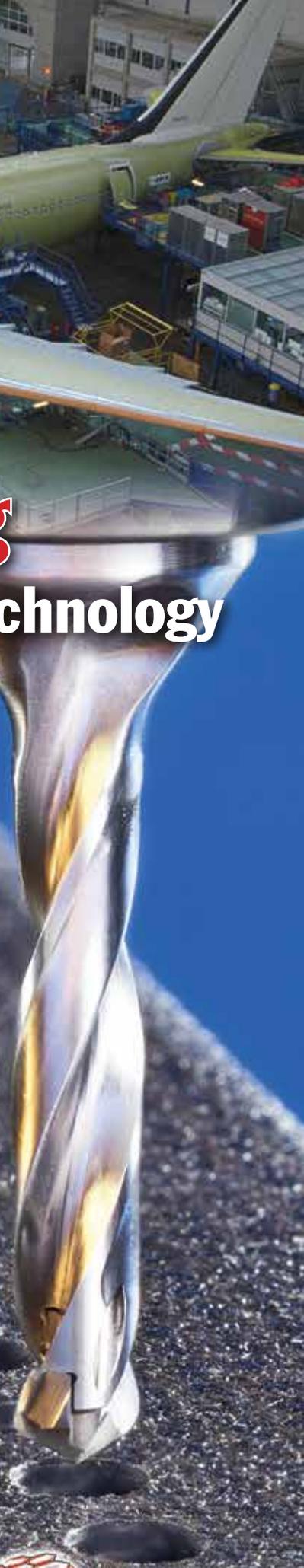




CFRP Machining with ISCAR's State-of-the-Art Technology





for Each **Composite** Material Type

ISCAR has established a CFRP machining Tech-Center with high-end technology of prototype design, testing and quality assurance



From design to production in one easy step. A multi-axis SAACKE **grinding machine** together with an advanced grinding simulator enables fast production and new design implementations.



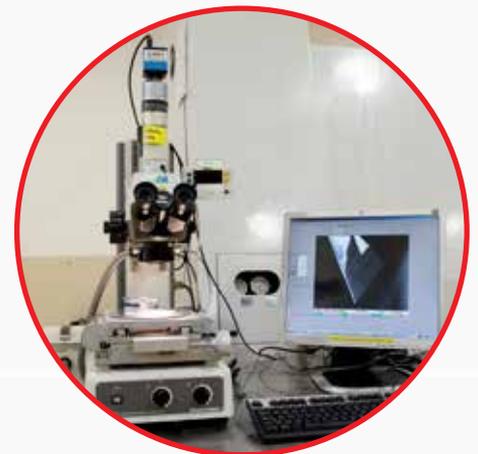
Special Supporting Device for Automated Drilling Unit (ADU) imitating field conditions as in the aerospace industry.



High speed camera provides the ability to examine different aspects of the tool's function and the influence of the drilling process over the material.

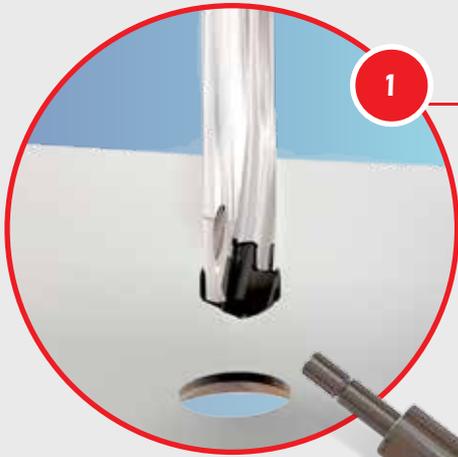


Kistler system enables measuring pressure, forces, acceleration and torques that influence the tool's function and tool life.



An integrated **high resolution camera and microscope** for a closer look. Both the tools and the parts are thoroughly examined to ensure the highest product quality and the utmost functioning.

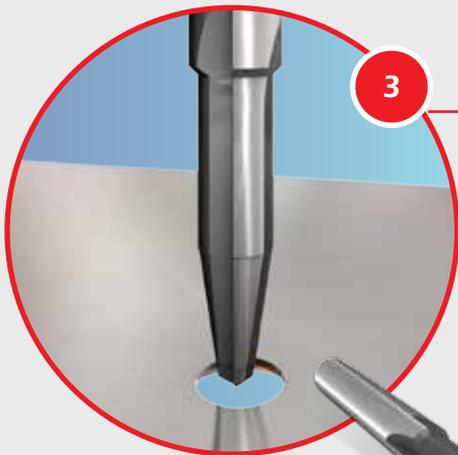
Milling Edging and Trimming



Drilling

SUMOCHAM CHAMDRILL LINE

An **exchangeable** drill for ADU/CNC machines. Provides repeatable and accurate holes without burr or delamination.

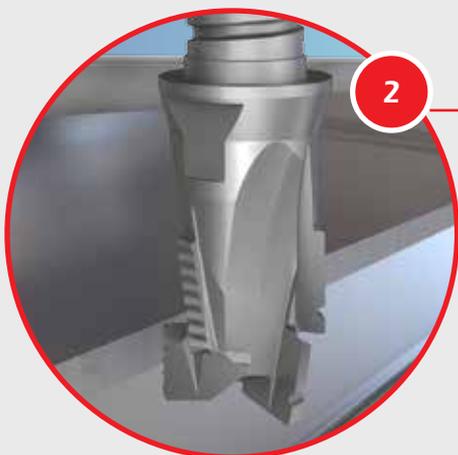


Drilling

SOLIDDRILL PREMIUM LINE

Micrograin carbide with **diamond coating** for longer tool life. Lower tangential forces, eliminates delamination.

