

Machining

# Tackling the Challenges of Machining Composite Materials

Brought To You by Guhring | Jun 01, 2021

Fiber reinforced plastics (or FRPs) are used in applications where high specific strength and low weight are essential. To machine FRPs and stacks (FRP/metal-layer composite) without component damage, cutting edge quality and wear resistance are of absolute importance.

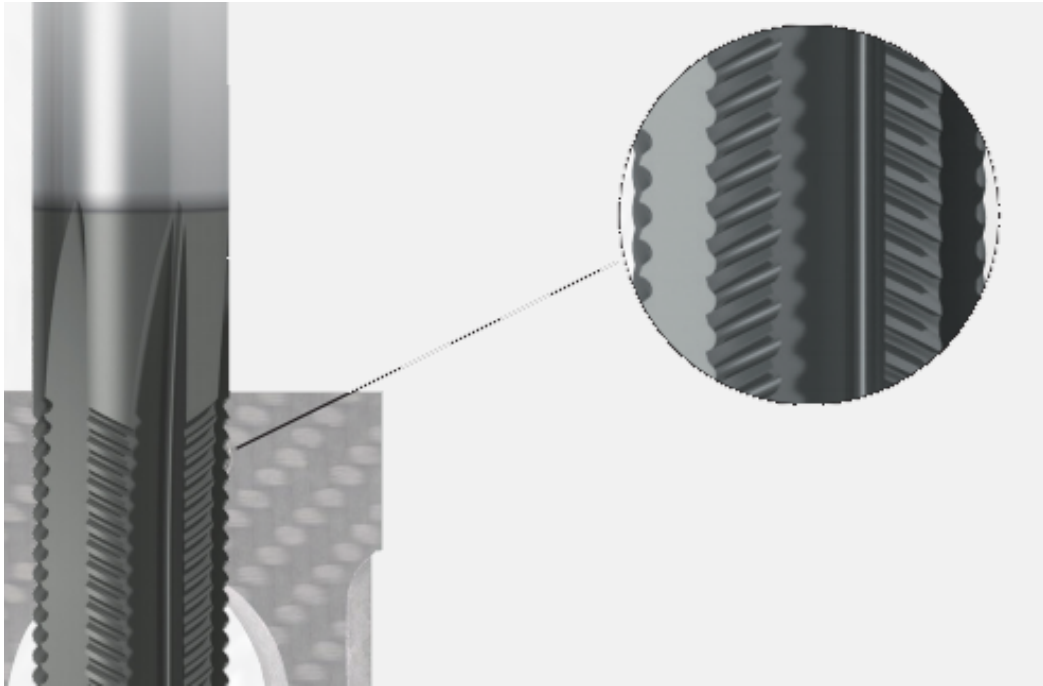
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## Challenges With Machining FRPs

- Fraying or splitting of fibers
  - Delamination
  - Component damage through "peel-up" or "push-out"
  - Burr development
  - Thermal damage
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*Guhring's FR 100 high-performance milling cutters* address the challenges associated with machining FRPs.

