C6 COMPOSITE TOOLING

Product Catalog

COMPOSITE TOOLING

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INDUSTRY SOLUTIONS: AEROSPACE

Our milling, tracing and countersinking units (TFA and TSA) as well as our angle heads are used worldwide to economically process components for the aerospace industry.

- One-shot countersinks in composites and/or aluminum
- Machining of honeycomb materials in engine casings
- Insertion of grooves with tolerated depth, e.g. a circumferential groove on an engine housing
- Milling and drilling at inaccessible locations

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COMPOSITE TOOLING
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COMPOSITE TOOLING

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C6 VHW STRAIGHT & CURVE SAW

TOOL DESIGN

- VHW Saw for economical machining of composite components
- Due to the new tooth design the highest feed rates can be achieved with the best cut quality.
- Narrow cutting widths produce low dust emissions
- Saws with cutting widths from 2.5 mm can be used for 5-axis machining, thus curves can be sawed.

APPLICATIONS

For processing materials with high and low fiber content:

- RTM
- Prepreg
- Thermosets
- Copper mesh
- Elastic overlays
- Honeycomb
- SMC

Part No.	Ø	Cutting Width	Max. Material Thickness	Mounting Ø	Version
60002250	40	1,2 + 0,2	5	10	straight
60001930	70	1,2 + 0,2	10	16	straight
60003163	70	2 + 0,2	15	16	straight & curve
60003467	90	2 + 0,2	20	22	straight & curve

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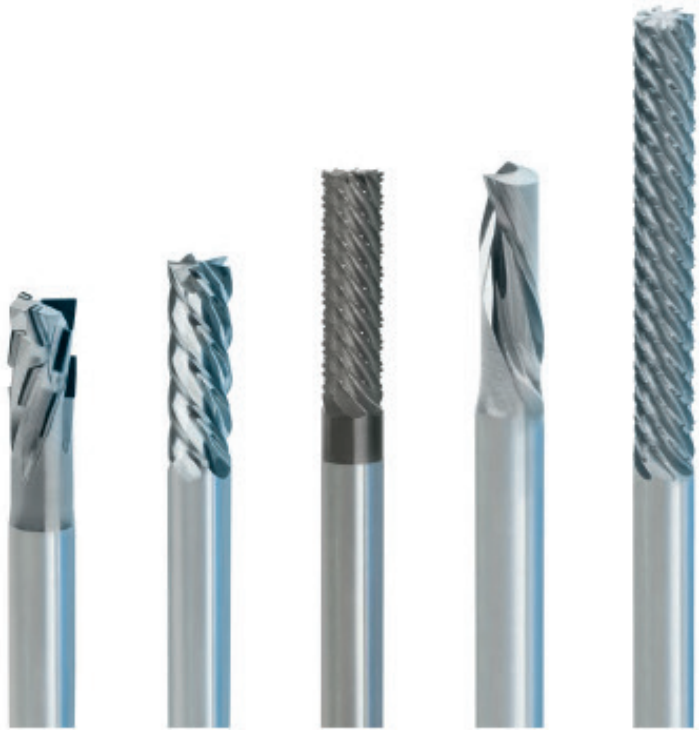
MILLING TOOLS

Our milling cutter solutions address almost every milling application for processing modern lightweight materials. Applications for our milling tools include machining delamination-free edges in CFRP, finishing a wide variety of honeycomb materials, and machining carbon-ceramic or glass fiber reinforced plastics (GRP).

APPLICATIONS

- Milling of CFRP (carbon fiber reinforced plastic) components in series production with long service life due to special diamond coatings
- Milling of SMC (Sheet Molding Compound) components in series production without reworking the milled edge (no manual grinding process required)
- Milling of CSMC (Carbon Sheet Molding Compound) components in series production
- Milling honeycombs in the aerospace industry
- Milling of aluminum profiles in rail industry

COMPOSITE TOOLING



C6 THERMOPLASTIC MILLING CUTTER

TOOL DESIGN

- VHW tool body made of tungsten carbide specially suited for processing thermoplastics
- The cutting edge geometry, the polished chip or free surfaces and the positive twist angle ensure an exceptionally good milling result
- Roughing: n = 18000 - 24000, vf = 2 - 6 m/min
- Finishing (climb): n = 18000 - 24000, vf = 0.1 - 0.4 m/min, lateral infeed ae = 0.1mm
- With the chamfer milling cutters it is possible with n = 18000 1/min and vf = 1m/min to create tear-free through-hole bores

APPLICATION

- For processing thermoplastics such as PMMA, PC, PE, PP, PS, ABS and PVC
- Taking the machining parameters into account, an almost transparent narrow surface is achieved with acrylic glass in conjunction with good workpiece and tool clamping
- In principle, it makes sense to cool the machining process by supplying compressed air for materials with a low melting point

Part No.	Ø	Cutting Length	Shank Ø	Total Length	Rotation Dir.	Flutes
60002436	2	5	6	50	right	1
60002437	4	15	6	50	right	1
60002438	6	20	6	60	right	1
60002439	8	25	8	70	right	1
60002441	10	30	10	70	right	1
60002442	6	20	6	60	right	1
60002443	8	25	8	70	right	1
60002444	6	20	6	60	right	3
60002445	8	30	8	70	right	5
60002446	10	40	10	80	right	5
60002447	2	5	6	50	right	1
60002448	4	15	6	50	right	1
60002449	6	20	6	60	right	1
60002450	8	25	8	70	right	1
60002458	10	30	10	70	right	1
60002459	6	5	6	60	right	1
60002460	6	5	6	60	right	1

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C6 DEVILCUT HONEYCOMB SPIRAL MILLING CUTTER

TOOL DESIGN

- VHW spiral milling cutter made of ultra-fine grain tungsten carbide
- Multi-flute fine chip cutting blades guarantee an almost overhang-free milling of narrow honeycomb surfaces
- Available in RL-RD or as dual-cut milling cutter for tear-free upper and lower edges
- Also available with appropriate coating on request

APPLICATION

- For the machining of lightweight construction materials with honeycomb core, which can consist of aluminum, Nomex materials, thermoplastics or fiber plastics

Part No.	Ø	Spiral Length	Shank Ø	Total Length	Rotation Dir.
60002461	3	12	3	40	right
60002463	4	16	5	40	right
60002464	5	20	5	50	right
60002465	6	24	6	50	right
60002466	7	28	8	60	right
60002467	8	32	8	60	right
60002468	9	36	10	70	right
60002469	10	40	10	70	right
60002470	11	44	12	80	right
60002471	12	48	12	90	right
60002472	13	52	14	100	right
60002473	14	56	14	100	right
60002474	15	60	16	110	right
60002475	16	64	16	115	right
60002476	17	68	18	125	right
60002477	18	72	18	125	right
60002478	19	76	20	140	right
60002479	20	80	20	140	right
60002480	21	84	25	160	right
60002481	22	88	25	160	right
60002482	23	92	25	160	right
60002483	24	96	25	170	right
60002484	25	100	25	170	right

C6 VHW FIBERSTAR

TOOL DESIGN

- Multi-flute rougher with integrated back toothing and alternating axis angle
- Ultra-fine grain tungsten carbide structure for long service life, optionally with diamond-coating to increase service life
- Otherwise the flutes are polished to ensure an optimal chip evacuation
- The tool is end cutting in order to dive axially or helically into the component

APPLICATION

- For optimum machining results in the machining of fiber composite materials
- Especially for the processing of CFRP-RTM or wet-pressed components
- Separation cuts, in particular the milling of contours, with high demands on the narrow surface and edge quality
- No delaminations, tears and fiber protrusions

SAP-No.	Ø	Spiral Length	Shank Ø	Total Length	Diamond Coating	Rotation Dir.
60002485	3	10	3	40	-	right
60002486	4	10	5	40	-	right
60002487	5	12	5	50	-	right
60002488	6	15	6	50	-	right
60002489	8	20	8	70	-	right
60002490	10	25	10	70	-	right
60002491	12	30	12	70	-	right
60002492	3	10	3	40	x	right
60002493	4	10	5	40	x	right
60002494	5	12	5	50	x	right
60002495	6	15	6	50	x	right
60002496	8	20	8	70	x	right
60002497	10	25	10	70	x	right
60002498	12	30	12	70	x	right

