensions					Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z			
4,00	4	60	25	4	SCM500-0400Z04R-S-HA-HU210	30402716	●
6,00	6	64,7	30	4	SCM500-0600Z04R-S-HA-HU210	30402717	●
8,00	8	75	30	4	SCM500-0800Z04R-S-HA-HU210	30402718	●
12,00	12	83	32	4	SCM500-1200Z04R-S-HA-HU210	30402719	○
16,00	16	92	36	4	SCM500-1600Z04R-S-HA-HU210	30402720	○

OptiMill®-Hardfoam

Solid carbide milling cutter, internal coolant supply
SCM64



Design:
 Mill diameter: 3,00 – 20,00 mm
 Shank form: HA
 Coating: uncoated
 Number of blades: 8
 Point geometry: Specific lead geometry
 Helix angle: 0°

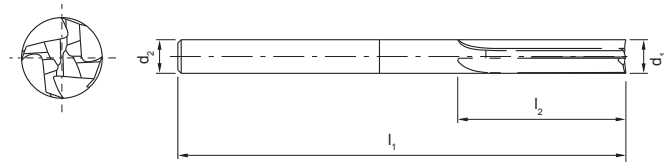
Application: Hard foam

Dimensions					C	Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z				
6,00	6	57	13	8	0,03	SCM641-0600Z08R-F0003HA-HU610	30602396	●
6,35	8	63	13	8	0,03	SCM641-0635Z08R-F0003HA-HU610	30602397	○
8,00	8	63	19	8	0,04	SCM641-0800Z08R-F0004HA-HU610	30602398	●
9,53	10	72	22	8	0,05	SCM641-0953Z08R-F0005HA-HU610	30602399	○
10,00	10	72	22	8	0,05	SCM641-1000Z08R-F0005HA-HU610	30602400	●
12,00	12	83	26	8	0,06	SCM641-1200Z08R-F0005HA-HU610	30602401	○
16,00	16	92	32	8	0,08	SCM641-1600Z08R-F0005HA-HU610	30602402	○
20,00	20	104	38	8	0,10	SCM641-2000Z08R-F0005HA-HU610	30602403	○

OptiMill®-Thermoplastic

Solid carbide milling cutter

SCM51



Design:

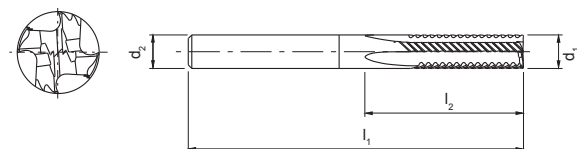
Mill diameter:	3,00 – 20,00 mm
Shank form:	HA
Coating:	uncoated
Number of blades:	4
Point geometry:	Specific lead geometry
Helix angle:	0°/3°

Application: Thermoplastic

Dimensions					C	Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z				
3,00	6	57	8	4	0,02	SCM510-0300Z04R-F0002HA-HU610	30602327	○
4,00	6	57	11	4	0,02	SCM510-0400Z04R-F0002HA-HU610	30602328	●
5,00	6	57	13	4	0,03	SCM510-0500Z04R-F0003HA-HU610	30602329	○
6,00	6	57	13	4	0,03	SCM510-0600Z04R-F0003HA-HU610	30602330	●
6,35	8	63	13	4	0,03	SCM510-0635Z04R-F0003HA-HU610	30602331	○
8,00	8	63	19	4	0,04	SCM510-0800Z04R-F0004HA-HU610	30602332	●
9,53	10	72	22	4	0,05	SCM510-0953Z04R-F0005HA-HU610	30602333	○
10,00	10	72	22	4	0,05	SCM510-1000Z04R-F0005HA-HU610	30602334	●
12,00	12	83	26	4	0,06	SCM510-1200Z04R-F0006HA-HU610	30602335	○
16,00	16	92	32	4	0,08	SCM510-1600Z04R-F0008HA-HU610	30602336	○
20,00	20	104	38	4	0,10	SCM510-2000Z04R-F0010HA-HU610	30602337	○

OptiMill®-Thermoplastic-FR

Solid carbide milling cutter
SCM61



Design:

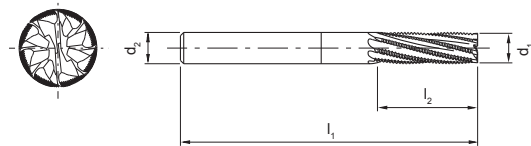
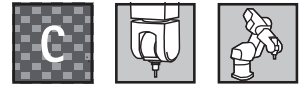
Mill diameter:	4,00 – 20,00 mm
Shank form:	HA
Coating:	Diamond
Number of blades:	4
Point geometry:	Specific lead geometry
Helix angle:	0°

Application: Plastics material (thermoplastic) CFRP/GFRP

Dimensions					C	Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z				
4,00	6	57	11	4	0,02	SCM610-0400Z04R-F0002HA-HC614	30602339	●
5,00	6	57	13	4	0,03	SCM610-0500Z04R-F0003HA-HC614	30602340	○
6,00	6	57	13	4	0,03	SCM610-0600Z04R-F0003HA-HC614	30602341	●
6,35	8	63	13	4	0,03	SCM610-0635Z04R-F0003HA-HC614	30602342	○
8,00	8	63	19	4	0,04	SCM610-0800Z04R-F0004HA-HC614	30602343	●
9,53	10	72	22	4	0,05	SCM610-0953Z04R-F0005HA-HC614	30602344	○
10,00	10	72	22	4	0,05	SCM610-1000Z04R-F0005HA-HC614	30602345	●
12,00	12	83	26	4	0,06	SCM610-1200Z04R-F0006HA-HC614	30602346	○
16,00	16	92	32	4	0,08	SCM610-1600Z04R-F0008HA-HC614	30602347	○
20,00	20	104	38	4	0,10	SCM610-2000Z04R-F0010HA-HC614	30602348	○

OptiMill®-Honeycomb

Solid carbide milling cutter
SCM62



Design:

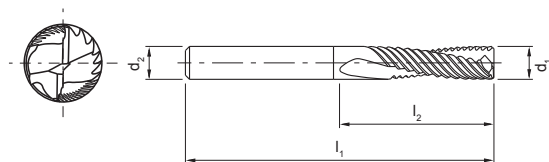
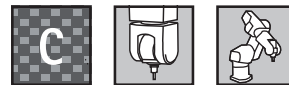
Mill diameter: 4,00 – 20,00 mm
Shank form: HA
Coating: uncoated
Number of blades: 8
Point geometry: Specific lead geometry
Helix angle: 15°

Application: Honeycomb without surface layer

Dimensions					C	Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z				
4,00	6	57	11	8	0,02	SCM620-0400Z08R-F0002HA-HU607	30602350	●
5,00	6	57	13	8	0,03	SCM620-0500Z08R-F0003HA-HU607	30602351	○
6,00	6	57	13	8	0,03	SCM620-0600Z08R-F0003HA-HU607	30602352	●
6,35	8	63	13	8	0,03	SCM620-0635Z08R-F0003HA-HU607	30602353	○
8,00	8	63	19	8	0,04	SCM620-0800Z08R-F0004HA-HU607	30602354	●
9,53	10	72	22	8	0,05	SCM620-0953Z08R-F0005HA-HU607	30602355	○
10,00	10	72	22	8	0,05	SCM620-1000Z08R-F0005HA-HU607	30602356	●
12,00	12	83	26	8	0,06	SCM620-1200Z08R-F0006HA-HU607	30602357	○
16,00	16	92	32	8	0,08	SCM620-1600Z08R-F0008HA-HU607	30602358	○
20,00	20	104	38	8	0,10	SCM620-2000Z08R-F0010HA-HU607	30602359	○

OptiMill®-Composite-UD

Solid carbide milling cutter
SCM66



Design:

Mill diameter: 4,00 – 20,00 mm
Shank form: HA
Coating: Diamond
Number of blades: 2
Point geometry: Specific lead geometry
Helix angle: 15°

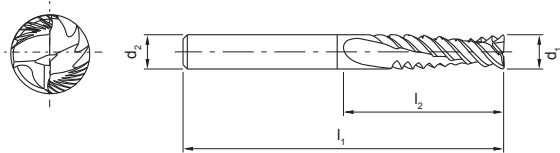
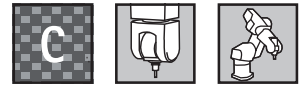
Medium tooth

Application: Medium toothing for CFRP/GFRP > 40 % fibre content push and pull cut, primarily suited for milling thin materials.

Dimensions					C	Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z				
4,00	6	57	11	2	0,02	SCM660-0400Z02R-F0002HA-HC622	30602383	●
5,00	6	57	13	2	0,03	SCM660-0500Z02R-F0003HA-HC622	30602384	○
6,00	6	57	13	2	0,03	SCM660-0600Z02R-F0003HA-HC622	30602385	●
6,35	8	63	13	2	0,03	SCM660-0635Z02R-F0003HA-HC622	30602386	○
8,00	8	63	19	2	0,04	SCM660-0800Z02R-F0004HA-HC622	30602387	●
9,53	10	72	22	2	0,05	SCM660-0953Z02R-F0005HA-HC622	30602388	○
10,00	10	72	22	2	0,05	SCM660-1000Z02R-F0005HA-HC622	30602389	●
12,00	12	83	26	2	0,06	SCM660-1200Z02R-F0006HA-HC622	30602390	○
16,00	16	92	32	2	0,08	SCM660-1600Z02R-F0008HA-HC622	30602391	○
20,00	20	104	38	2	0,10	SCM660-2000Z02R-F0010HA-HC622	30602392	○

OptiMill®-Composite-UD

Solid carbide milling cutter
SCM65



Design:

Mill diameter: 6,00 – 20,00 mm
Shank form: HA
Coating: Diamond
Number of blades: 2
Point geometry: Specific lead geometry
Helix angle: 15°

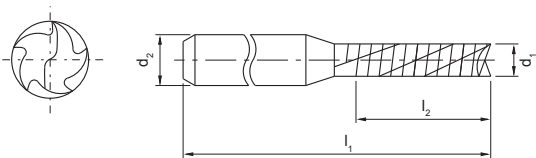
Coarse tooth

Application: Coarse toothing for CFRP/GFRP > 40 % fibre content push and pull cut, primarily suited for milling thick materials.

Dimensions					C	Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z				
6,00	6	57	13	2	0,03	SCM650-0600Z02R-F0003HA-HC622	30602374	●
6,35	8	63	13	2	0,03	SCM650-0635Z02R-F0003HA-HC622	30602375	○
8,00	8	63	19	2	0,04	SCM650-0800Z02R-F0004HA-HC622	30602376	●
9,53	10	72	22	2	0,05	SCM650-0953Z02R-F0005HA-HC622	30602377	○
10,00	10	72	22	2	0,05	SCM650-1000Z02R-F0005HA-HC622	30602378	●
12,00	12	83	26	2	0,06	SCM650-1200Z02R-F0006HA-HC622	30602379	○
16,00	16	92	32	2	0,08	SCM650-1600Z02R-F0008HA-HC622	30602380	○
20,00	20	104	38	2	0,10	SCM650-2000Z02R-F0010HA-HC622	30602381	○

OptiMill®-Composite-Micro

Solid carbide multi-tooth milling cutter
SCM56



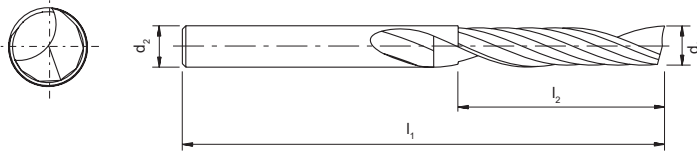
Design:
Mill diameter: 1,00 - 3,00 mm
Shank form: HA
Coating: Diamond
Number of blades: Multi-tooth
Point geometry: Specific lead geometry

Application: CFRP/GFRP

Dimensions					Specification	Order number	
d ₁	d ₂	l ₁	l ₂	z			
1,00	3,00	38,00	5	Multi-tooth	SCM560-0100ZMGR-S-HA-HC620	30504698	●
2,00	3,00	38,00	9	Multi-tooth	SCM560-0200ZMGR-S-HA-HC620	30504700	●
3,00	3,00	38,00	9	Multi-tooth	SCM560-0300ZMGR-S-HA-HC620	30504702	●

OptiMill®-Mono-Plastic Type 100R

Solid carbide milling cutter
SCM33



Design:

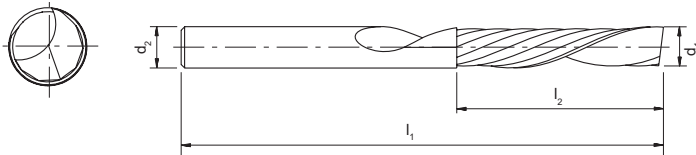
Mill diameter: 2,00 - 12,70 mm
Shank form: HA (DIN 6535)
Coating: uncoated
Number of blades: 1, right-hand helix groove

Application: Especially for milling of plastics.