Vc=60-150 m/min,
200-500 ft/min
Fz=0.015-0.025 mm/t,
0.0006-0.001 ipt



Milling

SOLIDMILL SOLID CARBIDE LINE

Solid carbide interchangeable heads for side, facing, trimming, rampdown and orbital milling.

Vc=100-150 m/min
330-500 ft/min
Fz=0.02-0.06 mm/t,
0.008-0.024 ipt



Composite Materials



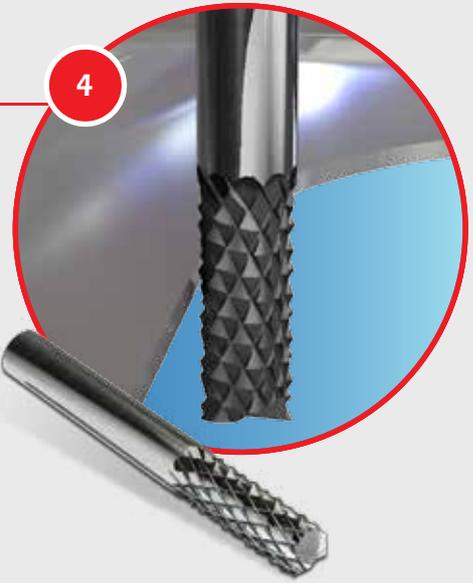
Milling

SOLIDMILL SOLID CARBIDE LINE

EPNC

Diamond coated drilling and milling tool. Right and left spiral for rough trimming.

Vc=100-150 m/min
330-500 ft/min
Fz=0.03-0.1 mm/t,
0.001-0.004 ipt



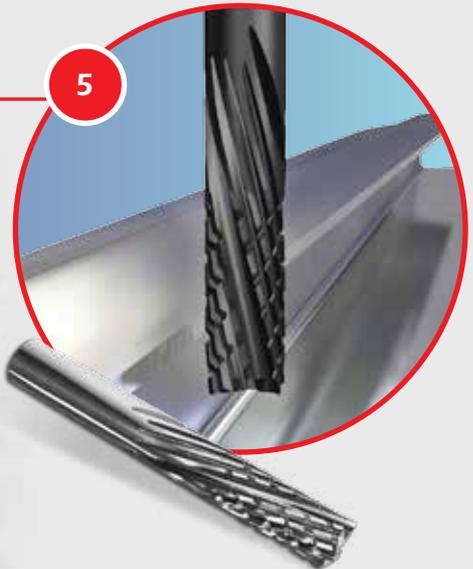
Milling

SOLIDMILL SOLID CARBIDE LINE

EPNF

Solid carbide right-hand spiral flute for endmill slotting, side and trim milling. Interpolation drilling for roughing and finishing.

Vc=100-150 m/min
330-500 ft/min
Fz=0.015-0.025 mm/t,
0.0006-0.001 ipt



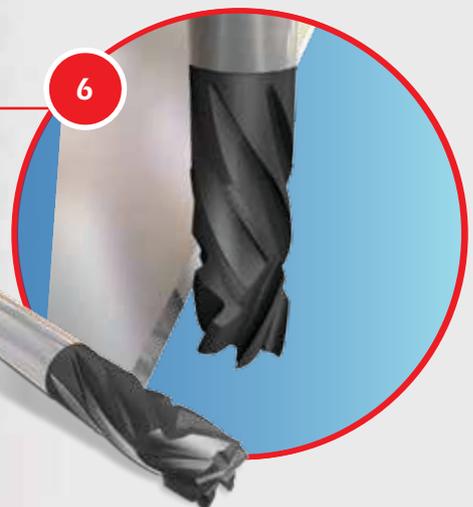
Milling

SOLIDMILL SOLID CARBIDE LINE

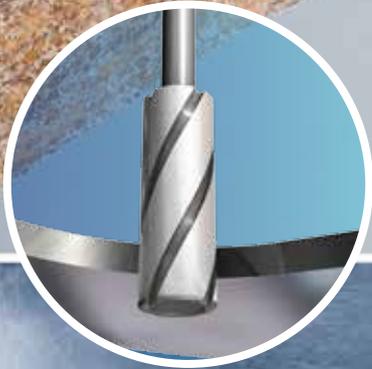
EPX

Carbide diamond coated with right and left spiral flute for side finishing milling.

Vc=100-150 m/min
330-500 ft/min
Fz=0.015-0.05 mm/t,
0.0006-0.002 ipt



Composite Materials



ISCAR's Drilling Solutions for Composites and Multilayered Materials

As the usage of composite materials is becoming more and more popular due to its high strength to weight ratio, the highly abrasive nature of the carbon fiber content and the very strict specifications of the industry make it very challenging for drilling.

One of these substances, Carbon Fiber Reinforced Plastic, can be especially difficult to drill and exhibits different results compared to other common materials.

The technical specifications required by the aerospace industry, where the usage of the CFRP is very common, demand to overcome the typical failures of drilling CFRP, such as: surface anomalies, material cracking, delamination, etc. - yet with the goal to reach a plausible cost per hole. ISCAR has accepted the challenge and for the first time presents its innovative solutions for drilling composites by using exchangeable drills.

Tools

- Modular and integral drills compatible both with ADU and CNC machines.
- "Smart Connector" design for fast, accurate and repeatable replacement.
- Drilling and countersinking in one motion.
- Exchangeable drill with insert self-locking mechanism.
- Twisted tool body for easy and smooth chip evacuation.
- Compatible with MQL.

Drilling Heads

- Different geometries for CFRP and laminated multilayer parts.
- CVD diamond coatings for high wear resistance.



SUMOCHAM

CHAMDRILL LINE

ADU Compatible Drill

CNC/Milling Machine Compatible Drill



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ISCAR
www.iscar.com