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C6 DP-TRITEC AND DIATEC 4 QUATTRO

FINISHING CUTTERS

TOOL DESIGN

- Stable carbide base body equipped with polished PCD cutting edges for machining fiber composite materials
- Design as rough-finish combination
- Alternating pairs of cutting edges to achieve good edge quality and narrow surfaces.
- The tool is shaped on the front side to immerse axially or helically

APPLICATION

- Cutting, trimming and finishing milling of CFRP and GFRP fiber composite materials
- Long tool life for CFRP and GFRP materials, with high demands on cutting quality

Part No.	Ø	Spiral Length	Shank Ø	Total Length	Flutes	Rotation Dir.
60002990	5	8	5	50	1	right
60002991	5	8	5	50	2	right
60002992	6	12	6	60	1	right
60002993	6	12	6	60	2	right
60002994	6	12	6	60	3	right
60002995	8	20	8	70	1	right
60002996	8	20	8	70	2	right
60002997	8	20	8	70	3	right
60002998	8	20	8	70	4	right
60002999	10	25	10	75	2	right
60003000	10	25	10	75	3	right
60003001	10	25	10	75	4	right
60003002	12	30	12	80	3	right
60003003	12	30	12	80	3 + 3	right
60003004	12	30	12	80	4	right

C6 DP-TRITEC AND DIATEC 4 QUATTRO

ROUGHING-FINISH MILLING CUTTER

TOOL DESIGN

- Stable carbide base body equipped with polished PCD cutting edges for machining fiber composite materials
- Design as rough-finish combination
- Alternating pairs of cutting edges to achieve good edge quality and narrow surfaces.
- The tool is shaped on the front side to immerse axially or helically

APPLICATION

- Cutting, trimming and finishing milling of CFRP and GFRP fiber composite materials
- Long tool life for CFRP and GRP materials, with high demands on cutting quality

Part No.	Ø	Spiral Length	Shank Ø	Total Length	Flutes	Rotation Dir.
60003005	5	8	5	50	1	right
60003006	5	8	5	50	2	right
60003007	6	12	6	60	1	right
60003008	6	12	6	60	2	right
60003009	6	12	6	60	3	right
60003010	8	20	8	70	1	right
60003011	8	20	8	70	2	right
60003012	8	20	8	70	3	right
60003013	8	20	8	70	4	right
60003014	10	25	10	75	2	right
60003015	10	25	10	75	3	right
60003016	10	25	10	75	4	right
60003017	12	30	12	80	3	right
60003018	12	30	12	80	3 + 3	right
60003019	12	30	12	80	4	right

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C6 DP AERO

TOOL DESIGN

- Stable carbide base body equipped with PCD cutting edges polished on the chip and free surfaces, the composition of which is matched to the machining of fiber composite materials.
- The cutting edge pairs are arranged alternately to reduce cutting forces and to achieve good edge quality and narrow surfaces.
- The tool is shaped on the front side so that it can be inserted axially or helically.
- Available with internal cooling on request

APPLICATION

- Cutting, trimming and finishing milling of CFRP and GFRP fiber composite materials
- Long tool life with high demands on cut quality
- Also suitable for CFC processing

Part No.	Ø	Cut width	Shank Ø	Total Length	Tooth Count	Internal Cooling	Prot. Bevel	Rotation Dir.
60000756	6	10	8	75	8	-	0,5	right
60000599	6	15	8	75	8	-	0,5	right
60000751	6	10	8	75	8	-	0,5	right
60000598	6	15	8	75	3	-	0,5	right
60000757	8	20	8	75	4	-	0,5	right
60000758	8	25	8	75	4	-	0,5	right
60000768	10	20	10	75	4	-	0,5	right
60000769	10	25	10	75	4	-	0,5	right
60000775	12	20	12	75	4	-	0,5	right
60000772	12	25	12	75	4	-	0,5	right
60000458	8	20	8	64	4	x	0,5	right
60000526	10	20	10	73	4	x	0,5	right

C6 DP MOTIVCUT

TOOL DESIGN

- PCD tool with VHW base body
- Alternately designed CFRP cutting edge which was supplemented by finishing edge. By this combination reworking poor cutting surfaces with good tool life can be produced
- Version with and without through coolant available

APPLICATION

- Machining of CFRP materials with Kevlar components or warp threads
- For CFRP components which can only be machined with carbide to a limited extent

Part No.	Ø	Cut width	Shank Ø	Total Length	Internal Cooling	Prot. Bevel	Rotation Dir.
60001987	8	15	8	63	x	0	right
60001986	5	15	8	63	-	0	right
60001654	8	15	8	63	-	0	right

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MOTIVCUT MC1

TOOL DESIGN

- VHW milling cutters especially for machining CFRP series components in the automotive industry
- Long tool life, very good cut quality and high running smoothness even with thin-walled components (<1 mm thickness)
- Available with diamond coating on request
- Rework-free to rework-free edge processing also for the machining of auxiliary and warp threads
- Different tip shapes possible

APPLICATION

- Optimum machining results in the area of machining prepreg and RTM fiber composites, especially when high demands are placed on the narrow surface and the edge quality

SAP-No.	Geo	Ø	Cut width	Shank Ø	Total Length	Tooth Count	Prot. Bevel	Rotation Dir.
60000465	MC1	4	15	6	60	2 + 2	0,5	right
60000832	MC1	4	20	6	60	2 + 2	0,5	right
60000856	MC1	6	15	6	60	4 + 2	0,5	right
60000857	MC1	6	20	6	60	4 + 2	0,5	right
60000858	MC1	6	25	6	65	4 + 2	0,5	right
60000430	MC1	8	15	8	75	6 + 2	1	right
60000859	MC1	8	20	8	75	6 + 2	1	right
60000860	MC1	8	25	8	75	6 + 2	1	right
60000861	MC1	8	30	8	80	6 + 2	1	right
60000500	MC1	10	15	10	75	6 + 2	1	right
60000862	MC1	10	20	10	75	6 + 2	1	right
60000863	MC1	10	25	10	75	6 + 2	1	right
60000525	MC1	10	30	10	75	6 + 2	1	right
60000864	MC1	10	35	10	75	6 + 2	1	right
60000865	MC1	12	15	12	80	6 + 2	1	right
60000543	MC1	12	20	12	80	6 + 2	1	right
60000866	MC1	12	25	12	80	6 + 2	1	right
60000867	MC1	12	30	12	80	6 + 2	1	right
60000868	MC1	12	35	12	85	6 + 2	1	right

C6 MOTIVCUT MC2

TOOL DESIGN

- VHW milling cutters with micro finishing edges for minimizing the influence of forces on the component surface, avoiding delamination and break-outs and good narrow surface quality
- The cutting edge design differs from that of conventional rasp cutters. Even the tools marked with the suffix "f" contain very small, defined cutting edges. These are provided with different spiral angles so that individual requirements can be met.
- The left-hand twist angle produces a better cutting edge on the upper side.
- Available of different tip shapes possible
- Tools in fine, medium and coarse available

APPLICATION

- CFRP components with high resin content in the surface, in particular with brittle resin
- Very well suited for 5-axis simultaneous machining with strong swivel movements
- The one-sided spiral produces a slightly better edge quality on one side. This is of considerable advantage when machining non-orthogonal cut surfaces (to the component surface)

Part No.	Geo	Ø	Cutting Length	Total Length	Shank Ø	Wings	Drill Bit	Coating	Prot. Bevel
60001371	MC2g	4	16	60	6	3	-	-	0,5
60001915	MC2g	5	16	63	8	4	-	Diamond	0,5
60001131	MC2g	6	15	75	6	4	-	-	1
60001362	MC2g	6	15	80	6	4	-	-	1
60001432	MC2g	6	20	60	6	4	-	-	1
60001965	MC2g	6	20	70	6	4	x	-	-
60001476	MC2g	8	16	63	8	4	-	-	1
60001680	MC2g	8	16	63	8	4	-	Diamond	1
60000973	MC2g	8	16	75	8	4	-	-	1
60002093	MC2g	8	16	75	8	4	x	Diamond	-
60001966	MC2g	8	20	70	8	4	x	-	-
60002015	MC2g	8	20	70	8	4	x	Diamond	-
60001851	MC2g	8	20	72	10	4	-	-	1
60001935	MC2g	8	20	75	8	4	-	-	1
60002040	MC2g	8	20	75	8	4	x	Diamond	-
60001047	MC2g	8	30	75	8	4	-	-	1
60001894	MC2g	10	26	100	10	4	-	-	1
60001441	MC2g	10	32	70	10	4	-	-	1
60002037	MC2m	4	11	60	6	4	-	-	0,5
60001919	MC2m	5	16	63	8	4	-	Diamond	0,5
60001696	MC2m	6	20	50	6	4	x	-	-