Dimensions					Shank form HA		
d ₁	d ₂	l ₁	l ₂	z	Specification	Order number	
2,00	3,00	38	8	1	SCM330-0200Z01R-S-HA-HU211	30393650	○
2,50	3,00	38	8	1	SCM330-0250Z01R-S-HA-HU211	30393651	○
3,00	3,00	38	10	1	SCM330-0300Z01R-S-HA-HU211	30393652	○
3,00	4,00	38	10	1	SCM330-0300Z01R-S-HA-HU211	30393653	○
3,00	4,00	50	15	1	SCM330-0300Z01R-S-HA-HU211	30393654	○
3,00	6,00	50	10	1	SCM330-0300Z01R-S-HA-HU211	30393655	○
3,17	6,35	38	13	1	SCM330-0317Z01R-S-HA-HU211	30393656	○
3,17	4,76	38	13	1	SCM330-0317Z01R-S-HA-HU211	30393657	○
3,17	3,17	51	13	1	SCM330-0317Z01R-S-HA-HU211	30393658	○
4,00	4,00	40	12	1	SCM330-0400Z01R-S-HA-HU211	30393659	○
4,00	4,00	60	20	1	SCM330-0400Z01R-S-HA-HU211	30393660	○
4,00	4,00	70	30	1	SCM330-0400Z01R-S-HA-HU211	30393661	○
4,00	6,00	50	15	1	SCM330-0400Z01R-S-HA-HU211	30393662	○
4,00	4,00	50	13	1	SCM330-0400Z01R-S-HA-HU211	30393663	○
4,76	4,76	51	16	1	SCM330-0476Z01R-S-HA-HU211	30393664	○
5,00	5,00	50	16	1	SCM330-0500Z01R-S-HA-HU211	30393665	○
5,00	5,00	70	30	1	SCM330-0500Z01R-S-HA-HU211	30393666	○
5,00	5,00	60	15	1	SCM330-0500Z01R-S-HA-HU211	30393667	○
5,00	6,00	50	16	1	SCM330-0500Z01R-S-HA-HU211	30393668	○
6,00	6,00	60	21	1	SCM330-0600Z01R-S-HA-HU211	30393669	○
6,00	6,00	70	30	1	SCM330-0600Z01R-S-HA-HU211	30393670	○
6,00	6,00	80	38	1	SCM330-0600Z01R-S-HA-HU211	30393671	○
6,35	6,35	51	19	1	SCM330-0635Z01R-S-HA-HU211	30393672	○
6,35	6,35	77	38	1	SCM330-0635Z01R-S-HA-HU211	30393673	○
8,00	8,00	60	25	1	SCM330-0800Z01R-S-HA-HU211	30393674	○
8,00	8,00	80	38	1	SCM330-0800Z01R-S-HA-HU211	30393675	○
9,52	9,52	77	29	1	SCM330-0952Z01R-S-HA-HU211	30393676	○
10,00	10,00	75	30	1	SCM330-1000Z01R-S-HA-HU211	30393677	○
10,00	10,00	75	20	1	SCM330-1000Z01R-S-HA-HU211	30393678	○
12,00	12,00	75	30	1	SCM330-1200Z01R-S-HA-HU211	30393679	○
12,70	12,70	77	32	1	SCM330-1270Z01R-S-HA-HU211	30393680	○

OptiMill®-Mono-Plastic Type 100L

Solid carbide milling cutter
SCM33



Design:

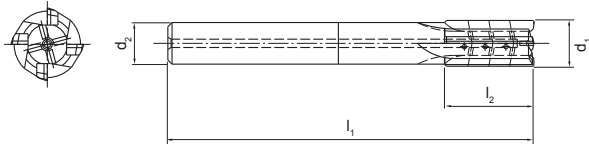
Mill diameter:	2,00 – 10,00 mm
Shank form:	HA (DIN 6535)
Coating:	uncoated
Number of blades:	1, Left-hand helix groove

Application: Especially for milling plastics.

Dimensions					Shank form HA		
d ₁	d ₂	l ₁	l ₂	z	Specification	Order number	
2,00	3,00	38	8	1	SCM330-0200Z01L-S-HA-HU211	30393681	○
2,50	3,00	38	8	1	SCM330-0250Z01L-S-HA-HU211	30393682	○
3,00	3,00	38	10	1	SCM330-0300Z01L-S-HA-HU211	30393683	○
3,00	4,00	38	10	1	SCM330-0300Z01L-S-HA-HU211	30393684	○
3,00	4,00	50	15	1	SCM330-0300Z01L-S-HA-HU211	30393685	○
3,00	6,00	50	10	1	SCM330-0300Z01L-S-HA-HU211	30393686	○
3,17	6,35	38	13	1	SCM330-0317Z01L-S-HA-HU211	30393687	○
4,00	4,00	40	12	1	SCM330-0400Z01L-S-HA-HU211	30393688	○
4,00	4,00	60	20	1	SCM330-0400Z01L-S-HA-HU211	30393689	○
4,00	4,00	70	30	1	SCM330-0400Z01L-S-HA-HU211	30393690	○
4,00	6,00	50	15	1	SCM330-0400Z01L-S-HA-HU211	30393691	○
4,00	4,00	50	13	1	SCM330-0400Z01L-S-HA-HU211	30393692	○
4,76	4,76	51	16	1	SCM330-0476Z01L-S-HA-HU211	30393693	○
4,76	6,35	51	16	1	SCM330-0476Z01L-S-HA-HU211	30393694	○
5,00	5,00	50	16	1	SCM330-0500Z01L-S-HA-HU211	30393695	○
5,00	5,00	70	30	1	SCM330-0500Z01L-S-HA-HU211	30393696	○
5,00	5,00	60	15	1	SCM330-0500Z01L-S-HA-HU211	30393697	○
6,00	6,00	60	20	1	SCM330-0600Z01L-S-HA-HU211	30393698	○
6,00	6,00	70	30	1	SCM330-0600Z01L-S-HA-HU211	30393699	○
6,00	6,00	80	38	1	SCM330-0600Z01L-S-HA-HU211	30393700	○
6,35	6,35	51	19	1	SCM330-0635Z01L-S-HA-HU211	30393701	○
8,00	8,00	60	25	1	SCM330-0800Z01L-S-HA-HU211	30393702	○
8,00	8,00	80	38	1	SCM330-0800Z01L-S-HA-HU211	30393703	○
10,00	10,00	75	30	1	SCM330-1000Z01L-S-HA-HU211	30393704	○
10,00	10,00	75	20	1	SCM330-1000Z01L-S-HA-HU211	30393705	○

HP-EndMill-Composite-Trimming

PCD end milling cutter for trimming CFRP/GFRP



Design:

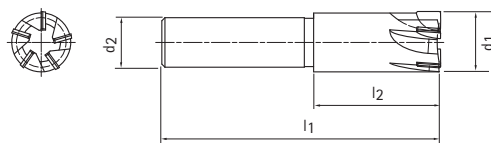
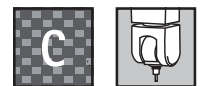
Mill diameter:	11,00 – 20,00 mm
Shank form:	HA
Cutting material:	PCD
Number of blades:	4
Point geometry:	Face cut for plunging with 5° ramp
Helix angle:	0°
Coolant:	Air

Application: CFRP / GFRP – trimming | For materials also with very high portion of fibres.

Dimensions					Order number	
d ₁	d ₂	l ₁	l ₂	z		
11,00	10	88	21	4	30292445	○
12,00	12	88	21	4	30313332	○
16,00	16	100	21	4	30313333	○
20,00	20	104	21	4	30313334	○

HP-EndMill-Composite-Scarfig

PCD end milling cutter for the machining of CFRP surfaces



Design:

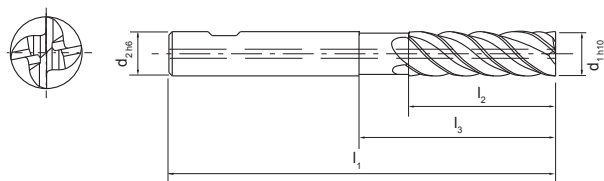
Mill diameter:	20,00 mm
Shank form:	HA
Cutting material:	PCD
Number of blades:	5
Point geometry:	Face cut for plunging with 5° ramp
Helix angle:	4°

Application: Scanning / repair milling of CFRP surfaces

Dimensions					Order number	
d ₁	d ₂	l ₁	l ₂	z		
20,00	16	90	41	5	30283830	○

OptiMill®-Titan

Solid carbide end milling cutter, internal coolant supply
SCM39



Design:

Mill diameter:

6,00 – 20,00 mm

Shank form:

HB

Coating:

uncoated

Number of blades:

4

Point geometry

180°

Helix angle:

40° – 42°

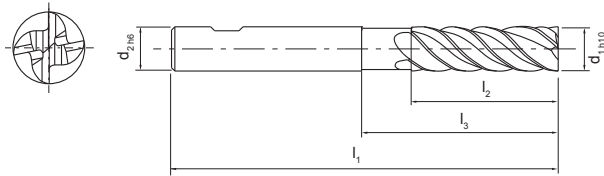
Application: Roughing and finishing titanium

Dimensions						C	R	Specification	Order number	
d1 h10	d2 h6	l1	l2	l3	z					
6,00	6	57	13	20	4	0,12		SCM391-0600Z04R-F0012HB-HU621	30395565	○
6,00	6	57	13	20	4		0,5	SCM391-0600Z04R-R0050HB-HU621	30395566	○
8,00	8	63	21	25	4	0,16		SCM391-0800Z04R-F0016HB-HU621	30395568	○
8,00	8	63	21	25	4		0,5	SCM391-0800Z04R-R0050HB-HU621	30395569	○
10,00	10	72	22	30	4	0,20		SCM391-1000Z04R-F0020HB-HU621	30395570	○
10,00	10	72	22	30	4		0,5	SCM391-1000Z04R-R0050HB-HU621	30395571	○
10,00	10	72	22	30	4		1,0	SCM391-1000Z04R-R0100HB-HU621	30395572	○
12,00	12	83	26	36	4	0,24		SCM391-1200Z04R-F0024HB-HU621	30395573	○
12,00	12	83	26	36	4		0,5	SCM391-1200Z04R-R0050HB-HU621	30395574	○
12,00	12	83	26	36	4		1,0	SCM391-1200Z04R-R0100HB-HU621	30395575	○
12,00	12	83	26	36	4		1,5	SCM391-1200Z04R-R0150HB-HU621	30395576	○
14,00	14	83	26	36	4	0,28		SCM391-1400Z04R-F0028HB-HU621	30395577	○
14,00	14	83	26	36	4		1,0	SCM391-1400Z04R-R0100HB-HU621	30395578	○
16,00	16	92	36	42	4	0,32		SCM391-1600Z04R-F0032HB-HU621	30395579	○
16,00	16	92	36	42	4		1,0	SCM391-1600Z04R-R0100HB-HU621	30395580	○
16,00	16	92	36	42	4		1,5	SCM391-1600Z04R-R0150HB-HU621	30395581	○
16,00	16	92	36	42	4		2,0	SCM391-1600Z04R-R0200HB-HU621	30395582	○
20,00	20	104	41	55	4	0,40		SCM391-2000Z04R-F0040HB-HU621	30395583	○
20,00	20	104	41	55	4		1,5	SCM391-2000Z04R-R0150HB-HU621	30395584	○
20,00	20	104	41	55	4		2,0	SCM391-2000Z04R-R0200HB-HU621	30395585	○
20,00	20	104	41	55	4		2,5	SCM391-2000Z04R-R0250HB-HU621	30395586	○

OptiMill®-Titan

Solid carbide end milling cutter

SCM39



Design:

