



Milling

RF 100 Micro-Diver – Big Milling Performance in a Small Package: Diameters From 1/32"

Brought To You by Guhring | Jan 03, 2023

After several years of proving its potential in the metalcutting industry, Guhring's RF 100 Diver end mill family has earned a reputation for extraordinary productivity in drilling, ramping, roughing, finishing, and slotting applications.

As a manufacturer known for relentless innovation, Guhring has re-created the outstanding performance of the Diver end mills in an advanced **micro-precision** end mill. The carbide RF 100 micro-Diver delivers plunging, 60 degree ramping, and high-performance milling at tool diameters at or below 1/8".

This tiny workhorse delivers extreme cutting values and very high cutting depths in a wide range of materials. With a focus on stability in the cut, the Micro-Diver was designed with an innovative flute form and specialized geometry for the transition from flute to neck. A symmetrical drilling geometry helps to optimize ramping and drilling operations.

MICRO **d**iver RF 100



- **innovative flute form**
very high tool stability
low-vibration cutting

- **new transition geometry**
improves overall stability

- **GühroJet coolant ducts**
guided cooling & lubrication
directly in the cutting area
for effective chip removal

- **new ultra fine carbide**
optimum balance between
hardness and toughness
for micromachining applications

The micro-Diver's incredible ramping and milling capabilities made it a real hero in a job shop in the Northeast that was struggling to reduce cycle time in 455 stainless steel. Their manufacturing of a

medical drill – and several variations of this drill – was barely turning a profit due to extended machining time. Milling out three windows from the solid rod-shaped form was taking 54 minutes per part, on a vertical CNC with flood coolant.

The machine's operator had heard about Guhring's micro-Diver, and asked their rep if they could bring one in to test. A Series 6808 end mill, 3/32" in diameter, was put to the challenge and due to its design features the micro-Diver ramped aggressively into the stainless and milled out the three windows **in only 4½ minutes**. Running at more than double the SFM and IPM, the micro-Diver shaved off nearly 50 minutes of cycle time per part, turning this production run into a much more profitable one by **saving 87% annually**. And with the micro-Divers added to their lineup, they were able to also slash machining time on the medical drill's other variations.

The Smallest Diver in the World is stocked in diameters from 1/32" to 1/8", with inch and metric sizes. **Series 6808** can mill at depths of 2.5xD, and features 4 or 6 GuhroJet peripheral cooling ducts, depending on the diameter. **Series 6809** can mill at depths of 5xD, and also features 4 or 6 GuhroJet peripheral cooling ducts, depending on the diameter.

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