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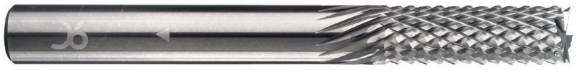
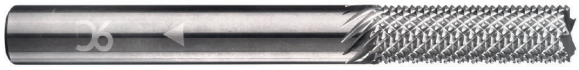
C6 MOTIVCUT MC2

(CONTINUED)

Part No.	Geo	Ø	Cutting Length	Total Length	Shank Ø	Wings	Drill Bit	Coating	Prot. Bevel
60001961	MC2m	6	20	65	6	4	-	-	1
60002064	MC2m	6	20	70	6	4	x	-	-
60001795	MC2m	6	25	65	6	4	-	-	1
60001737	MC2m	6	25	70	6	4	x	-	-
60001738	MC2m	6	25	70	6	4	-	-	1
60001891	MC2m	8	16	63	8	4	-	Diamond	1
60001705	MC2m	8	20	60	8	4	x	-	-
60002044	MC2m	8	20	70	8	4	x	Diamond	-
60002048	MC2m	8	20	70	8	4	x	-	-
60002063	MC2m	8	20	72	8	4	-	-	1
60001853	MC2m	8	20	72	10	4	-	-	1
60001715	MC2m	8	20	75	8	4	-	-	1
60001740	MC2m	8	25	65	8	4	-	-	1
60001739	MC2m	8	30	80	8	4	-	-	1
60001863	MC2m	10	20	75	10	4	-	-	1
60001895	MC2m	10	26	100	10	4	-	-	1

C6 MOTIVCUT MC3





TOOL DESIGN

- Cutting edge geometry comparable with motive cut MC3 design. The difference lies in the counter-rotating cutting edges. The spiral angle direction changes from wing to wing. There are also large chip spaces between the blades.
- Due to alternating spiral angles, in addition to good fiber separation, the same cutting quality is achieved on the upper and lower sides of the component
- The simple design makes the tool a good all-rounder.
- Various tip shapes can be produced
- Tools in fine, medium and coarse available

APPLICATION

- Suitable for many fiber composite materials
- CFRP embedded non-ferrous metals are effectively machined in the separation cut
- The tool can also be used in GRP components and SMC applications

Part No.	Geo	Ø	Cutting Length	Total Length	Shank Ø	Spiral Angle	Twist	Prot. Bevel	Rotation Dir.
60001069	MC3m	6	25	60	6	25°	left	0	right
60002049	MC3m	6	25	65	6	25°	left	0	right
60000551	MC3f	8	25	75	8	45°	right	0	right
60000990	MC3m	8	25	75	8	25°	left	0	right
60001903	MC3f	8	25	75	8	45°	left	0	right
60002060	MC3f	8	32	75	8	45°	right	0	right
60001856	MC3m	10	32	70	10	25°	left	0	right
60001443	MC3m	12	36	100	12	25°	left	0	right

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C6 MOTIVCUT MC4

TOOL DESIGN

- VHW tool with polished chip faces for the ideal machining of SMC materials
- Excellent surfaces can be achieved by matching the chipbreaker and spiral angle
- Large chip spaces can also capture the chips at larger feeds
- Available of different tip shapes possible

APPLICATION

- SMC materials can be cut economically by good cut quality at effective feeds
- Also suitable for easily machinable CFRP materials from the automotive sector

Part No.	Geo	Ø	Cutting Length	Total Length	Shank Ø	Wings	Drill Bit	Spiral Angle	Prot. Bevel
60002079	MC4f	8	32	75	8	4	-	45°	1
60001132	MC4g	6	20	75	6	4	-	5°	1
60001076	MC4g	8	20	75	8	4	-	5°	1
60001075	MC4g	8	30	80	8	4	-	5°	1
60001778	MC4m	3	12	60	6	2	-	25°	0,3
60002054	MC4m	3	12	60	6	2	x	25°	-
60002055	MC4m	4	12	60	6	2	x	25°	-
60002068	MC4m	4	12	60	6	2	-	25°	0,3
60002052	MC4m	6	25	60	6	4	-	25°	1
60002053	MC4m	6	25	60	6	4	x	25°	-
60001960	MC4m	6	25	65	6	4	-	25°	0,3
60001606	MC4m	6	25	70	6	4	-	25°	1
60001607	MC4m	6	25	70	6	4	x	25°	-
60001608	MC4m	6	25	70	6	4	-	25°	0,4
60001852	MC4m	8	20	72	10	4	-	25°	1
60002062	MC4m	8	25	63	8	4	-	25°	1
60001584	MC4m	8	25	65	8	4	-	25°	1
60001604	MC4m	8	25	70	8	4	x	25°	-
60001553	MC4m	8	25	75	8	4	-	25°	1
60001893	MC4m	10	26	100	10	4	-	25°	1

C6 MOTIVCUT SMC

TOOL DESIGN

- VHW tool with polished chip faces for the ideal machining of SMC materials
- Excellent surfaces can be achieved by matching the chipbreaker and spiral angle
- Large chip spaces can also capture the chips at larger feeds
- Available of different tip shapes possible

APPLICATION

- SMC materials can be cut economically by good cut quality at effective feeds
- Also suitable for easily machinable CFRP materials from the automotive sector

Part No.	Geo	Ø	Cutting Length	Total Length	Shank Ø	Drill Bit	Prot. Bevel
60002372	SMC	3	12	60	6	170	right
60002374	SMC	6	15	70	8	170	right
60002404	SMC	4	12	60	6	170	right
60002337	SMC	8	32	75	8	170	right

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C6 VHW PROFILE TOOLS

TOOL DESIGN

- Radius milling cutter made of VHW
- Polished chip surfaces ensure good chip removal in combination with tactile units
- Suitable for drilling in CFRP, RTM, or wet-pressed components

APPLICATION

- Application of radii in the automotive sector
- visible edges on vehicle parts can be produced in combination with tactile units

Part No.	Radius	Ø	Cutting Length	Total Length	Shank Ø	Tooth Count	Prot. Bevel
60002056	0,3	7	5	60	12	3	right
60001791	1,5	7	5	60	12	3	right
60001671	1,5	7	5	60	12	3	right
60001429	2	7	5	60	12	3	right
60001077	2	8	5	60	12	3	right
60002078	2,5	7	5	60	12	3	right
60001351	3	6	6	60	12	3	right

C6 COMPLETE SOLUTIONS: TOOLS FOR AGGREGATES

TOOL DESIGN

- Designed for rework-free machining of aluminum
- The chip and free surfaces are polished in order to avoid the tendency to build up the cutting edge
- The use of minimum quantity lubrication is recommended
- In combination with tactile aggregates, these tools are components of our economical system solutions

APPLICATION

- Machining of aluminum profiles of any kind

Part No.	Usage	Version	Ø	Cut width	Total Length	Shank Ø	Int. Cooling	Radius	Rotation Dir.
60001639	weld seam	HW soldered	40	9,8	65	20	x	1	right
60001180	weld seam	VHW	25	10	65	22	x	1	right
60001714	weld seam	VHW	25	10	65	22	-	1	right
10202729	front profi le	HW soldered	108	41	41	30	x	3	right
10204013	front profi le	HW soldered	70	19	19	20	x	3	right
10215563	footbridge	HW soldered	58	26	26	20	x	5	right
10206849	footbridge	HW soldered	58	26	26	20	x	2	right
10205146	footbridge	HW soldered	32	26	26	20	x	2	right

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COMPOSITE TOOLING

CNC ROUTER AGGREGATES

Tailor-made complete solutions consisting of aggregate and tool for automated machining of lightweight and composite materials.