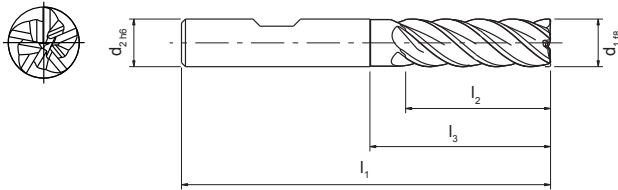
Mill diameter:	6,00 – 20,00 mm
Shank form:	HB
Coating:	uncoated
Number of blades:	4
Point geometry:	180°
Helix angle:	40° – 42°

Application: Roughing and finishing titanium

Dimensions						C	R	Specification	Order number	
d1 h10	d2 h6	l1	l2	l3	z					
6,00	6	57	13	20	4	0,12		SCM390-0600Z04R-F0012HB-HU621	30395593	○
6,00	6	57	13	20	4		0,5	SCM390-0600Z04R-R0050HB-HU621	30395594	○
8,00	8	63	21	25	4	0,16		SCM390-0800Z04R-F0016HB-HU621	30395595	○
8,00	8	63	21	25	4		0,5	SCM390-0800Z04R-R0050HB-HU621	30395596	○
10,00	10	72	22	30	4	0,20		SCM390-1000Z04R-F0020HB-HU621	30395597	○
10,00	10	72	22	30	4		0,5	SCM390-1000Z04R-R0050HB-HU621	30395598	○
10,00	10	72	22	30	4		1,0	SCM390-1000Z04R-R0100HB-HU621	30395599	○
12,00	12	83	26	36	4	0,24		SCM390-1200Z04R-F0024HB-HU621	30395600	○
12,00	12	83	26	36	4		0,5	SCM390-1200Z04R-R0050HB-HU621	30395601	○
12,00	12	83	26	36	4		1,0	SCM390-1200Z04R-R0100HB-HU621	30395602	○
12,00	12	83	26	36	4		1,5	SCM390-1200Z04R-R0150HB-HU621	30395603	○
14,00	14	83	26	36	4	0,28		SCM390-1400Z04R-F0028HB-HU621	30395604	○
14,00	14	83	26	36	4		1,0	SCM390-1400Z04R-R0100HB-HU621	30395605	○
16,00	16	92	36	42	4	0,32		SCM390-1600Z04R-F0032HB-HU621	30395606	○
16,00	16	92	36	42	4		1,0	SCM390-1600Z04R-R0100HB-HU621	30395607	○
16,00	16	92	36	42	4		1,5	SCM390-1600Z04R-R0150HB-HU621	30395609	○
16,00	16	92	36	42	4		2,0	SCM390-1600Z04R-R0200HB-HU621	30395610	○
20,00	20	104	41	55	4	0,40		SCM390-2000Z04R-F0040HB-HU621	30395611	○
20,00	20	104	41	55	4		1,5	SCM390-2000Z04R-R0150HB-HU621	30395612	○
20,00	20	104	41	55	4		2,0	SCM390-2000Z04R-R0200HB-HU621	30395613	○
20,00	20	104	41	55	4		2,5	SCM390-2000Z04R-R0250HB-HU621	30395614	○

OptiMill®-S-Trochoid

Solid carbide HPC end milling cutter, overlong
SCM60



Design:

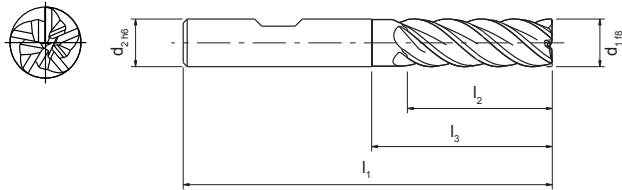
Mill diameter:	5,00 – 25,00 mm
Shank form:	HB (DIN 6535)
Coating:	HP219
Number of blades:	5, 1 blade on centre
Point geometry:	Specific lead geometry
Helix angle:	41° – 42°
Balancing quality:	Insert section balanced to G2.5 to DIN ISO 1940-G2.5
Dimensions:	Works standard – overlong

Application: Specially for trochoidal milling super alloys – part-contact cutting / trimming. For cutting depths up to 3xD.

Dimensions						R	Specification	Order number	
d1 f8	d2 h6	l1	l2	l3	z				
5,00	6	62	17	24	5	0,1	SCM600-0500Z05R-R0010HB-HP219	30564633	○
6,00	6	62	18	25	5	0,1	SCM600-0600Z05R-R0010HB-HP219	30564634	●
8,00	8	68	24	30	5	0,2	SCM600-0800Z05R-R0020HB-HP219	30564635	●
10,00	10	80	30	35	5	0,2	SCM600-1000Z05R-R0020HB-HP219	30564636	●
12,00	12	93	36	45	5	0,3	SCM600-1200Z05R-R0030HB-HP219	30564637	●
14,00	14	99	42	50	5	0,3	SCM600-1400Z05R-R0030HB-HP219	30564638	○
16,00	16	108	48	55	5	0,3	SCM600-1600Z05R-R0030HB-HP219	30564639	●
18,00	18	117	54	67	5	0,3	SCM600-1800Z05R-R0030HB-HP219	30605011	○
20,00	20	126	60	70	5	0,3	SCM600-2000Z05R-R0030HB-HP219	30564640	●
25,00	25	150	75	92	5	0,4	SCM600-2500Z05R-R0040HB-HP219	30605016	○

OptiMill®-Titan-Trochoid

Solid carbide HPC end milling cutter, overlong
SCM63



Design:

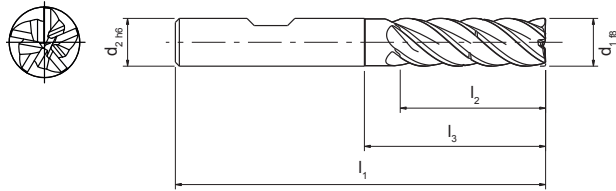
Mill diameter:	5,00 - 25,00 mm
Shank form:	HB (DIN 6535)
Coating:	HP620
Number of blades:	5, 1 blade on centre
Point geometry:	Specific lead geometry
Helix angle:	41° - 42°
Balancing quality:	Insert section balanced to G2.5 to DIN ISO 1940-G2.5
Dimensions:	Works standard - overlong

Application: Specially for trochoidal milling of titanium alloys – part-contact cutting / trimming. For cutting depths up to 3xD.

Dimensions							Specification	Order number	
d1 f8	d2 h6	l1	l2	l3	z	C			
5,00	6	62	17	24	5	0,1	SCM630-0500Z05R-R0010HB-HP620	30651031	○
6,00	6	62	18	25	5	0,1	SCM630-0600Z05R-R0010HB-HP620	30651032	○
8,00	8	68	24	30	5	0,2	SCM630-0800Z05R-R0020HB-HP620	30651033	○
10,00	10	80	30	35	5	0,2	SCM630-1000Z05R-R0020HB-HP620	30651034	○
12,00	12	93	36	45	5	0,3	SCM630-1200Z05R-R0030HB-HP620	30651035	○
14,00	14	99	42	50	5	0,3	SCM630-1400Z05R-R0030HB-HP620	30651036	○
16,00	16	108	48	55	5	0,3	SCM630-1600Z05R-R0030HB-HP620	30651037	○
18,00	18	117	54	67	5	0,3	SCM630-1800Z05R-R0030HB-HP620	30651038	○
20,00	20	126	60	70	5	0,3	SCM630-2000Z05R-R0030HB-HP620	30651039	○
25,00	25	150	75	92	5	0,4	SCM630-2500Z05R-R0040HB-HP620	30651040	○

OptiMill®-PM-Trochoid

Solid carbide milling cutter, overlong
SCM59



Design:

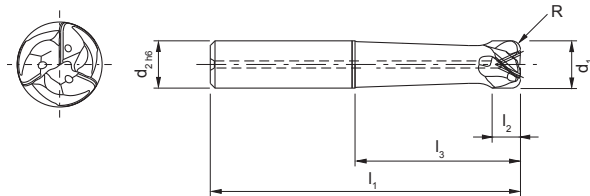
Mill diameter:	5,00 – 25,00 mm
Shank form:	HB (DIN 6535)
Coating:	HP723
Number of blades:	5, 1 blade on centre
Point geometry:	Specific lead geometry
Helix angle:	41° – 42°
Balancing quality:	Insert section balanced to G2.5 to DIN ISO 1940-G2.5
Dimensions:	Works standard – overlong

Application: Specially for trochoidal milling super alloys – part-contact cutting / trimming. For cutting depths up to 3xD with special chip breaker for optimum chip control.

Dimensions						R	Specification	Order number	
d1 f8	d2 h6	l1	l2	l3	z				
5,00	6	62	17	24	5	0,10	SCM590-0500Z05R-F0010HB-HP723	30563365	○
6,00	6	62	18	25	5	0,12	SCM590-0600Z05R-F0012HB-HP723	30563366	●
8,00	8	68	24	30	5	0,16	SCM590-0800Z05R-F0016HB-HP723	30563367	●
10,00	10	80	30	35	5	0,20	SCM590-1000Z05R-F0020HB-HP723	30563368	●
12,00	12	93	36	45	5	0,24	SCM590-1200Z05R-F0024HB-HP723	30563369	●
14,00	14	99	42	50	5	0,28	SCM590-1400Z05R-F0028HB-HP723	30563370	○
16,00	16	108	48	55	5	0,32	SCM590-1600Z05R-F0032HB-HP723	30563371	●
18,00	18	117	54	67	5	0,36	SCM590-1800Z05R-F0036HB-HP723	30615879	○
20,00	20	126	60	70	5	0,40	SCM590-2000Z05R-F0040HB-HP723	30563372	●
25,00	25	150	75	92	5	0,50	SCM590-2500Z05R-F0050HB-HP723	30615113	○

OptiMill®-SPM

Solid carbide milling cutter, internal coolant supply
SCM68/69



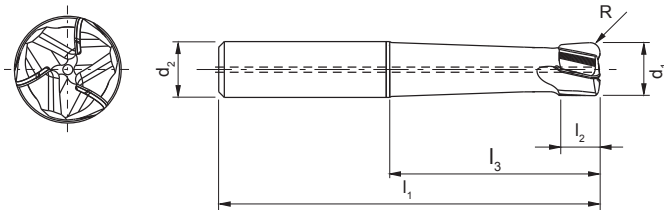
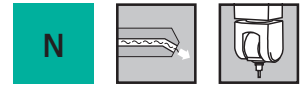
Design:
 Mill diameter: 6,00 - 32,00 mm
 Shank form: HA (DIN 6535)
 Coating: uncoated
 Number of blades: 3
 Point geometry: Specific lead geometry
 Helix angle: 43°

Application: For machining of structural parts of aluminium (< 3 % Si)

Dimensions							Specification	Order number	
d ₁	d ₂	l ₁	l ₂	l ₃	z	R			
Short design SCM68									
14,00	16	77	8,4	28	3	3,0	SCM681-1400Z03R-R0300HA-HU610	30551337	○
15,00	16	78	9,0	29	3	3,0	SCM681-1500Z03R-R0300HA-HU610	30551339	○
16,00	16	81	9,6	32	3	3,0	SCM681-1600Z03R-R0300HA-HU610	30551341	○
18,00	20	87	10,8	36	3	3,0	SCM681-1800Z03R-R0300HA-HU610	30551342	○
20,00	20	90	12,0	39	3	3,0	SCM681-2000Z03R-R0300HA-HU610	30551344	○
25,00	25	107	15,0	50	3	4,0	SCM681-2500Z03R-R0400HA-HU610	30551345	○
32,00	32	125	19,2	64	3	4,0	SCM681-3200Z03R-R0400HA-HU610	30551346	○
Long design SCM69									
6,00	6	60	3,6	23	3	1,0	SCM691-0600Z03R-R0100HA-HU610	30551334	○
8,00	8	70	4,8	33	3	1,0	SCM691-0800Z03R-R0100HA-HU610	30551333	○
10,00	10	80	6,0	39	3	2,0	SCM691-1000Z03R-R0200HA-HU610	30551331	○
12,00	12	90	7,2	44	3	2,0	SCM691-1200Z03R-R0200HA-HU610	30551330	○
14,00	16	99	8,4	50	3	3,0	SCM691-1400Z03R-R0300HA-HU610	30551348	●
15,00	16	100	9,0	51	3	3,0	SCM691-1500Z03R-R0300HA-HU610	30551349	○
16,00	16	105	9,6	56	3	3,0	SCM691-1600Z03R-R0300HA-HU610	30551350	●
18,00	20	114	10,8	63	3	3,0	SCM691-1800Z03R-R0300HA-HU610	30551351	○
20,00	20	120	12,0	69	3	3,0	SCM691-2000Z03R-R0300HA-HU610	30551352	●
25,00	25	145	15,0	88	3	4,0	SCM691-2500Z03R-R0400HA-HU610	30551353	●
32,00	32	173	19,2	112	3	4,0	SCM691-3200Z03R-R0400HA-HU610	30551354	○