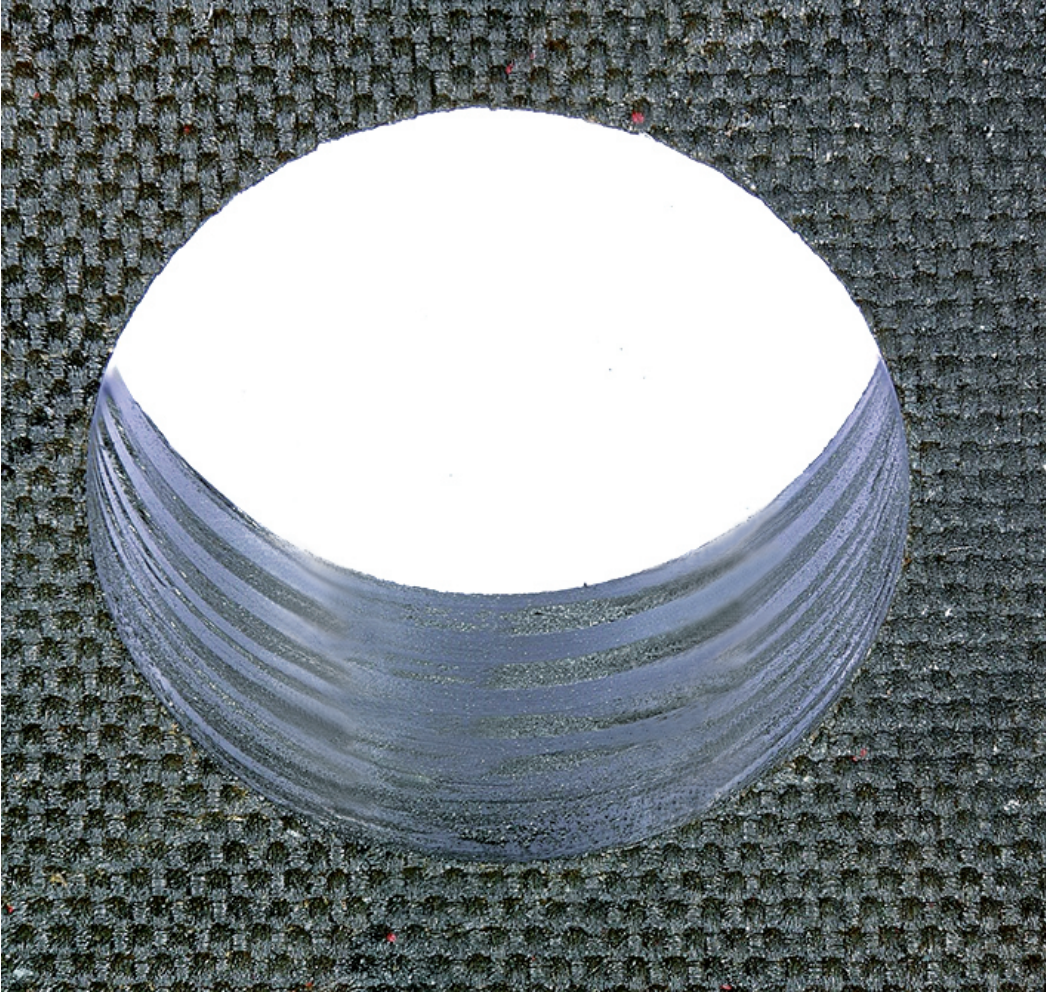
**Features:**



### **Compression cut**

The shearing action of the FR 100 prevents delamination, fiber fraying and thermal damage.





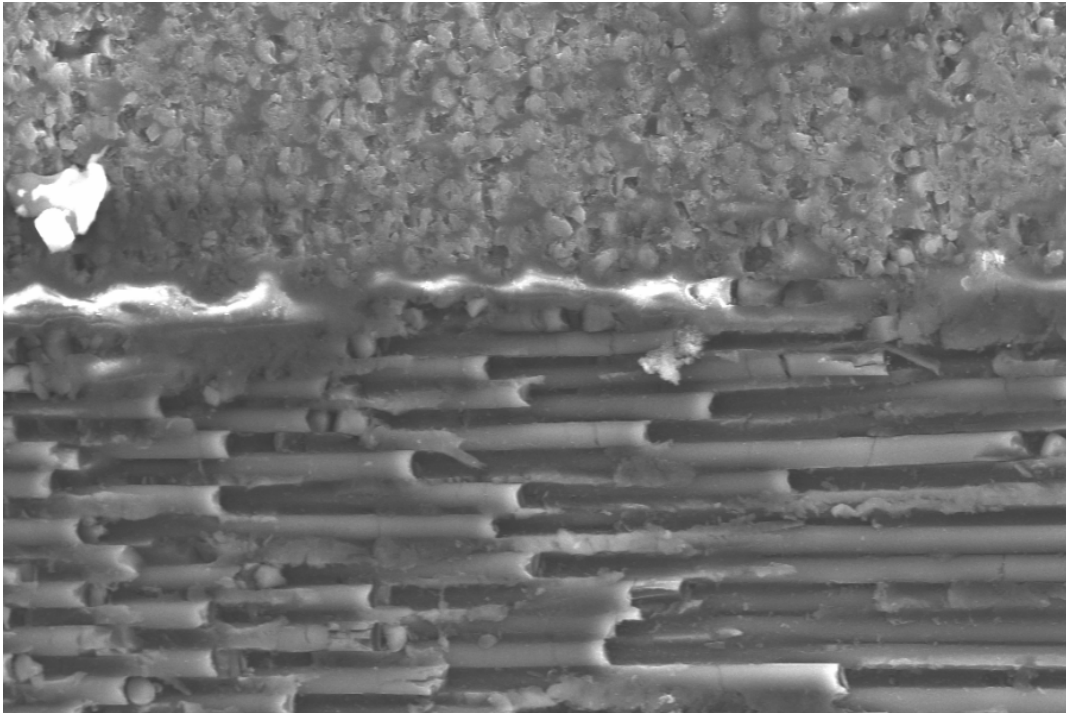
### **A clean exit**

The goal is to avoid delamination or fraying of the FRP fibers. An exit hole with a clean edge proves Guhring's success.



### **Economic efficiency**

The exceptional hardness value of diamond enables this coating to tackle highly abrasive applications. Tool life is extended by the design features and the coating.



### **Cutting edge matters**

Machining results, magnified 500-fold, show the compression geometry paired with a superior cutting edge retains the structure and direction of the fibers in the material. No thermal damage or delamination occurs.

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