C6 ANGLE UNIT WA

Angle head for drilling and milling fiber composites, aluminum or hybrid material composites. The sophisticated design allows working with high continuous torque.

APPLICATION

- Drilling and milling of components made of various materials
- Individual connection of the unit to your tool spindle
- Automated changeover of the unit via tool changer
- Drilling and milling tools adapted to your application

SAP-No.: 60002419

C6 ANGLE SAW UNIT WSA

Oil bath lubricated "workhorse" consisting of angle head and saw blade for working with high continuous torque.

APPLICATION

- Milling of components made of fiber composites, aluminum or hybrid material composites. Cross-industry machining of aluminum profiles
- Individual connection of the unit to your tool spindle
- Automated changeover of the unit via tool changer
- Milling tool and feeler bell adapted to your application
- Customized construction of the tool clamping system: ER collets, heat shrink chucks, etc.

SAP-No.: 60002420

C6 HONEYCOMB-SOFT-CUTTER HSC

Complete solution consisting of cutting unit and oscillating carbide blade for fast and clean machining of honeycomb core structures, foams or other pressure-sensitive products.

APPLICATION

- Cutting of honeycomb cores for aerospace, yacht construction and interior fittings for rail vehicles
- Individual connection of the unit to your tool spindle
- Automated changeover of the unit via tool changer
- Cutting blades adapted to your application
- Choice of mechanical or compressed air operated design

SAP-No.: 60002421

C6 KEY-LOWER UNIT TSA

Complete solution consisting of sensing unit and drilling tool for process-reliable insertion of one-shot drill countersinks or countersinks in components with material-related thickness fluctuations or shape deviations.

SAP-No.: 60002417

APPLICATION

- Drill countersinking of components made of fiber composites, aluminum or hybrid material composites
- Individual connection to your tool spindle
- Automated tool change via tool changer
- Drilling tool and touch bell adapted to your application
- Customized construction of the tool clamping system: ER collets, heat shrink chucks, etc.
- Highest performance in continuous operation

C6 TACTILE MILLING UNIT TFA

Complete solution consisting of sensing unit and milling tool for reliable machining of, for example, grooves, chamfers or edge radii in components with material-related thickness fluctuations or shape deviations.

SAP-No.: 60002418

APPLICATION

- Milling of components made of fiber composites, aluminum or hybrid material composites. Cross-industry machining of aluminum profiles
- Individual connection of the unit to your tool spindle
- Automated changeover of the unit via tool changer
- Milling tool and feeler bell adapted to your application
- Customized construction of the tool clamping system: ER collets, heat shrink chucks, etc.

COMPOSITE TOOLING

C6 DRILLING TOOLS

Due to a special diamond coating, our drilling tools offer a particularly long service life in the machining of:

- CFRP components
- Stacks (CFRP-Al, Al-CFRP, CFRP-Al-CFRP or Al-CFRP-Al)
- SMC components without reworking the milled edge
- CSMC components in series production
- Honeycomb components in the aerospace industry
- Aluminum profiles in rail industry

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C6 TRIDUR STEP DRILL / CFRP

UTILITY MODEL PROTECTION

Version: Z2

Version: Z3

TOOL DESIGN

- VHW drilling tools in Z2 or Z3 made of ultra-fine grain tungsten carbide for long tool life when machining fiber composite materials such as CFRP and GRP
- Patented drill geometry with special peripheral cutting edges. These are designed in such a way that delamination-, tear- and burr-free drilling is possible
- On request also available with cooling channels and in diamond-coated version

APPLICATION

- For drilling thermosets and thermoplastics or fiber composites (CFRP and GFRP) from different compositions
- Depending on the type of machine (CNC-controlled or robot or hand-held machine) which is connected to the cutting process, the cutting geometry is designed accordingly
- Also suitable for the production of pilot holes

Part No.	Ø	Rivet Joint	Spiral Length	Shank Ø	Shank Length	Total Length	Flutes	Levels
60002499	2	-	10	3	35	50	2	0
60002500	2,49	3/32"	12	3	33	50	2	0
60002501	2,75	-	14	3	41	60	2	0
60002502	3	-	15	3	40	60	3	0
60002503	3,175 (1/8")	-	15	3,175	50	70	3	0
60002504	3,25	1/8"	16	4	49	70	3	0
60002505	3,3	-	17	4	49	70	3	0
60002506	4	-	20	4	45	70	3	0
60002507	4,04	5/32"	20	5	45	70	3	0
60002508	4,1	-	21	5	45	70	3	0
60002509	4,17	-	21	5	54	80	3	0
60002510	4,5	-	23	5	53	80	3	0
60002511	4,763 (3/16")	-	23	4,763	52	80	3	1
60002512	4,85	3/16"	24	5	51	80	3	1
60002513	4,9	-	25	5	51	80	3	1
60002514	5	-	25	5	50	80	3	1
60002516	5,05	-	25	6	50	80	3	1
60002517	5,3	-	27	6	49	80	3	1
60002518	5,5	-	28	6	48	80	3	1

C6 TRIDUR STEP DRILL / CFRP

UTILITY MODEL PROTECTION (CONTINUED)

Part No.	Ø	Rivet Joint	Spiral Length	Shank Ø	Shank Length	Total Length	Flutes	Levels
60002519	6	-	30	6	55	90	3	1
60002520	6,35 (1/4")	-	30	6,35	55	90	3	1
60002521	6,53	1/4"	33	8	52	90	3	1
60002522	7	-	35	8	50	90	3	1
60002523	7,5	-	38	8	48	90	3	1
60002524	7,938 (15/16")	-	38	7,938	47	90	3	1
60002525	8	-	40	8	55	100	3	2
60002526	8,03	5/16"	40	10	55	100	3	2
60002527	8,5	-	43	10	53	100	3	2
60002528	9	-	45	10	50	100	3	2
60002529	9,5	-	48	10	48	100	3	2
60002530	9,525 (3/8")	-	48	9,525	47	100	3	2
60002531	9,58	3/8"	48	10	47	100	3	2
60002532	10	-	50	10	45	100	3	2
60002533	10,5	-	53	12	63	120	3	2
60002534	11	-	55	12	60	120	3	2
60002535	11,11 (7/16")	-	55	11,11	60	120	3	2
60002536	11,5	-	58	12	58	120	3	2
60002537	12	-	60	12	55	120	3	2

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C6 ALUDUR STEP DRILL / CFRP-ALU

TOOL DESIGN

- VHW drilling tools in Z2 made of ultra-fine grain tungsten carbide for long tool life when machining titanium-CFRP stacks
- Special drill geometry, designed for delamination-, crack- and burr-free operation
- On request also available with cooling channels and in diamond-coated version

APPLICATION

- For drilling thermosets and thermoplastics or fiber composites from different compositions (stacks)
- Depending on the machine type (CNC-controlled or robot or hand-guided machine) which is connected to the cutting process, the cutting edge geometry is designed accordingly.
- Also suitable for the production of pilot holes

Part No.	Ø	Rivet Joint	Spiral Length	Shank Ø	Shank Length	Total Length	Flutes	Levels
60002538	2	-	10	3	35	50	2	0
60002539	2,49	3/32"	12	3	33	50	2	0
60002540	2,75	-	14	3	41	60	2	0
60002541	3	-	15	3	40	60	2	0
60002542	3,175 (1/8")	-	15	3,175	50	70	2	0
60002543	3,25	1/8"	16	4	49	70	2	0
60002544	3,3	-	17	4	49	70	2	0
60002545	4	-	20	4	45	70	2	0
60002546	4,04	5/32"	20	5	45	70	2	0
60002547	4,1	-	21	5	45	70	2	0
60002548	4,17	-	21	5	54	80	2	0
60002549	4,5	-	23	5	53	80	2	0
60002550	4,763 (3/16")	-	23	4,763	52	80	2	0
60002551	4,85	3/16"	24	5	51	80	2	0
60002552	4,9	-	25	5	51	80	2	0
60002553	5	-	25	5	50	80	2	0
60002554	5,05	-	25	6	50	80	2	0
60002555	5,3	-	27	6	49	80	2	0
60002556	5,5	-	28	6	48	80	2	0