OptiMill®-Diamond-SPM

PCD end mill, internal coolant supply from $\varnothing 10$ mm
SHM10/11



Design:

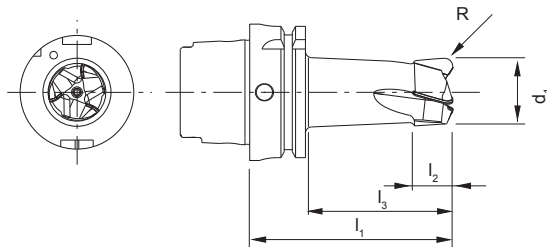
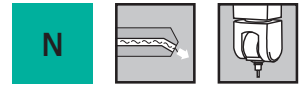
Mill diameter:	6,00 - 32,00 mm
Shank form:	HA (DIN 6535)
Number of blades:	3
Point geometry:	Specific lead geometry
Axis angle:	9 / 12°

Application: For machining of structural parts of aluminium (< 3 % Si)

Dimensions							Specification	Order number	
d ₁	d ₂	l ₁	l ₂	l ₃	z	R			
Short design SHM10									
14,00	16	77	10	28	3	3,0	SHM101-1400BZ03R-R0300HA-PU622	30552836	○
15,00	16	78	10,6	29	3	3,0	SHM101-1500CZ03R-R0300HA-PU622	30552839	○
16,00	16	81	11,4	32	3	3,0	SHM101-1600CZ03R-R0300HA-PU622	30552842	○
18,00	20	87	12,8	36	3	3,0	SHM101-1800CZ03R-R0300HA-PU622	30552844	○
20,00	20	90	14,2	39	3	3,0	SHM101-2000CZ03R-R0300HA-PU622	30552846	○
25,00	25	107	17,8	50	3	4,0	SHM101-2500DZ03R-R0400HA-PU622	30552849	○
32,00	32	125	20	64	3	4,0	SHM101-3200DZ03R-R0400HA-PU622	30552851	○
Long design SHM11									
6,00	6	60	6	23	3	1,0	SHM110-0600BZ03R-R0100HA-PU622	30552830	○
8,00	8	70	7	33	3	1,0	SHM110-0800BZ03R-R0100HA-PU622	30552832	○
10,00	10	80	7,5	39	3	2,0	SHM111-1000BZ03R-R0200HA-PU622	30552833	○
12,00	12	90	8,5	44	3	2,0	SHM111-1200BZ03R-R0200HA-PU622	30552834	○
14,00	16	99	10	50	3	3,0	SHM111-1400BZ03R-R0300HA-PU622	30552837	○
15,00	16	100	10,6	51	3	3,0	SHM111-1500CZ03R-R0300HA-PU622	30552841	○
16,00	16	105	11,4	56	3	3,0	SHM111-1600CZ03R-R0300HA-PU622	30552843	○
18,00	20	114	12,8	63	3	3,0	SHM111-1800CZ03R-R0300HA-PU622	30552845	○
20,00	20	120	14,2	69	3	3,0	SHM111-2000CZ03R-R0300HA-PU622	30552847	○
25,00	25	145	17,8	88	3	4,0	SHM111-2500DZ03R-R0400HA-PU622	30552850	○
32,00	32	173	20	112	3	4,0	SHM111-3200DZ03R-R0400HA-PU622	30552852	○

OptiMill®-Diamond-SPM

PCD mill with HSK-A 63, internal coolant supply
SHM12



Design:

Mill diameter: 32,00 - 50,00 mm
Shank form: HSK-A 63
Number of blades: 3 / 4
Point geometry: Specific lead geometry
Axis angle: 15° / 17°

Application: For machining of structural parts of aluminium (< 3 % Si)

Dimensions						Specification	Order number	
d ₁	l ₁	l ₂	l ₃	z	R			

With HSK-Face connection ø 63 mm

32,00	86	17	57	3	4,0	SHM121-3200Z03R-R0400A6-PU622	30583603	●
40,00	98	17	70	4	4,0	SHM121-4000Z04R-R0400A6-PU622	30597953	○
50,00	109	20	80	4	4,0	SHM121-5000Z04R-R0400A6-PU622	30590483	○

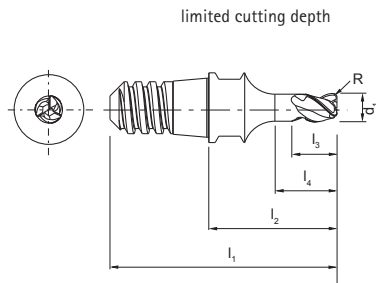
With enlarged HSK-Face connection ø 80 mm

32,00	86	17	57	3	4,0	SHM121-3200Z03R-R0400A6-PU622	30625821	○
50,00	109	20	80	4	4,0	SHM121-5000Z04R-R0400A6-PU622	30625820	○

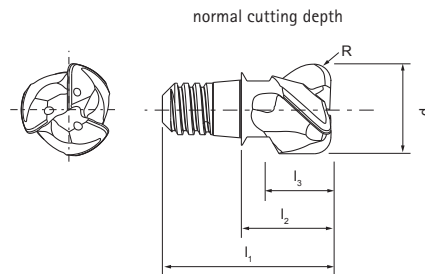
CPMill-SPM

Solid carbide replaceable milling cutter, internal coolant supply
CPM27

N



limited cutting depth



normal cutting depth

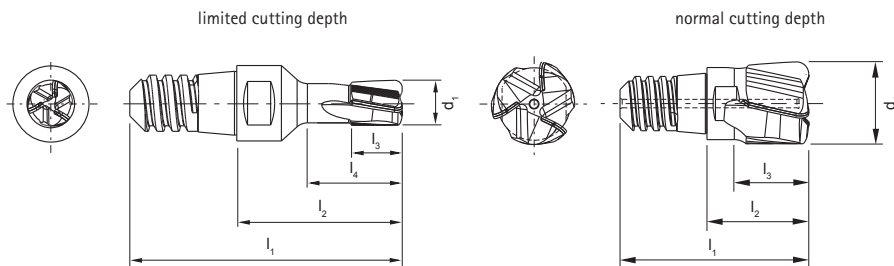
Design:
Mill diameter: 3,00 - 25,00 mm
Coating: uncoated
Number of blades: 3
Point geometry: Specific lead geometry
Helix angle: 43°

Application: For machining of structural parts of aluminium (< 3 % Si)

Dimensions								Specification	Order number	
Connection size CFS	d ₁	l ₁	l ₂	l ₃	l ₄	z	R			
CPM27 limited cutting depth										
8	3,00	31,9	18	3,38	8,21	3	0,5	CPM271-0300Z03-R0050-08-HU610	30551362	○
8	4,00	31,9	18	4,50	8,72	3	0,5	CPM271-0400Z03-R0050-08-HU610	30551364	○
8	5,00	31,9	18	5,50	9,25	3	1,0	CPM271-0500Z03-R0100-08-HU610	30551365	○
8	6,00	31,9	18	6,00	10,10	3	1,0	CPM271-0600Z03-R0100-08-HU610	30569314	○
8	8,00	31,9	18	6,00	11,21	3	1,0	CPM271-0800Z03-R0100-08-HU610	30551366	○
8	10,00	24,9	11	6,00	10,00	3	2,0	CPM271-1000Z03-R0200-08-HU610	30551367	○
10	12,00	27,3	13	7,20	12,00	3	2,0	CPM271-1200Z03-R0200-10-HU610	30551368	○
CPM27 normal cutting depth										
10	14,00	28,1	14	8,40	-	3	3,0	CPM271-1400Z03-R0300-10-HU610	30551355	○
10	15,00	29,1	15	9,00	-	3	3,0	CPM271-1500Z03-R0300-10-HU610	30551356	○
10	16,00	30,1	16	9,60	-	3	3,0	CPM271-1600Z03-R0300-10-HU610	30551357	○
12	18,00	35,3	18	10,80	-	3	3,0	CPM271-1800Z03-R0300-12-HU610	30551358	○
14	20,00	40,5	20	12,00	-	3	3,0	CPM271-2000Z03-R0300-14-HU610	30551359	○
16	25,00	47,2	25	15,00	-	3	4,0	CPM271-2500Z03-R0400-16-HU610	30551360	○

CPMill®-Diamond-SPM

PCD replaceable milling cutters, internal coolant supply
from $\varnothing$ 10 mm, CPM26

**Design:**

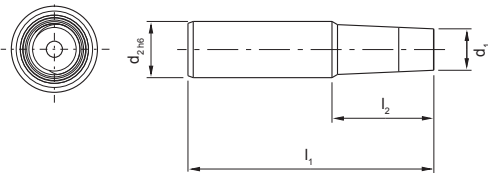
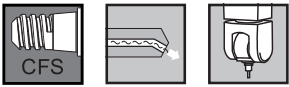
Mill diameter: 4,00 – 25,0 mm
Number of blades: 2 / 3
Point geometry: Specific lead geometry
Axis angle: 9° / 12°

Application: For machining of structural parts of aluminium (< 3 % Si)

Dimensions								Specification	Order number	
Connection size CFS	d ₁	l ₁	l ₂	l ₃	l ₄	z	R			
CPM26 limited cutting depth										
8	4,00	34,4	20,5	5,5	6,71	2	0,5	CPM260-0400Z02-R0050-08-PU622	30552952	○
8	5,00	34,4	20,5	5,5	7,61	2	1,0	CPM260-0500Z02-R0100-08-PU622	30552953	○
8	6,00	35,4	21,5	6,0	9,02	3	1,0	CPM260-0600Z03-R0100-08-PU622	30564651	○
8	8,00	36,4	22,5	7,0	10,80	3	1,0	CPM260-0800Z03-R0100-08-PU622	30552954	○
8	10,00	34,9	21	7,5	16,50	3	2,0	CPM261-1000Z03-R0200-08-PU622	30552955	○
10	12,00	36,1	22	8,5	17,50	3	2,0	CPM261-1200Z03-R0200-10-PU622	30552956	○
CPM26 normal cutting depth										
10	14,00	32,1	18	10,0	–	3	3,0	CPM261-1400Z03-R0300-10-PU622	30552966	○
10	15,00	32,1	18	10,6	–	3	3,0	CPM261-1500Z03-R0300-10-PU622	30552967	○
10	16,00	34,1	20	11,4	–	3	3,0	CPM261-1600Z03-R0300-10-PU622	30552969	○
12	18,00	39,3	22	12,8	–	3	3,0	CPM261-1800Z03-R0300-12-PU622	30552970	○
14	20,00	44,5	24	14,2	–	3	3,0	CPM261-2000Z03-R0300-14-PU622	30552971	○
16	25,00	51,2	29	17,8	–	3	4,0	CPM261-2500Z03-R0400-16-PU622	30552972	○

Replaceable head holder CFS | SPM

Internal coolant supply
CFS201 (conical design)



Design:
For mill diameter: 3,00 - 12,00 mm
Coolant supply: Central

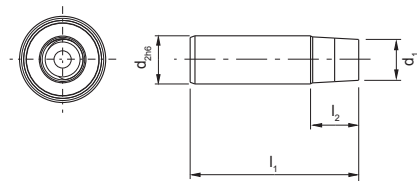
Application: For use with SPM replaceable milling cutters with limited cutting depth (CPM 26/27)

Dimensions						Specification	Order number	
Connection size CFS	d ₁	l ₁	l ₂	α	d ₂ h6			
8*	9,8	70	30	85°	16	CFS201N-08-030-ZYL-HA16-S	30393787	●
10**	11,8	70	30	85°	16	CFS201N-10-030-ZYL-HA16-S	30393798	●

* Suitable for replaceable milling cutter with d₁ = 3 - 10 mm.
** Suitable for replaceable milling cutter with d₁ = 12 mm.

Replaceable head holder CFS | SPM

Optimised for replaceable milling cutter SPM, internal coolant supply
CFS401 (conical design)



Design:

For mill diameter:

14,00 – 25,00 mm

Coolant supply:

Central

Application: For use with SPM replaceable milling cutters without limited cutting depth (CPM 26/27)

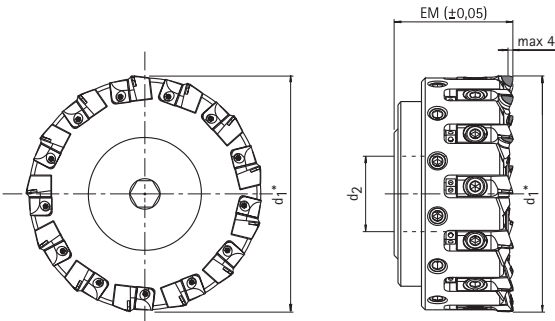
Dimensions					Specification	Order number	
Connection size CFS	d ₁	l ₁	l ₂	d ₂ h6			
Short design Steel							
10*	12	63	14	16	CFS401N-10-014-ZYL-HA16-S	30550452	○
10**	13	65	16	16	CFS401N-10-016-ZYL-HA16-S	30557517	○
12	15	69	18	20	CFS401N-12-018-ZYL-HA20-S	30550444	○
14	17	70	19	20	CFS401N-14-019-ZYL-HA20-S	30557520	○
16	22	82	25	25	CFS401N-16-025-ZYL-HA25-S	30550443	○
Long design Solid Carbide							
10*	12	85	36	16	CFS401N-10-036-ZYL-HA16-H	30550450	○
10**	13	89	40	16	CFS401N-10-040-ZYL-HA16-H	30557519	○
12	15	96	45	20	CFS401N-12-045-ZYL-HA20-H	30550916	○
14	17	100	49	20	CFS401N-14-049-ZYL-HA20-H	30557521	○
16	22	120	63	25	CFS401N-16-063-ZYL-HA25-H	30550441	○

* Suitable for replaceable milling cutter with d₁ = 14 mm and 15 mm.

** Suitable for replaceable milling cutter with d₁ = 16 mm.

PowerFeed

PCD face milling cutter

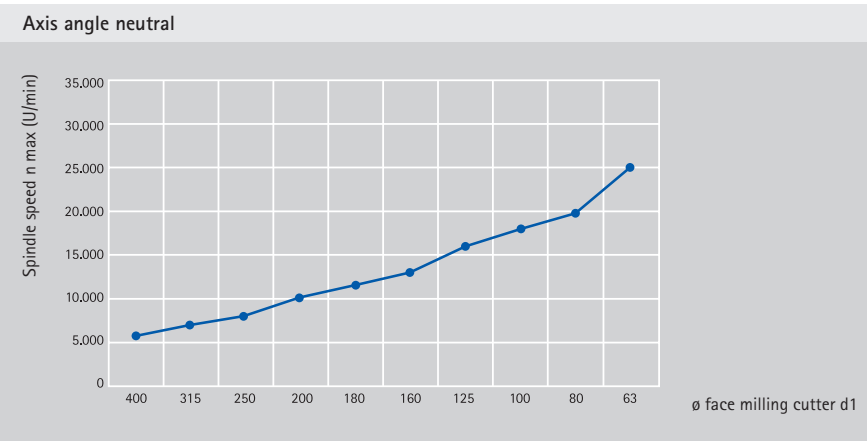


Application: Face milling of Alu, CFRP and GFRP

Design:
Mill diameter: 63,00 - 400,00 mm
Number of blades: 8 - 50 (Standard)
Coolant supply: internal

Dimensions							Order number	
d1*	z	EM (± 0,05)	d2	Material Tool body	Spindle speed U/min	Weight kg		
63,00	8	48	22	Steel	25.000	0,80	7-04063-01	●
80,00	8	50	27	Alu	20.000	0,75	7-04080-01	●
100,00	10	50	32	Alu	18.000	1,20	7-04100-01	●
125,00	13	63	40	Alu	16.000	2,20	7-04125-01	●
160,00	18	63	40	Alu	13.000	2,15	7-04160-01	●
180,00	20	63	40	Alu	11.500	2,60	7-04180-01	●
200,00	24	63	60	Alu	10.000	4,40	7-04200-01	●
250,00	30	63	60	Alu	8.000	7,00	7-04250-01	●
315,00	38	80	60	Alu	7.000	14,10	7-04315-01	○
400,00	50	80	60	Alu	6.100	22,10	7-04400-01	○

Suitable Milling cartridges on page 123.



Milling cartridges for face milling head PowerFeed

Max. Cutting depth 4 mm, can be re-ground

Order example:

7 - 02 6 1 1 - 0 2
 Series Type Rake angle Blade form Running direction Cutting material

a) Series		b) Type		c) Rake angle	
Number	Series	Number	Series	Number	Rake angle
02	PowerMill	6	Corner blade	1	6°
-	-	7	Face blade	2	3°
-	-	8	Wide face milling blade	3	0°
-	-	9	PT blade	-	-

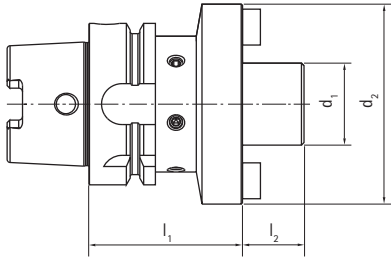
d) Blade form			
Number	Type No. 6 & No. 7 (corner & facing blade) Required R_z -value (on part)	Type No. 8 (Wide face milling blade) Radius	Type 9 (PT blade) Required R_z -value (on part)
1	< 5 μm	●	< 5 μm
2	< 10 μm	-	-
3	< 20 μm	-	-
4	> 20 μm	-	-

e) Running direction		f) Cutting material	
Number	Running direction	Number	Cutting material
0	R.H.	2	PCD
1	L.H.	5	carbide

Milling cartridges			
Type No. 6 Corner blade	Type No. 7 Face blade	Type No. 8 Wide face milling blade	Type No. 9 PT blade

Milling cutter arbors in accordance with DIN 69882-3

Locating shank HSK-A in accordance with DIN 69893-1



Nominal size HSK-A	Dimensions				Weight kg	Specification	Order number	Order number Chip-Version	
	d_1	d_2	l_1	l_2					
63	22	48	50	19	1,0	MCA-HSK-A063-22-050-1-0-W	10066802	10071567	●
63	27	60	60	21	1,4	MCA-HSK-A063-27-060-1-0-W	10066803	10078580	●
63	32	78	60	24	1,7	MCA-HSK-A063-32-060-1-0-W	10066804	10072205	●
63*	40	89	60	27	1,9	MCA-HSK-A063-40-060-1-0-W	10066805	10076023	●
63*	60**	140	70	27	4,5	MCA-HSK-A063-60-070-1-0-W	10067153	10093651	○
80	22	48	50	19	1,5	MCA-HSK-A080-22-050-1-0-W	10066806	on request	○
80	27	60	50	21	1,7	MCA-HSK-A080-27-050-1-0-W	10066808	on request	○
80	32	78	60	24	2,3	MCA-HSK-A080-32-060-1-0-W	10066810	on request	○
80*	40	89	60	27	2,5	MCA-HSK-A080-40-060-1-0-W	10066811	on request	○
100	22	48	50	19	2,3	MCA-HSK-A100-22-050-1-0-W	10066812	30201364	●
100	27	60	50	21	2,5	MCA-HSK-A100-27-050-1-0-W	10066813	10079983	●
100	32	78	50	24	2,9	MCA-HSK-A100-32-050-1-0-W	10066814	30192516	●
100*	40	89	60	27	3,5	MCA-HSK-A100-40-060-1-0-W	10066815	30192520	●
100*	60	140	70	40	6,2	MCA-HSK-A100-60-070-1-0-W	10066817	10071573	○

* Marked size have four additional threaded holes to accept cutting heads with tool connection as per DIN 2079.

** d_1 = 60 mm by nominal size HSK-A63 max. cutting head diameter $D = 250$ mm, small balancing holes on circumference.

Spare parts for milling cutter arbors

Arbor $\varnothing$ d	Key block (2x)			Key block ISO 4762 for drive keys (2x)		
	Specification	Order number		Size	Order number	
22	MT1013-01	10005640	●	M4x10 – 12.9	10003583	●
27	MT1215-01	10005165	●	M4x16 – 12.9	10003586	●
32	MT1422-01	10004063	●	M5x16 – 12.9	10003601	●
40	MT1623-01	10004064	●	M5x16 – 12.9	10003601	●
60	MT2625-01	10010103	●	M12x25 – 12.9	10003675	●



Tools for reaming CFRP metal multilayer composites (stacks)

During the machining of stacks, high requirements are placed on the diameter, surface finish and circularity or the bore to ensure maximum rivet load bearing capacity (tolerance range H8-H9 / Ra CFRP 3.2, Ra metal 1.6 / Cpk 1.6). Due to the different machining properties of the stack materials, the machining strategy, tool geometry and cutting parameters have a crucial influence on the accuracy of the diameter.

ADD ENGINEERING multi-bladed reamers equipped with different cutting materials are suitable for a very wide range of applications, whether with or without guide bush, with left hand or right hand teeth, as a combination with guide pads, as well as for wet or MQL machining.

During the design of the tools special attention is paid to customer-specific situations, such as the accessibility of the part and the existing machines, so that optimal chip removal is ensured in the related application. On the usage of drill feed units the chips must predominantly be transported to the rear and extracted directly at the bore entrance, similar to a blind bore. Here only drill feed units with peck/hiccup function for the generation of chips suitable for extraction are used.



Reaming tools for aerospace applications

Overview of ADD ENGINEERING reaming and fine boring competence

Fixed multi-bladed reamers



Drastically reduced machining times are possible using fixed multi-bladed reamers. The multiple blades permit higher feed values, which at the end of the day define the machining times. Due to specifically developed systems and the latest manufacturing technology, ADD ENGINEERING also offers these tools with the highest accuracies. The product portfolio offers a wide variety that will satisfy all the requirements of the machining task.

HPR reamers



The ADD ENGINEERING HPR high performance reamers achieve radial run-out and changeover accuracies in the μm range due to the HFS® replaceable head system and therefore address the prerequisites for new dimensions in modern high performance machining. Straightforward construction, direct coolant supply to the cutting edge and therefore also suitability for minimum quantity lubrication (MQL) as well as a large selection of cutting materials make the ADD ENGINEERING HPR reamers unique.

Reamers with guide pads



ADD ENGINEERING guide pad technology is, during the fine machining of bores, the standard for very high accuracy requirements on bore diameter, circularity, cylindrical form and surface finish. Starting from the wide selection of standard ranges with proven cutting systems, ADD ENGINEERING offers custom tools specially matched to the specific production task. Combination tools reliably produce complex part contours effectively and efficiently in one process step. You will find further information in the ADD ENGINEERING catalogues in the subject of "Reaming and fine boring".

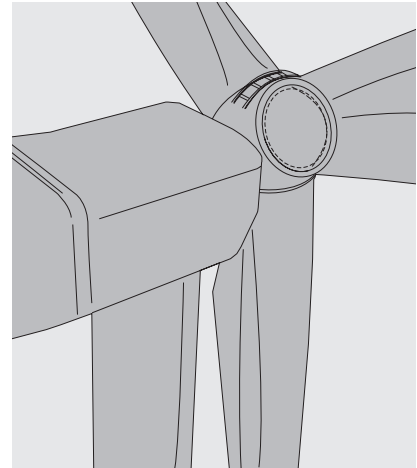
Wind turbine rotor blades

Complete machining of GFRP blade joint

The design of the joint between rotor blade and rotor hub is one of the most demanding tasks during rotor blade development on wind energy converters. The bolted joint that connects the rotor blade via the blade bearing to the rotor hub is subjected to extremely dynamic loads.

To reduce the weight of the rotor blade and to reduce the manufacturing costs, the manufacturers mostly use the so-called cross-pin joint. To cost-effectively undertake the necessary drilling, milling and cutting operations on the GFRP blade joint, ADD ENGINEERING has developed innovative tool systems that have also been optimised in relation to the reduced production of dust and chips.

1. PCD core drill Machining of the longitudinal bores and cross bores for the retaining pins
PCD-tipped core drills achieve high tool lives and also prevent delamination at the bore outlet. Due to the low volume of chips, also with large machining diameters, the production of dust and chips is significantly reduced in comparison to a conventional drill.
2. Replaceable head drill TTD (special design) Machining of the locking bores for blade alignment in the machine tool
The geometry of the replaceable head drill has been specially optimised for the requirements of GFRP machining. The design as a replaceable head system makes the machining of the 32 mm diameter particularly cost-effective.
3. PCD disc-type milling cutter (cutting) Cutting off the protruding resin on the edge of the rotor blade root
The disc-type milling cutter $\varnothing = 400$ mm tipped with 20 PCD inserts ensure machining times are short. The polished tool body reduces the heat produced during the machining. No wandering of the saw cut as occurs during conventional machining with diamond saw blades.
4. PCD face milling cutter (EcoSpeed) Fine machining of the cut edge
After cutting off the protruding resin using the disc-type milling cutter, the surface for the joint to the rotor hub is finish machined using a PCD-tipped face milling cutter from the EcoMill series to achieve the required flatness.