C6 ALUDUR STEP DRILL / CFRP-ALU

(CONTINUED)

Part No.	Ø	Rivet Joint	Spiral Length	Shank Ø	Shank Length	Total Length	Flutes	Levels
60002557	6	-	30	6	55	90	2	0
60002558	6,35 (1/4")	-	30	6,35	55	90	2	0
60002559	6,53	1/4"	33	8	52	90	2	0
60002560	7	-	35	8	50	90	2	0
60002561	7,5	-	38	8	48	90	2	0
60002562	7,938 (15/16")	-	38	7,938	47	90	2	0
60002563	8	-	40	8	55	100	2	0
60002564	8,03	5/16"	40	10	55	100	2	1
60002565	8,5	-	43	10	53	100	2	1
60002566	9	-	45	10	50	100	2	1
60002567	9,5	-	48	10	48	100	2	1
60002568	9,525 (3/8")	-	48	9,525	47	100	2	1
60002569	9,58	3/8"	48	10	47	100	2	1
60002570	10	-	50	10	45	100	2	1
60002571	10,5	-	53	12	63	120	2	1
60002572	11	-	55	12	60	120	2	1
60002573	11,11 (7/16")	-	55	11,11	60	120	2	1
60002574	11,5	-	58	12	58	120	2	1
60002575	12	-	60	12	55	120	2	1

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C6 TIDUR STEP DRILL / CFRP-TI

TOOL DESIGN

- DP equipped drilling tools with VHW basic body for long tool life when machining CFRP components
- Special drill geometry, designed for delamination-, crack- and burr-free operation

APPLICATION

- For drilling thermosets and thermoplastics or fiber composites from different compositions (CFRP, GFRP, SMC, ...)
- Depending on the type of machine (CNC-controlled or robot) which is connected to the cutting process, the cutting geometry is designed accordingly.

Part No.	Ø	Rivet Joint	Spiral Length	Shank Ø	Shank Length	Total Length	Flutes	Levels
60002576	2	-	10	3	35	50	2	0
60002577	2,49	3/32"	12	3	33	50	2	0
60002578	2,75	-	14	3	41	60	2	0
60002579	3	-	15	3	40	60	2	0
60002580	3,175 (1/8")	-	15	3,175	50	70	2	0
60002581	3,25	1/8"	16	4	49	70	2	0
60002582	3,3	-	17	4	49	70	2	0
60002583	4	-	20	4	45	70	2	0
60002584	4,04	5/32"	20	5	45	70	2	0
60002585	4,1	-	21	5	45	70	2	0
60002586	4,17	-	21	5	54	80	2	0
60002587	4,5	-	23	5	53	80	2	0
60002588	4,763 (3/16")	-	23	4,763	52	80	2	0
60002589	4,85	3/16"	24	5	51	80	2	0
60002590	4,9	-	25	5	51	80	2	0
60002591	5	-	25	5	50	80	2	0
60002592	5,05	-	25	6	50	80	2	0
60002593	5,3	-	27	6	49	80	2	0
60002594	5,5	-	28	6	48	80	2	0
60002595	6	-	30	6	55	90	2	0
60002596	6,35 (1/4")	-	30	6,35	55	90	2	0
60002597	6,53	1/4"	33	8	52	90	2	0

C6 TIDUR STEP DRILL / CFRP-TI

(CONTINUED)

Part No.	Ø	Rivet Joint	Spiral Length	Shank Ø	Shank Length	Total Length	Flutes	Levels
60002598	7	-	35	8	50	90	2	0
60002599	7,5	-	38	8	48	90	2	0
60002600	7,938 (15/16")	-	38	7,938	47	90	2	0
60002601	8	-	40	8	55	100	2	0
60002602	8,03	5/16"	40	10	55	100	2	1
60002603	8,5	-	43	10	53	100	2	1
60002604	9	-	45	10	50	100	2	1
60002605	9,5	-	48	10	48	100	2	1
60002606	9,525 (3/8")	-	48	9,525	47	100	2	1
60002607	9,58	3/8"	48	10	47	100	2	1
60002608	10	-	50	10	45	100	2	1
60002609	10,5	-	53	12	63	120	2	1
60002610	11	-	55	12	60	120	2	1
60002611	11,11 (7/16")	-	55	11,11	60	120	2	1
60002612	11,5	-	58	12	58	120	2	1
60002613	12	-	60	12	55	120	2	1

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C6 DP DOUBLE CHAMFER DRILL BIT / MEC FEED UNIT

TOOL DESIGN

- VHW drilling and countersinking tools with VHW basic body for long tool life when machining CFRP components
- Special drill geometry, designed for delamination-, crack- and burr-free operation
- Also available with cooling channels and coating on request

APPLICATION

- For drilling and countersinking of thermosets and thermoplastics or fiber composites of different compositions (CFRP, GFRP, SMC etc.)
- Especially suitable for "one shot" riveted joints. Simultaneous precise insertion of rivet setups
- Depending on the type of machine (CNC-controlled or robot), the cutting edge geometry is designed accordingly.

Part No.	Ø	Spiral Length	Shank Ø	Shank Length	Total Length	Flutes	Rotation Dir.
60002614	3	15	3	40	60	2	right
60002615	3,175 (1/8")	15	3,175	50	70	2	right
60002616	3,25	16	4	49	70	2	right
60002617	3,3	17	4	49	70	2	right
60002618	4	20	4	45	70	2	right
60002619	4,04	20	5	45	70	2	right
60002620	4,1	21	5	45	70	2	right
60002621	4,17	21	5	54	80	2	right
60002622	4,5	23	5	53	80	2	right
60002623	4,763 (3/16")	23	4,763	52	80	2	right
60002624	4,85	24	5	51	80	2	right
60002625	4,9	25	5	51	80	2	right
60002626	5	25	5	50	80	2	right
60002627	5,05	25	6	50	80	2	right
60002628	5,3	27	6	49	80	2	right
60002629	5,5	28	6	48	80	2	right
60002630	6	30	6	55	90	2	right
60002631	6,35 (1/4")	30	6,35	55	90	2	right
60002632	6,53	33	8	52	90	2	right
60002633	7	35	8	50	90	2	right
60002634	7,5	38	8	48	90	2	right
60002635	7,938 (15/16")	38	7,938	47	90	2	right
60002636	8	40	8	55	100	2	right

C6 DP DOUBLE CHAMFER DRILL BIT / MEC FEED UNIT

(CONTINUED)

Part No.	Ø	Spiral Length	Shank Ø	Shank Length	Total Length	Flutes	Rotation Dir.
60002637	8,03	40	10	55	100	2	right
60002638	8,5	43	10	53	100	2	right
60002639	9	45	10	50	100	2	right
60002640	9,5	48	10	48	100	2	right
60002641	9,525 (3/8")	48	9,525	47	100	2	right
60002642	9,58	48	10	47	100	2	right
60002643	10	50	10	45	100	2	right
60002644	10,5	53	12	63	120	2	right
60002645	11	55	12	60	120	2	right
60002646	11,11 (7/16")	55	11,11	60	120	2	right
60002647	11,5	58	12	58	120	2	right
60002648	12	60	12	55	120	2	right
60002649	12,7 (1/2")	65	12,7	45	115	2	right
60002650	13	65	16	45	115	2	right
60002651	13,5	65	16	45	115	2	right
60002652	14	65	16	45	115	2	right
60002653	15	70	16	45	120	2	right
60002654	15,88 (5/8")	70	15,88	45	120	2	right
60002655	16	80	16	45	130	2	right
60002656	18	80	20	55	140	2	right
60002657	20	80	20	55	140	2	right
60002658	21	80	25	60	145	2	right
60002659	22	80	25	60	145	2	right
60002660	23	100	25	60	165	2	right
60002661	24	100	25	60	165	2	right
60002662	25	100	25	60	165	2	right
60002663	25,4 (1")	100	25,4	60	165	2	right

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C6 TRIDUR COUNTERSINK / MEC FEED UNIT