ADVANTAGES

- Innovative core drill reduces dust and the production of chips
- Short machining times during milling due to maximum number of inserts in the tool body
- No delamination, bre projection or burr formation on the part
- Long tool lives due to PCD-tipped inserts or special diamond coatings



Aerospace industry – fuselage and wing assembly

Machining of CFRP/titanium/aluminium multilayer composites

Due to the use of CFRP in modern aircraft structure and aircraft skin assembly, titanium is increasingly commonly used to introduce and distribute the forces. In the fuselage this is the case in the areas of the doors, and in the wing in the area where the loads from the engine are applied, and in the landing gear and the flaps. The geometric requirements on the bores in these highly loaded structural components made of CFRP/titanium/aluminium are very tight and must be achieved in one machining step with high process reliability.

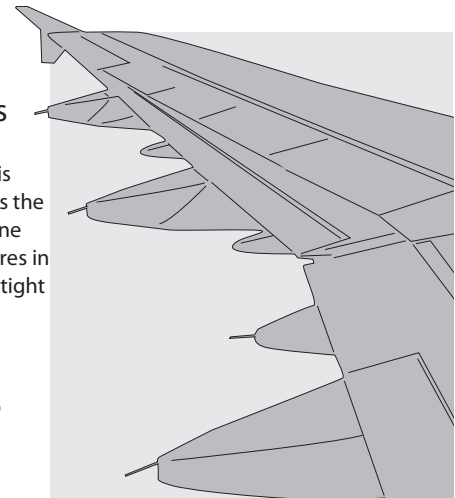
Over many years ADD ENGINEERING has obtained an understanding of the process of mechanically machining the various materials. The result is a tool that, despite varying requirements from this machining, produces bores in H8 quality in one machining step with long tool life. The tool operates with low process heat in titanium, it prevents the adhesion of aluminium and prevents scratches in the CFRP.

1. Replaceable head drill TTD-Stack-Drill
Drilling aluminium-CFRP stacks, for usage in wing assembly

The geometry and the coating of the tool vary depending on the composition of the stack and machining direction. In the case of CFRP-aluminium stacks, the bore is drilled from the solid and produced in H8 quality using the TTD tool. In the case of multilayer composites with titanium, bores > 12 mm are drilled from the solid with the TTD tool and subsequently reamed.

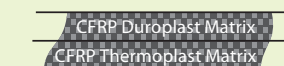
2. HPR replaceable head reamer "Stack-Reamer" Reaming of aluminium-CFRP-titanium stacks, for usage in wing assembly

While on the CFRP-aluminium stacks the bores are produced in one machining step, after drilling a CFRP-titanium stack (with diameters > 12 mm) the surface must be fine machined with a reamer. Here an HPR tool with replaceable head and PCD blades is used.



ADVANTAGES

- Custom-made tool solutions for optimum results in all stack variants
- Drilling from the solid and fine machining with one tool in CFRP/CFRP and CFRP/aluminium
- Replaceable head systems for high cost-effectiveness
- CFRP/CFRP: Drilling without delamination and burr projections



- CFRP/aluminium: Burr-free drilling without delamination



- CFRP/titanium: Low process heat at high process speeds





Technical notes

Handling notes replaceable head drills TTD

Handling notes face milling head PowerMill

Handling notes CPMill

Machining values

Handling notes for replaceable head drill TTD

Undoing drill head



1. Turn clamping screw counter-clockwise using hex wrench.



2. Pull drill head out of serration.



3. Remove worn drill head, then fit new drill head.

Clamping drill head



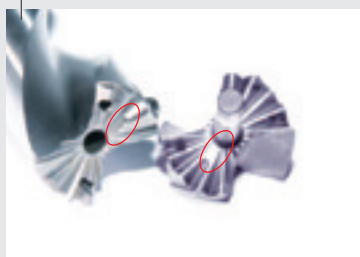
1. On fitting the drill head ensure that the chip flute and serration on the drill head and tool holder are aligned. The TTS connection should be cleaned on changing the drill head (compressed air).



2. Fit new drill head to tool holder.
Engage serration. Due to the positioning aid, it is not possible to fully engage the serration if the positioning of the tool holder and head is incorrect.



3. Close clamping screw clockwise and tighten hand tight.



Handling notes for face milling head PowerMill

Easy handling for high precision results

The efficiency of a Milling Head System is not just demonstrated by the classic assessment factors. Cutting results, tool life or surface finish achieved and even tool planning are of prime importance. A further important factor for a successful system, how-ever, is handling. A minimum of ex-tremely simple hand movements must be achieved to prepare the milling head at the tool setting stage for use on the machine. It is not unusual, particu-

larly in large cutting organisations, to also recondition the face milling heads at the end of their life within the customer's own tool management system. A decisive factor here is that high precision blade setting can be carried out with the least possible amount of work. It is only in this way that reliable batch production can be obtained even with reground milling cartridges.

With the PowerMill series fine adjustment is carried out after the milling cartridge has been finally fitted and the appropriate torque applied. The adjustment screws which have been specially developed for this series allow

the blades to be perfectly adjusted. The design of the milling cartridge allows an adjustment range of at least 1 mm.

PowerMill series – fine adjustment with adjusting screw



- ▶ Locate the face milling head in the setting fixture
- ▶ Fit the milling cartridge on the basic body using holding screws
- ▶ Pre-adjust the milling cartridge with adjusting screws



- ▶ Tighten clamping screws with 14 Nm



- ▶ Finely adjust the milling cartridge with adjusting screw



Assembly instructions for replaceable milling heads CPMill

- ▶ 1. Clean the taper, thread and face surface of the replaceable milling head.
- ▶ 2. Clean the taper, thread and face surface of the replaceable head holder.

Note: To minimise the risk of injury, we recommend using gloves for the next step.

- ▶ 3. Hand tighten the replaceable milling head clockwise in the replaceable head holder.

Note: Ensure the gap between the milling head and the replaceable head holder is closed. Only then can force closure and form closure of the connection be ensured.

Note: Ensure that the torque wrench is positioned horizontal to the wrench flats (fig. 1) and that the wrench does not become canted.

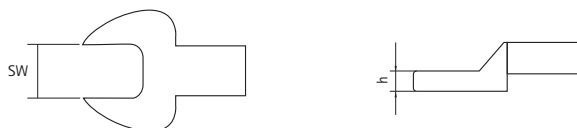
Note: To enable a sensitive adjustment, put one hand on the replaceable milling head. So the torque can be adjusted easier. (fig. 2)

- ▶ 4. Tighten the replaceable milling head to the stated tightening torque with the aid of the torque wrench and the matching open-ended spanner attachment (as per table).
- ▶ 5. The gap between head and holder is closed now. And a force-fit and form-fit has been achieved.



Connection size CFS	Tightening torque [Nm]
6	5
8	12,5
10	15
12	20
16	25
20	30

Open-ended spanner attachments

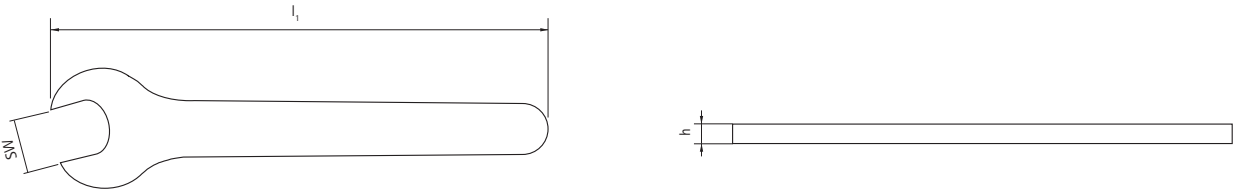


Connection size CFS	Dimensions			Order number	
	Wrench size (sw)	h	Attachment shank		
6	6	2,3	9x12	30376387	○
8	8	2,8	9x12	30376388	●
10	10	3,8	9x12	30376390	●
12	13	3,8	9x12	30376392	●
16	16	4,8	9x12	30376394	●
20	21	4,8	14x18	30376395	●

Torque wrench for open-ended spanner attachments

Attachment shank	Tighten torque (Nm)	Total length	Order number	
9x12	2-25	274	30386735	○
14x18	20-200	470,5	30386736	○

Assembly tools



Connection size CFS	Dimensions			Order number	
	Wrench size (sw)	l ₁	h		
6	6	75	2,3	30352660	○
8	8	92	2,8	30352661	○
10	10	100	3,8	30352662	○
12	13	135	3,8	30352663	○
16	16	145	4,8	30352667	○
20	21	195	4,8	30352668	○

Machining values drilling

				MEGA-Stack- Drill-CA	MEGA-Stack- Drill-CT	MEGA-Stack- Drill-Robot- CA	MEGA-Stack- Drill-Robot- CT	MEGA-Drill- Composite- MD-Micro	MEGA-Drill- Composite- MD	MEGA-Drill- Composite- UDX	TTD- Composite- Drill	
Material		Material examples		ø3-12 mm	ø3-12 mm	ø8-20 mm	ø8-20 mm	ø0,50-2,90 mm	ø2,50-12 mm	ø3-12 mm	ø12-32 mm	
N	N1.1	Aluminium, non-alloyed and alloyed < 3 % Si	Alloy 2024, Alloy 7075, Al99	v _c (m/min)	75 - 150		75 - 150					
				f _a (mm)	0,05 - 0,25		0,05 - 0,25					
	N3.1	Graphite		v _c (m/min)				75 - 150	75 - 150	75 - 150		
				f _a (mm)				0,05 - 0,1	0,05 - 0,1	0,05 - 0,1		
	N4.1	Plastic, thermoplastic	PA, PE, PC, PS, PVC, PP, PTFE, POM, PMMA	v _c (m/min)				75 - 150	75 - 150		75 - 150	
				f _a (mm)				0,05 - 0,2	0,05 - 0,2		0,05 - 0,1	
	N4.2	Plastic, thermosetting plastic (duroplast)	PU, PF, EP, UP, VE, CR	v _c (m/min)				75 - 150	75 - 150	75 - 150	75 - 150	
				f _a (mm)				0,05 - 0,1	0,05 - 0,1	0,05 - 0,1	0,05 - 0,1	
	N4.3	Plastic, foam	EPS, PUR, PVC-E, PS-E, PP-E	v _c (m/min)				75 - 200	75 - 200			
				f _a (mm)				0,05 - 0,4	0,05 - 0,4			
	C1.1	Plastic matrix, aramid fibre reinforced plastic (AFK)	Nomex, Kevlar, Twaron, KOREX	v _c (m/min)								
				f _a (mm)								
C	C1.2	Plastic matrix (thermosetting), CFRP/GFRP	IMS, HTA	v _c (m/min)				75 - 150	75 - 150	75 - 150	75 - 150	
				f _a (mm)				0,05 - 0,1	0,05 - 0,1	0,05 - 0,1	0,05 - 0,1	
	C1.3	Plastic matrix (thermoplastic), CFRP/GFRP	GMT-PP, PEEK	v _c (m/min)				75 - 150	75 - 150	75 - 150	75 - 150	
				f _a (mm)				0,05 - 0,1	0,05 - 0,1	0,05 - 0,1	0,05 - 0,1	
	C2.1	Carbon matrix, carbon fibre reinforced (CFC)	CF222, CF225, CF226, CF227, CF260	v _c (m/min)				75 - 150	75 - 150	75 - 150	75 - 150	
				f _a (mm)				0,05 - 0,1	0,05 - 0,1	0,05 - 0,1	0,05 - 0,1	
	C4.1	Sandwich construction, honeycomb core of paper		v _c (m/min)				75 - 150	75 - 150	75 - 150		
				f _a (mm)				0,05 - 0,1	0,05 - 0,1	0,05 - 0,1		
	C4.2	Sandwich construction, honeycomb core of aluminium	PLASCORE PAMG-XR1 5052, PCGA-XR1 3003, PAMG-XR1 5056, Micro-Cell (Alloy core of 5052/5056)	v _c (m/min)				75 - 150	75 - 150	75 - 150		
				f _a (mm)				0,05 - 0,1	0,05 - 0,1	0,05 - 0,1		
	C4.3	Sandwich construction, honeycomb core of plastic and fibre composite materials	CORMASTER, TUBUS, KOREX, HFT-G, TPU, HFT, HRH (HRH-10, HRH-310, HRH-78, HRH-49, HRH-327), HDC-F	v _c (m/min)				75 - 150	75 - 150	75 - 150		
				f _a (mm)				0,05 - 0,1	0,05 - 0,1	0,05 - 0,1		
	C4.4	Sandwich construction, core of rigid foam	AIREX R63, AIREX C70, ROHACELL IG-F	v _c (m/min)				75 - 150	75 - 150	75 - 150		
				f _a (mm)				0,05 - 0,1	0,05 - 0,1	0,05 - 0,1		
S	C5.1	Stack (hybrid structure) CFRP-aluminium	IMS/HTA + Alloy 2024/6061/7075	v _c (m/min)	75 - 150		75 - 150					
				f _a (mm)	0,05 - 0,25		0,05 - 0,25					
	C5.2	Stack (hybrid structure) CFRP-titanium/stainless steel	IMS/HTA + TiAl6V4/AMS4905	v _c (m/min)		10 - 40	10 - 40					
				f _a (mm)		0,1 - 0,3	0,1 - 0,3					
	S2.1	Titanium, titanium alloy	TiAl6V4	v _c (m/min)		10 - 40	10 - 40					
				f _a (mm)		0,1 - 0,3	0,1 - 0,3					
	S4.1	Heat resistant super alloys, Ni, Co, and Fe based	Hardox, Hastelloy, Incoloy, Inconel, NIMONIC, Stellite, Waspaloy	v _c (m/min)								
				f _a (mm)								

 *) Hand-held machines – feed force is defined by the operator

Machining values Tritan-Drill

The machining values are indicative values.
The optimum data for a particular machining should be determined in trials or during machining.

Material		Strength [N/mm ²] Hardness (HB)	Material examples	Cutting speed v _c [m/min]	
P	Non-alloy steels, cast steel	≤ 600 N/mm ²	St37, St42, C22, GS38	100 - 140	
		≤ 700 N/mm ²	St50, St60, C45, GS62	80 - 120	
		> 700 N/mm ²	St70, C70	60 - 100	
	Alloyed steel	≤ 900 N/mm ²	16MnCr5, 90MnCrV8	60 - 90	
		≤ 1000 N/mm ²	100Cr6, 42CrMo4	55 - 85	
		> 1000 N/mm ²	X210Cr13, 34CrAlNi7	45 - 75	
M	Inox		X5 CrNi 18 9 (V2A),	40 - 70	
	Stainless and acid-resistant steel (Cr-Ni-alloyed)		X10 CrNiMoTi 18 10, G-X40 CrNi 27 4	30 - 60	
K ₁	Grey cast iron, alloyed grey cast iron	≤ 200 N/mm ² / ≤ 180 HB	GG10, GG15	100 - 140	
		≤ 250 N/mm ² / ≤ 220 HB	GG20, GG25, GTW 40	80 - 120	
		≥ 300 N/mm ² / ≥ 260 HB	GG30, GG40, GTS 70	70 - 100	
K ₂	Spheroidal cast iron	≤ 400 N/mm ² / ≤ 160 HB	GGG40	90 - 130	
		≤ 500 N/mm ² / ≤ 200 HB	GGG50	75 - 105	
		≥ 600 N/mm ² / ≥ 250 HB	GGG60, GGG80, GTS 65	65 - 95	
	Vermicular graphite	≤ 400 N/mm ²	GGV Ti	70 - 100	
		≥ 500 N/mm ²	GGV Ti	60 - 85	
	ADI cast iron	≤ 800 N/mm ²	ADI 800	50 - 70	
		≥ 1200 N/mm ²	ADI 1200	45 - 55	
N	Aluminium (Si content < 10 %)		GD-AlSi9Cu3, AlSi7Mg0,6	120 - 250	
	Aluminium (Si content > 10 %)		GD-AlSi12(Cu), AlSi17Cu4Mg (Alusil)	150 - 300	
	Copper, brass, bronze	< 300 HB	G-CuZn15, CuZn37, CuSn8	100 - 250	

* Feed values for drill diameters not listed can be interpolated.

	SCD44 (5xD) internal coolant supply 					
	*Recommended feed rate f [mm/U] for diameter range					
	5 mm	6,8 mm	8,5 mm	12 mm	16 mm	20 mm
	0,28 - 0,34	0,36 - 0,44	0,43 - 0,53	0,57 - 0,69	0,70 - 0,86	0,82 - 1,00
	0,26 - 0,31	0,33 - 0,40	0,40 - 0,48	0,52 - 0,64	0,64 - 0,79	0,75 - 0,91
	0,23 - 0,28	0,30 - 0,37	0,36 - 0,44	0,47 - 0,58	0,59 - 0,72	0,68 - 0,83
	0,23 - 0,28	0,30 - 0,37	0,36 - 0,44	0,47 - 0,58	0,59 - 0,72	0,68 - 0,83
	0,21 - 0,25	0,27 - 0,33	0,32 - 0,40	0,43 - 0,52	0,53 - 0,65	0,61 - 0,75
	0,18 - 0,23	0,24 - 0,29	0,29 - 0,35	0,38 - 0,46	0,47 - 0,57	0,54 - 0,67
	0,15 - 0,19	0,21 - 0,25	0,25 - 0,31	0,34 - 0,41	0,42 - 0,51	0,48 - 0,59
	0,11 - 0,14	0,15 - 0,18	0,18 - 0,22	0,24 - 0,29	0,30 - 0,36	0,34 - 0,42
	0,35 - 0,43	0,47 - 0,58	0,58 - 0,70	0,77 - 0,94	0,95 - 1,16	1,10 - 1,34
	0,31 - 0,38	0,41 - 0,50	0,50 - 0,62	0,67 - 0,82	0,83 - 1,02	0,96 - 1,17
	0,28 - 0,34	0,37 - 0,45	0,45 - 0,55	0,61 - 0,74	0,75 - 0,92	0,86 - 1,05
	0,35 - 0,43	0,47 - 0,58	0,58 - 0,70	0,77 - 0,94	0,95 - 1,16	1,10 - 1,34
	0,31 - 0,38	0,41 - 0,50	0,50 - 0,62	0,67 - 0,82	0,83 - 1,02	0,96 - 1,17
	0,28 - 0,34	0,37 - 0,45	0,45 - 0,55	0,61 - 0,74	0,75 - 0,92	0,86 - 1,05
	0,35 - 0,43	0,47 - 0,58	0,58 - 0,70	0,77 - 0,94	0,95 - 1,16	1,10 - 1,34
	0,31 - 0,38	0,41 - 0,50	0,50 - 0,62	0,67 - 0,82	0,83 - 1,02	0,96 - 1,17
	0,28 - 0,34	0,37 - 0,45	0,45 - 0,55	0,61 - 0,74	0,75 - 0,92	0,86 - 1,05
	0,28 - 0,34	0,37 - 0,45	0,45 - 0,55	0,61 - 0,74	0,75 - 0,92	0,86 - 1,05
	0,45 - 0,55	0,59 - 0,72	0,72 - 0,88	0,96 - 1,17	1,18 - 1,45	1,37 - 1,67
	0,45 - 0,55	0,59 - 0,72	0,72 - 0,88	0,96 - 1,17	1,18 - 1,45	1,37 - 1,67
	0,40 - 0,49	0,53 - 0,65	0,65 - 0,79	0,86 - 1,05	1,07 - 1,31	1,23 - 1,50

Machining values Milling

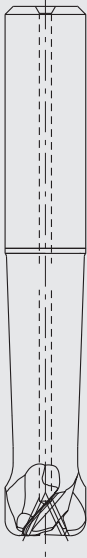
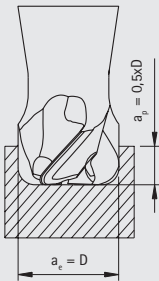
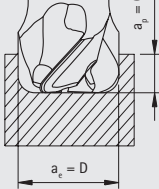
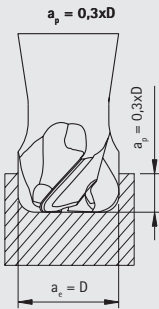
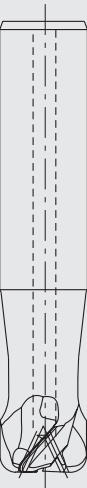
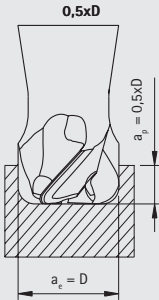
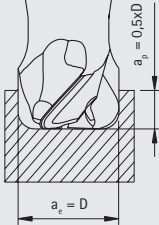
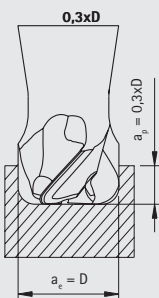
				OptiMill-Composite-MT	OptiMill-Composite-Speed	OptiMill-Composite-Quadro	OptiMill-Composite-TwinCut	OptiMill-Composite-SF	OptiMill-Hardfoam	OptiMill-Thermoplastic			
Material			Material examples		ø4-20 mm	ø4-20 mm	ø6-20 mm	ø4-20 mm	ø4-16 mm	ø3-20 mm	ø3-20 mm		
N	N1.1	Aluminium, non-alloyed and alloyed < 3 % Si	Alloy 2024, Alloy 7075, Al99	v_c (m/min)									
				f_z (mm)									
	N3.1	Graphite		v_c (m/min)		120 - 250	100 - 180						
				f_z (mm)		0,02 - 0,07	0,05 - 0,1						
	N4.1	Plastic, thermoplastic	PA, PE, PC, PS, PVC, PP, PTFE, POM, PMMA	v_c (m/min)						150 - 300			
				f_z (mm)						0,02 - 0,1			
	N4.2	Plastic, thermosetting plastic (duroplast)	PU, PF, EP, UP, VE, CR	v_c (m/min)		120 - 250	100 - 180						
				f_z (mm)		0,02 - 0,07	0,05 - 0,1						
	N4.3	Plastic, foam	EPS, PUR, PVC-E, PS-E, PP-E	v_c (m/min)					350 - 500	150 - 800			
				f_z (mm)					0,01 - 0,03	0,01 - 0,03			
	C	C1.1	Plastic matrix, aramid fibre reinforced plastic (AFK)	Nomex, Kevlar, Twaron, KOREX	v_c (m/min)				90 - 120				
					f_z (mm)				0,05 - 0,15				
C1.2		Plastic matrix (thermosetting), CFRP/GFRP	IMS, HTA	v_c (m/min)	100 - 180	120 - 250							
				f_z (mm)	0,02 - 0,1	0,02 - 0,07							
C1.3		Plastic matrix (thermoplastic), CFRP/GFRP	GMT-PP, PEEK	v_c (m/min)									
				f_z (mm)									
C2.1		Carbon matrix, carbon fibre reinforced (CFC)	CF222, CF225, CF226, CF227, CF260	v_c (m/min)		120 - 250	100 - 180						
				f_z (mm)		0,02 - 0,07	0,05 - 0,1						
C4.1		Sandwich construction, honeycomb core of paper		v_c (m/min)									
				f_z (mm)									
C4.2		Sandwich construction, honeycomb core of aluminium	PLASCORE PAMG-XR1 5052, PCGA-XR1 3003, PAMG-XR1 5056, Micro-Cell (Alloy core of 5052/5056)	v_c (m/min)									
				f_z (mm)									
C4.3		Sandwich construction, honeycomb core of plastic and fibre composite materials	CORMASTER, TUBUS, KOREX, HFT-G, TPU, HFT, HRH (HRH-10, HRH-310, HRH-78, HRH-49, HRH-327), HDC-F	v_c (m/min)									
				f_z (mm)									
C4.4	Sandwich construction, core of rigid foam	AIREX R63, AIREX C70, ROHACELL IG-F	v_c (m/min)										
			f_z (mm)										
C5.1	Stack (hybrid structure) CFRP-aluminium	IMS/HTA + Alloy 2024/6061/7075	v_c (m/min)										
			f_z (mm)										
S	S2.1	Titanium, titanium alloy	TiAl6V4	v_c (m/min)									
				f_z (mm)									
	S4.1	Heat resistant super alloys, Ni, Co, and Fe based	Hardox, Hastelloy, Incoloy, Inconel, NIMONIC, Stellite, Waspaloy	v_c (m/min)									
				f_z (mm)									