TOOL DESIGN

- VHW drilling and countersinking tools with VHW basic body for long tool life when machining CFRP aluminum stacks
- Special drill geometry, designed for delamination-, crack- and burr-free operation
- Also available with cooling channels and coating on requestv

APPLICATION

- For drilling and countersinking of thermosets and thermoplastics or fiber composites of different compositions (CFRP, GFRP, SMC, etc.).
- Especially for riveted joints in connection with aluminum components "one shot" can be used. Simultaneous precise insertion of rivet countersinks
- Depending on the type of machine, the cutting edge geometry is designed accordingly

Part No.	Ø	Rivet Joint	Spiral Length	Shank Ø	Shank Length	Total Length	Flutes	Levels
60002664	2	-	6	3	25	60	2	1
60002665	2,49	3/32"	6	3	25	60	2	1
60002666	2,75	-	6	3	25	60	2	1
60002667	3	-	6	3	25	60	2	1
60002668	3,175 (1/8")	-	6	3,175	25	60	2	1
60002669	3,25	1/8"	8	4	25	60	2	1
60002670	3,3	-	8	4	25	60	2	1
60002671	4	-	12	4	25	60	2	1
60002672	4,04	5/32"	12	5	30	70	3	1
60002673	4,1	-	12	5	30	70	3	1
60002674	4,17	-	12	5	30	70	3	1
60002675	4,5	-	12	5	30	70	3	1
60002676	4,763 (3/16")	-	12	4,763	30	70	3	1
60002677	4,85	3/16"	12	5	30	70	3	1
60002678	4,9	-	12	5	30	70	3	1
60002679	5	-	12	5	30	70	3	1
60002680	5,05	-	12	6	30	70	3	1
60002681	5,3	-	12	6	30	70	3	1
60002682	5,5	-	12	6	30	70	3	1
60002683	6	-	12	6	30	70	3	1

C6 TRIDUR COUNTERSINK / MEC FEED UNIT

(CONTINUED)

Part No.	Ø	Rivet Joint	Spiral Length	Shank Ø	Shank Length	Total Length	Flutes	Levels
60002684	6,35 (1/4")	-	15	6,35	30	70	3	1
60002685	6,53	1/4"	15	8	30	70	3	1
60002686	7	-	15	8	30	70	3	2
60002687	7,5	-	15	8	30	70	3	2
60002688	7,938 (15/16")	-	15	7,938	40	70	3	2
60002689	8	-	15	8	40	80	3	2
60002690	8,03	5/16"	15	10	40	80	3	2
60002691	8,5	-	15	10	40	80	3	2
60002692	9	-	15	10	40	80	3	2
60002693	9,5	-	15	10	40	80	3	2
60002694	9,525 (3/8")	-	15	9,525	40	80	3	2
60002695	9,58	3/8"	15	10	40	80	3	2
60002696	10	-	20	10	40	90	3	2
60002697	10,5	-	20	12	40	100	3	2
60002698	11	-	20	12	40	100	3	2
60002699	11,11 (7/16")	-	20	11,11	40	100	3	2
60002700	11,5	-	20	12	40	100	3	2
60002701	12	-	20	12	40	100	3	2
60002702	12,7 (1/2")	-	20	12,7	40	100	3	3

C6 ALUDUR COUNTERSINK / MEC FEED UNIT

TOOL DESIGN

- VHW drilling and countersinking tools with VHW basic body for long tool life when machining CFRP aluminum stacks
- Special drill geometry, designed for delamination-, crack- and burr-free operation
- Also available with cooling channels and coating on requestv

APPLICATION

- For drilling and countersinking of thermosets and thermoplastics or fiber composites of different compositions (CFRP, GFRP, SMC, etc.).
- Especially for riveted joints in connection with aluminum components "one shot" can be used. Simultaneous precise insertion of rivet countersinks
- Depending on the type of machine, the cutting edge geometry is designed accordingly

Part No.	Ø	Rivet Joint	Spiral Length	Shank Ø	Shank Length	Total Length	Flutes	Levels
60002703	2	-	6	3	25	60	2	0
60002704	2,49	3/32"	6	3	25	60	2	0
60002705	2,75	-	6	3	25	60	2	0
60002706	3	-	6	3	25	60	2	0
60002707	3,175 (1/8")	-	6	3,175	25	60	2	0
60002708	3,25	1/8"	8	4	25	60	2	0
60002709	3,3	-	8	4	25	60	2	0
60002710	4	-	12	4	25	60	2	0
60002711	4,04	5/32"	12	5	30	70	2	0
60002712	4,1	-	12	5	30	70	2	0
60002713	4,17	-	12	5	30	70	2	0
60002714	4,5	-	12	5	30	70	2	0
60002715	4,763 (3/16")	-	12	4,763	30	70	2	0
60002716	4,85	3/16"	12	5	30	70	2	0
60002717	4,9	-	12	5	30	70	2	0
60002718	5	-	12	5	30	70	2	0
60002719	5,05	-	12	6	30	70	2	0
60002720	5,3	-	12	6	30	70	2	0
60002721	5,5	-	12	6	30	70	2	0
60002722	6	-	12	6	30	70	2	0

C6 ALUDUR COUNTERSINK / MEC FEED UNIT

(CONTINUED)

Part No.	Ø	Rivet Joint	Spiral Length	Shank Ø	Shank Length	Total Length	Flutes	Levels
60002723	6,35 (1/4")	-	15	6,35	30	70	2	0
60002724	6,53	1/4"	15	8	30	70	2	0
60002725	7	-	15	8	30	70	2	0
60002726	7,5	-	15	8	30	70	2	0
60002727	7,938 (15/16")	-	15	7,938	40	70	2	0
60002728	8	-	15	8	40	80	2	0
60002729	8,03	5/16"	15	10	40	80	2	0
60002730	8,5	-	15	10	40	80	2	0
60002731	9	-	15	10	40	80	2	0
60002732	9,5	-	15	10	40	80	2	0
60002733	9,525 (3/8")	-	15	9,525	40	80	2	0
60002734	9,58	3/8"	15	10	40	80	2	0
60002735	10	-	20	10	40	90	2	0
60002736	10,5	-	20	12	40	100	2	1
60002737	11	-	20	12	40	100	2	1
60002738	11,11 (7/16")	-	20	11,11	40	100	2	1
60002739	11,5	-	20	12	40	100	2	1
60002740	12	-	20	12	40	100	2	1
60002741	12,7 (1/2")	-	20	12,7	40	100	2	1

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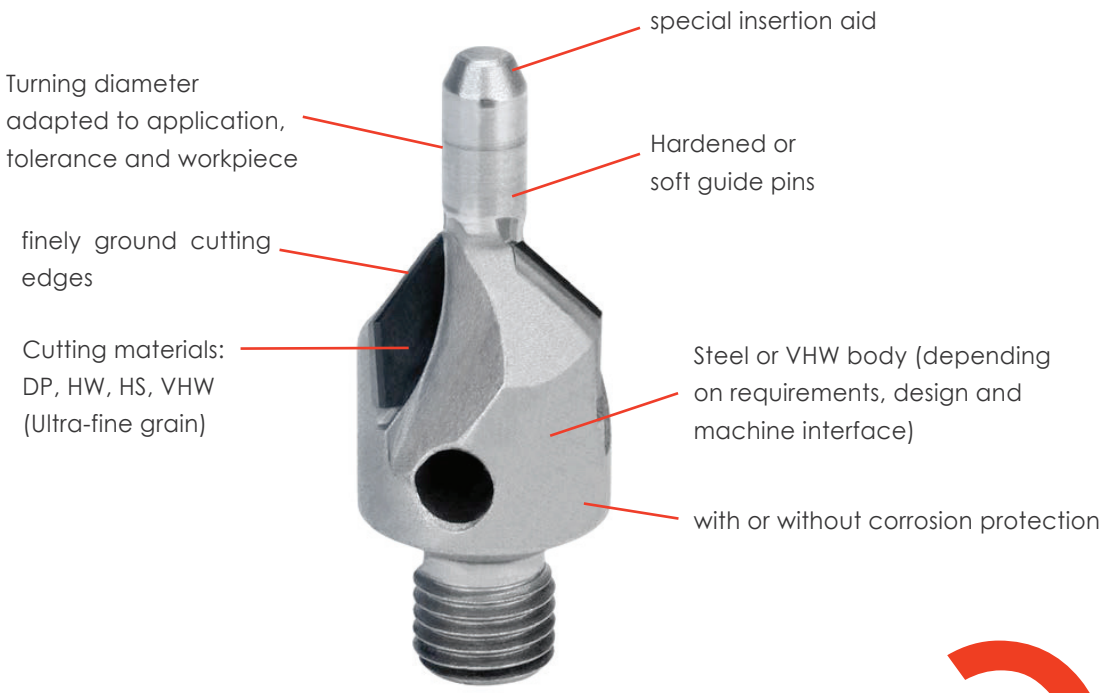
C6 DP COUNTERSINK

Whether designed as a single drill and counterbore or as a combined drill and counterbore solution in one tool, we have an economical solution for all your applications in the field of modern materials. Our aim is to integrate drilling and countersinking operations in one shot, i.e. in one production step, without reworking.