	OptiMill- Thermoplastic- FR	OptiMill-Honey- comb	OptiMill- Composite- UD	OptiMill- Composite- Micro	OptiMill- Mono-Plastic	HP-Endmill- Composite- Trimming	HP-EndMill- Composite- Scarffing	OptiMill®-Titan					PCD face milling cutter
	ø4-20 mm	ø4-20 mm	ø4-20 mm	ø1-3 mm	ø2-12 mm	ø11-20 mm	ø20 mm	ø6-8 mm	ø8-10 mm	ø10,-12 mm	ø12-14 mm	ø16-20 mm	ø63-400 mm
													250 - 5000
													0,1 - 1
				110 - 150									
				0,01 - 0,02									
	150 - 300				350 - 450								
	0,05 - 0,1				0,02 - 0,04								
				110 - 150	100 - 250	250 - 800	350 - 1000						250 - 800
				0,01 - 0,02	0,02 - 0,05	0,05 - 0,12	0,06 - 0,16						0,05 - 0,5
			200 - 800	110 - 150		250 - 800	350 - 1000						250 - 800
			0,05 - 0,2	0,01 - 0,02		0,05 - 0,12	0,06 - 0,16						0,05 - 0,5
	150 - 300												
	0,05 - 0,1												
						250 - 800	350 - 1000						250 - 800
						0,05 - 0,12	0,06 - 0,16						0,05 - 0,5
		250 - 450											
		0,01 - 0,03											
		250 - 450											
		0,01 - 0,03											
		250 - 450											
		0,01 - 0,03											
						250 - 800	350 - 1000						250 - 800
						0,05 - 0,12	0,06 - 0,16						0,05 - 0,5
								60 - 140	60 - 140	60 - 140	60 - 140	60 - 140	
								0,03 - 0,04	0,04 - 0,05	0,06 - 0,06	0,06 - 0,08	0,08 - 0,1	
								30 - 80	30 - 80	30 - 80	30 - 80	30 - 80	
								0,01 - 0,02	0,01 - 0,02	0,02 - 0,03	0,04 - 0,05	0,06 - 0,08	

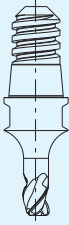
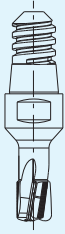
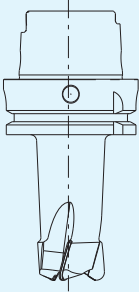
Machining values SPM Mills

High volume machining for aluminium components



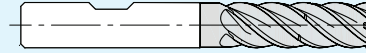
Material			Material examples		OptiMill-SPM						
N	N1.1	Aluminium, non-alloyed and alloyed < 3 % Si	Al 7075. 6063,2024 ...	Ramping angle 5°			Ø-range	6 - 12	14 - 16	18 - 25	32
							v_c (m/min)	225 - 865	450 - 1125	600 - 1760	1050 - 2250
						$f_{z\ max}$ (mm)	0,25	0,29	0,32	0,33	
							Ø-range	6 - 12	14 - 16	18 - 25	32
							v_c (m/min)	225 - 865	450 - 1125	600 - 1760	1050 - 2250
							$f_{z\ max}$ (mm)	0,31	0,35	0,38	0,39
N	N1.1	Aluminium, non-alloyed and alloyed < 3 % Si	Al 7075. 6063,2024 ...			Ø-range	-	14 - 16	18 - 25	32	
						v_c (m/min)	-	450 - 1125	600 - 1760	1050 - 2250	
					$f_{z\ max}$ (mm)	-	0,32	0,35	0,36		
						Ø-range	-	14 - 16	18 - 25	32	
						v_c (m/min)	-	450 - 1125	600 - 1760	1050 - 2250	
						$f_{z\ max}$ (mm)	-	0,38	0,41	0,42	

Note: By volume milling with high material removal rates base the cutting values on the performance potential of the machine.

															
	CPMill-SPM				OptiMill-Diamond-SPM				CPMill-Diamond-SPM				OptiMill-Diamond-SPM HSK- A63		
	3 - 6	6 - 12	14 - 16	18 - 25	6 - 12	14 - 16	18 - 25	32	4 - 6	6 - 12	14 - 16	18 - 25	-	-	-
	150 - 565	300 - 1000	335 - 845	450 - 1320	300 - 1150	600 - 1500	800 - 2350	1400 - 3000	150 - 565	300 - 1000	370 - 930	495 - 1320	-	-	-
	0,19	0,24	0,25	0,28	0,21	0,25	0,28	0,29	0,19	0,22	0,27	0,3	-	-	-
	3 - 6	6 - 12	14 - 16	18 - 25	6 - 12	14 - 16	18 - 25	32	3 - 6	6 - 12	14 - 16	18 - 25	-	-	-
	150 - 565	300 - 1000	335 - 845	450 - 1320	300 - 1150	600 - 1500	800 - 2350	1400 - 3000	150 - 565	300 - 1000	370 - 930	495 - 1320	-	-	-
	0,22	0,27	0,31	0,34	0,27	0,31	0,34	0,35	0,22	0,26	0,33	0,36	-	-	-
	-	-	14 - 16	18 - 25	-	14 - 16	18 - 25	32	-	-	14 - 16	18 - 25	32		
	-	-	370 - 930	495 - 1450	-	600 - 1500	800 - 2350	1400 - 3000	-	-	370 - 930	495 - 1450	1400 - 3000		
	-	-	0,27	0,3	-	0,28	0,31	0,32	-	-	0,25	0,28	0,24		
	-	-	14 - 16	18 - 25	-	14 - 16	18 - 25	32	-	-	14 - 16	18 - 25	32	40	50
	-	-	370 - 930	495 - 1450	-	600 - 1500	800 - 2350	1400 - 3000	-	-	370 - 930	495 - 1450	1400 - 3000	1700 - 3800	1900 - 4500
	-	-	0,33	0,36	-	0,34	0,37	0,38	-	-	0,31	0,34	0,28	0,29	0,3

Machining values trochoidal milling cutter

The machining values shown are indicative values. The optimum data for a particular machining process should be determined in trials or during machining.

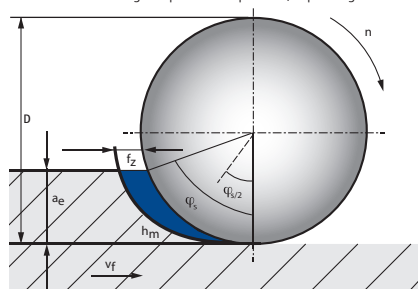


		Strength [N/mm ²] Hardness (HB)	Examples	Cutting speed v_c [m/min]	Feed per tooth f_z [mm] % of D	Cutting width a_e [mm] % of D	Average chip thickness h_m [mm] % of D	Cooling	Machining example
Material									
P	Non-alloy steels, cast steel	≤ 600 N/mm ²	St37	380 - 520	2,3 % - 2,7 %	15 % - 20 %	0,66 % - 0,8 %	Air	16 MnCr5 ϕ 12 mm $v_c = 500$ m/min $f_z = 0,28$ mm $a_e = 1,8$ mm $a_p = 32$ mm 42CrMo4 ϕ 12 mm $v_c = 375$ m/min $f_z = 0,17$ mm $a_e = 1,2$ mm $a_p = 32$ mm
		≤ 700 N/mm ²	C45	360 - 500	2,2 % - 2,6 %	12 % - 18 %	0,62 % - 0,76 %	Air	
		> 700 N/mm ²	St70	340 - 480	2,0 % - 2,4 %	10 % - 16 %	0,58 % - 0,71 %	Air	
	Alloyed steel	≤ 900 N/mm ²	16MnCr5	320 - 460				Air	
		≤ 1000 N/mm ²	42CrMo4	280 - 380	1,5 % - 2,2 %	8 % - 14 %	0,54 % - 0,65 %	Air	
		> 1000 N/mm ²	X210Cr13	210 - 320	1,2 % - 1,9 %	6 % - 12 %	0,52 % - 0,62 %	Air	
M	Inox							Air	X5CrNi18-8 ϕ 12 mm $v_c = 180$ m/min $f_z = 0,09$ mm $a_e = 1,2$ mm $a_p = 32$ mm
	Stainless and acid-resistant steel (Cr-Ni alloy)		X5 CrNi 18 9 (V2A), X10 CrNiMoTi 18 10	130 - 220	0,6 % - 1 %	6 % - 12 %	0,46 % - 0,62 %	Luft	
N	Aluminium (Si content < 10%)	≤ 400 N/mm ²	Al 7075	450 - 750	2,0 % - 2,8 %	30 % - 45 %	1,8 % - 2,2 %	Emulsion	Al 2124-T851 ϕ 16 mm $v_c = 685$ m/min $f_z = 0,22$ mm $a_e = 6$ mm $a_p = 35$ mm
	Aluminium (Si content > 10%)	≤ 400 N/mm ²	AlSi12	400 - 600	1,8 % - 2,6 %	25 % - 40 %	1,6 % - 2 %	Emulsion	
	Copper, brass, bronze	≤ 300 HB	CuZn15	250 - 450	1,6 % - 2,4 %	20 % - 35 %	1,4 % - 1,8 %	Emulsion	
S	Titanium alloys		TiAl6V4	90 - 160	0,65 % - 1,3 %	6 % - 12 %	0,46 % - 0,62 %	Emulsion	TiAl6V4 ϕ 12 mm $v_c = 140$ m/min $f_z = 0,09$ mm $a_e = 1,2$ mm $a_p = 30$ mm
	Nickel alloys		Inconel 718	50 - 100	0,4 % - 1,2 %	3 % - 9 %	0,42 % - 0,56 %	Emulsion	
H	Hardened steel	50 - 60 HRC	hardened and tempered	50 - 130	0,30 % - 0,63 %	5 % - 12 %	0,38 % - 0,45 %	Air	90MnCrV8 $v_c = 112$ m/min $f_z = 0,052$ mm $h_m = 0,04$ mm $a_e = 0,1-1,0$ mm

* With trochoidal milling, the cutting conditions indicated change during the machining process. This is also dependent on the CAM software used and the machining position of the tool in the workpiece. Feed rate and cutting width or pressure angle change constantly during the machining process in order to achieve the most constant average chip thickness possible, depending on the contour.

$$\text{Pressure angle } \varphi_s \quad \cos \varphi_s = 1 - \frac{2 \cdot a_e}{D}$$

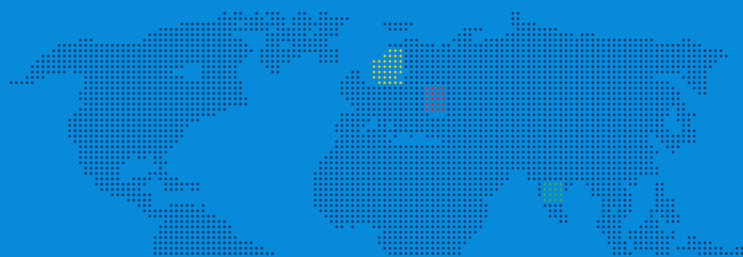
$$\text{Average chip thickness } h_m \quad h_m = f_z \cdot \sqrt{\frac{a_e}{D}} \quad [\text{mm}]$$





For this milling technology, ADD ENGINEERING is extending its OptiMill® product family. Trochoidal milling in combination with the new OptiMill® allows cutting edge lengths of 3xD that that could not be achieved with conventional tools to date. Specially designed unequal spacing (U spacing) of the five cutting edges combined with an innovative geometrical design of the cutting wedge reduces the excitation of vibration. Balancing (balancing quality 2.5) undertaken during the manufacturing process further reduces such the patent-applied milling cutter can even be used at extremely high spindle speeds without problems. So that with the greater cutting depths now possible, jamming does not occur due to the long chips produced in the process, the tool designers have also

integrated a chip breaker that cuts the chips in half. This from the machine compartment. A special tool adapter is not required for trochoidal milling using the ADD ENGINEERING milling cutters. However, if the potential of trochoidal milling and the new milling cutter is to be fully exploited, it is recommended to use the new ADD ENGINEERING HTC chuck. The chuck combines the very good damping properties of hydraulic chucking technology with the high holding forces of shrinking technology. The HTC reliably transmits high torques. Even heating to 170° does not affect the HTC chuck, as milling trials have confirmed.



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