APPLICATION

- Drilling / countersinking of CFRP (carbon fiber reinforced plastic) components in series production with long service life due to special Diamond Coatings
- Drilling / countersinking of stacks (CFRP-Al or Al-CFRP or CFRP-Al-CFRP or Al-CFRP-Al)
- Drilling / countersinking of SMC (Sheet Molding Compound) components in series production without reworking the milled edge (no manual grinding process required)
- Drilling / countersinking of CSMC (Carbon Sheet Molding Compound) components in series production
- Drilling / countersinking honeycombs in the aerospace industry
- Drilling / countersinking of aluminum profiles in rail traffic Aluminum profiles in rail traffic



COMPOSITE TOOLING

C6 DP COUNTERSINK

Part No.	Ø	Ø Pin	Angle	Shank	Total Length	Flutes	Rotation Dir.
60002771	10	2,38	100°	M6 x 1	33	3	right
60002772	10	2,4	100°	M6 x 1	33	3	right
60002773	10	2,5 (1/10")	100°	M6 x 1	33	3	right
60002774	10	3	100°	M6 x 1	33	3	right
60002775	10	3,18 (1/8")	100°	M6 x 1	33	3	right
60002776	10	3,36	100°	M6 x 1	33	3	right
60002777	10	3,5	100°	M6 x 1	33	3	right
60002778	10	3,6	100°	M6 x 1	33	3	right
60002779	10	3,7	100°	M6 x 1	33	3	right
60002780	10	4	100°	M6 x 1	33	3	right
60002781	14	4,15 (1/6")	100°	M8 x 1	36	3	right
60002782	14	4,76 (3/16")	100°	M8 x 1	36	3	right
60002783	14	4,8	100°	M8 x 1	36	3	right
60002784	14	4,81 (1/5")	100°	M8 x 1	36	3	right
60002785	14	4,83	100°	M8 x 1	36	3	right
60002786	14	5	100°	M8 x 1	36	3	right
60002787	14	5,2	100°	M8 x 1	36	3	right
60002788	14	5,6	100°	M8 x 1	36	3	right
60002789	14	5,8	100°	M8 x 1	36	3	right
60002790	14	6	100°	M8 x 1	36	3	right
60002791	14	6,35 (1/4")	100°	M8 x 1	36	3	right
60002792	14	7	100°	M8 x 1	36	3	right
60002793	14	7,5	100°	M8 x 1	36	3	right
60002794	22	7,9	100°	M8 x 1	36	3	right
60002795	22	7,94 (1/3")	100°	M8 x 1	36	3	right
60002796	22	8	100°	M8 x 1	36	3	right
60002797	22	8,5	100°	M8 x 1	36	3	right
60002798	22	9	100°	M8 x 1	36	3	right
60002799	22	9,52 (3/8")	100°	M8 x 1	36	3	right
60002800	22	10	100°	M8 x 1	36	3	right
60002801	22	11,12 (4/9")	100°	M8 x 1	36	3	right
60002802	22	12	100°	M8 x 1	36	3	right
60002803	22	12,7 (1/2")	100°	M8 x 1	36	3	right
60002804	10	2,38	100° + Bevel	M6 x 1	33	3	right
60002805	10	2,4	100° + Bevel	M6 x 1	33	3	right
60002806	10	2,5 (1/10")	100° + Bevel	M6 x 1	33	3	right
60002807	10	3	100° + Bevel	M6 x 1	33	3	right
60002808	10	3,18 (1/8")	100° + Bevel	M6 x 1	33	3	right
60002809	10	3,36	100° + Bevel	M6 x 1	33	3	right
60002810	10	3,5	100° + Bevel	M6 x 1	33	3	right
60002811	10	3,6	100° + Bevel	M6 x 1	33	3	right
60002812	10	3,7	100° + Bevel	M6 x 1	33	3	right
60002813	10	4	100° + Bevel	M6 x 1	33	3	right
60002814	14	4,15 (1/6")	100° + Bevel	M8 x 1	36	3	right
60002815	14	4,76 (3/16")	100° + Bevel	M8 x 1	36	3	right

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C6 DP COUNTERSINK

(CONTINUED)

Part No.	Ø	Ø Pin	Angle	Shank	Total Length	Flutes	Rotation Dir.
60002816	14	4,8	100° + Bevel	M8 x 1	36	3	right
60002817	14	4,81 (1/5")	100° + Bevel	M8 x 1	36	3	right
60002818	14	4,83	100° + Bevel	M8 x 1	36	3	right
60002819	14	5	100° + Bevel	M8 x 1	36	3	right
60002820	14	5,2	100° + Bevel	M8 x 1	36	3	right
60002821	14	5,6	100° + Bevel	M8 x 1	36	3	right
60002822	14	5,8	100° + Bevel	M8 x 1	36	3	right
60002823	14	6	100° + Bevel	M8 x 1	36	3	right
60002824	14	6,35 (1/4")	100° + Bevel	M8 x 1	36	3	right
60002825	14	7	100° + Bevel	M8 x 1	36	3	right
60002826	14	7,5	100° + Bevel	M8 x 1	36	3	right
60002827	22	7,9	100° + Bevel	M8 x 1	36	3	right
60002828	22	7,94 (1/3")	100° + Bevel	M8 x 1	36	3	right
60002829	22	8	100° + Bevel	M8 x 1	36	3	right
60002830	22	8,5	100° + Bevel	M8 x 1	36	3	right
60002831	22	9	100° + Bevel	M8 x 1	36	3	right
60002832	22	9,52 (3/8")	100° + Bevel	M8 x 1	36	3	right
60002833	22	10	100° + Bevel	M8 x 1	36	3	right
60002834	22	11,12 (4/9")	100° + Bevel	M8 x 1	36	3	right
60002835	22	12	100° + Bevel	M8 x 1	36	3	right
60002836	22	12,7 (1/2")	100° + Bevel	M8 x 1	36	3	right
60002837	10	2,38	130°	M6 x 1	33	3	right
60002838	10	2,4	130°	M6 x 1	33	3	right
60002839	10	2,5 (1/10")	130°	M6 x 1	33	3	right
60002840	10	3	130°	M6 x 1	33	3	right
60002841	10	3,18 (1/8")	130°	M6 x 1	33	3	right
60002842	10	3,36	130°	M6 x 1	33	3	right
60002843	10	3,5	130°	M6 x 1	33	3	right
60002844	10	3,6	130°	M6 x 1	33	3	right
60002845	10	3,7	130°	M6 x 1	33	3	right
60002846	10	4	130°	M6 x 1	33	3	right
60002847	14	4,15 (1/6")	130°	M8 x 1	36	3	right
60002848	14	4,76 (3/16")	130°	M8 x 1	36	3	right
60002849	14	4,8	130°	M8 x 1	36	3	right
60002850	14	4,81 (1/5")	130°	M8 x 1	36	3	right
60002851	14	4,83	130°	M8 x 1	36	3	right
60002852	14	5	130°	M8 x 1	36	3	right
60002853	14	5,2	130°	M8 x 1	36	3	right
60002854	14	5,6	130°	M8 x 1	36	3	right
60002855	14	5,8	130°	M8 x 1	36	3	right
60002856	14	6	130°	M8 x 1	36	3	right
60002857	14	6,35 (1/4")	130°	M8 x 1	36	3	right
60002858	14	7	130°	M8 x 1	36	3	right
60002859	14	7,5	130°	M8 x 1	36	3	right

C6 DP COUNTERSINK

(CONTINUED)

Part No.	Ø	Ø Pin	Angle	Shank	Total Length	Flutes	Rotation Dir.
60002860	22	7,9	130°	M8 x 1	36	3	right
60002861	22	7,94 (1/3")	130°	M8 x 1	36	3	right
60002862	22	8	130°	M8 x 1	36	3	right
60002863	22	8,5	130°	M8 x 1	36	3	right
60002864	22	9	130°	M8 x 1	36	3	right
60002865	22	9,52 (3/8")	130°	M8 x 1	36	3	right
60002866	22	10	130°	M8 x 1	36	3	right
60002867	22	11,12 (4/9")	130°	M8 x 1	36	3	right
60002868	22	12	130°	M8 x 1	36	3	right
60002869	22	12,7 (1/2")	130°	M8 x 1	36	3	right
60002870	10	2,38	130° + Bevel	M6 x 1	33	3	right
60002871	10	2,4	130° + Bevel	M6 x 1	33	3	right
60002872	10	2,5 (1/10")	130° + Bevel	M6 x 1	33	3	right
60002873	10	3	130° + Bevel	M6 x 1	33	3	right
60002874	10	3,18 (1/8")	130° + Bevel	M6 x 1	33	3	right
60002875	10	3,36	130° + Bevel	M6 x 1	33	3	right
60002876	10	3,5	130° + Bevel	M6 x 1	33	3	right
60002877	10	3,6	130° + Bevel	M6 x 1	33	3	right
60002878	10	3,7	130° + Bevel	M6 x 1	33	3	right
60002879	10	4	130° + Bevel	M6 x 1	33	3	right
60002880	14	4,15 (1/6")	130° + Bevel	M8 x 1	36	3	right
60002881	14	4,76 (3/16")	130° + Bevel	M8 x 1	36	3	right
60002882	14	4,8	130° + Bevel	M8 x 1	36	3	right
60002883	14	4,81 (1/5")	130° + Bevel	M8 x 1	36	3	right
60002884	14	4,83	130° + Bevel	M8 x 1	36	3	right
60002885	14	5	130° + Bevel	M8 x 1	36	3	right
60002886	14	5,2	130° + Bevel	M8 x 1	36	3	right
60002887	14	5,6	130° + Bevel	M8 x 1	36	3	right
60002888	14	5,8	130° + Bevel	M8 x 1	36	3	right
60002889	14	6	130° + Bevel	M8 x 1	36	3	right
60002890	14	6,35 (1/4")	130° + Bevel	M8 x 1	36	3	right
60002891	14	7	130° + Bevel	M8 x 1	36	3	right
60002892	14	7,5	130° + Bevel	M8 x 1	36	3	right
60002893	22	7,9	130° + Bevel	M8 x 1	36	3	right
60002894	22	7,94 (1/3")	130° + Bevel	M8 x 1	36	3	right
60002895	22	8	130° + Bevel	M8 x 1	36	3	right
60002896	22	8,5	130° + Bevel	M8 x 1	36	3	right
60002897	22	9	130° + Bevel	M8 x 1	36	3	right
60002898	22	9,52 (3/8")	130° + Bevel	M8 x 1	36	3	right
60002899	22	10	130° + Bevel	M8 x 1	36	3	right
60002900	22	11,12 (4/9")	130° + Bevel	M8 x 1	36	3	right
60002901	22	12	130° + Bevel	M8 x 1	36	3	right
60002902	22	12,7 (1/2")	130° + Bevel	M8 x 1	36	3	right

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C6 DP COUNTERSINK WITH EXCHANGEABLE GUIDE PINS

TOOL DESIGN

- DP-equipped countersinking tools in Z=3 design
- Special cutting edge geometries and shapes for long tool life with replaceable solid carbide guide pins to minimize constriction and surface wear
- The repair set includes all 8 basic body versions with the matching guide pins

APPLICATION

- Use in manual or semi-automatic guided drill feed units (BVE). For countersinking of rivet holes.
- The application spectrum covers a wide range of different material compositions
- This countersinking tool meets the following requirements when machining aluminum, titanium, CFRP, GRP or other fiber composite materials

Part No.	Ø	Ø Pin	Angle	Shank	Total Length	Flutes	Rotation Dir.
60002903	10	2,38 - 4	100°	M6 x 1	33	3	right
60002904	10	5-Apr	100°	M6 x 1	33	3	right
60002905	14	2,38 - 4	100°	M8 x 1	36	3	right
60002906	14	5-Apr	100°	M8 x 1	36	3	right
60002907	14	6-May	100°	M8 x 1	36	3	right
60002908	14	10-Jun	100°	M8 x 1	36	3	right
60002909	22	6-May	100°	M8 x 1	36	3	right
60002910	22	10-Jun	100°	M8 x 1	36	3	right
60002911	10	2,38 - 4	130°	M6 x 1	33	3	right
60002912	10	5-Apr	130°	M6 x 1	33	3	right
60002913	14	2,38 - 4	130°	M8 x 1	36	3	right
60002914	14	5-Apr	130°	M8 x 1	36	3	right
60002915	14	6-May	130°	M8 x 1	36	3	right
60002916	14	10-Jun	130°	M8 x 1	36	3	right
60002917	22	6-May	130°	M8 x 1	36	3	right
60002918	22	10-Jun	130°	M8 x 1	36	3	right

C6 DP COUNTERSINK WITH EXCHANGEABLE GUIDE PINS

GK1 + GK4

Part No.	Ø Pin
60003020	2,38
60002919	2,4
60002920	2,5 (1/10")
60002921	3
60002922	3,18 (1/8")
60002923	3,36
60002924	3,5
60002925	3,6
60002926	3,7
60002927	4
60002928	4,15 (1/6")
60002929	4,76 (3/16")
60002930	4,8
60002931	4,81 (1/5")
60002932	4,83
60002933	5

GK2 + GK5

Part No.	Ø Pin
60002934	2,38
60002935	2,4
60,002,936	2,5 (1/10")
60002937	3
60002938	3,18 (1/8")
60,002,939	3,36
60002940	3,5
60002941	3,6
60,002,942	3,7
60002943	4
60002944	4,15 (1/6")
60002945	4,76 (3/16")
60002946	4,8
60002947	4,81 (1/5")
60002948	4,83
60002949	5
60002950	5,2
60002951	5,6
60002952	5,8
60002953	6
60002954	6,35 (1/4")
60002955	7
60002956	7,5
60002957	7,9
60002958	7,94 (1/3")
60002959	8
60002960	8,5
60002961	9
60002962	9,52 (3/8")
60002963	10

GK3 + GK6

Part No.	Ø Pin
60002964	3,18 (1/8")
60002965	3,36
60002966	3,5
60002967	3,6
60002968	3,7
60002969	4
60002970	4,15 (1/6")
60002971	4,76 (3/16")
60002972	4,8
60002973	4,81 (1/5")
60002974	4,83
60002975	5
60002976	5,2
60002977	5,6
60002978	5,8
60002979	6
60002980	6,35 (1/4")
60002981	7
60002982	7,5
60002983	7,9
60002984	7,94 (1/3")
60002985	8
60002986	8,5
60002987	9
60002988	9,52 (3/8")
60002989	10

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INDUSTRY SOLUTIONS: AUTOMOTIVE

Our aggregates and Premium Cutting Tools for machining carbon and SMC components can be designed specifically for your unique specifications.

- Rework-free machining of edge radii on body components, e.g. front covers or bonnets
- Rework-free insertion of cut-outs with edge radius, e.g. at the cut-out of a third brake light lamp
- Insertion of grooves with tolerated depth, e.g. groove for fastening spoilers
- Drilling and countersinking in one shot
- Milling and drilling at inaccessible locations

C6 COMPOSITE TOOLING
WWW.C6TOOLING.COM

COMPOSITE TOOLING

C6 COMPOSITE TOOLING

Product Catalog

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