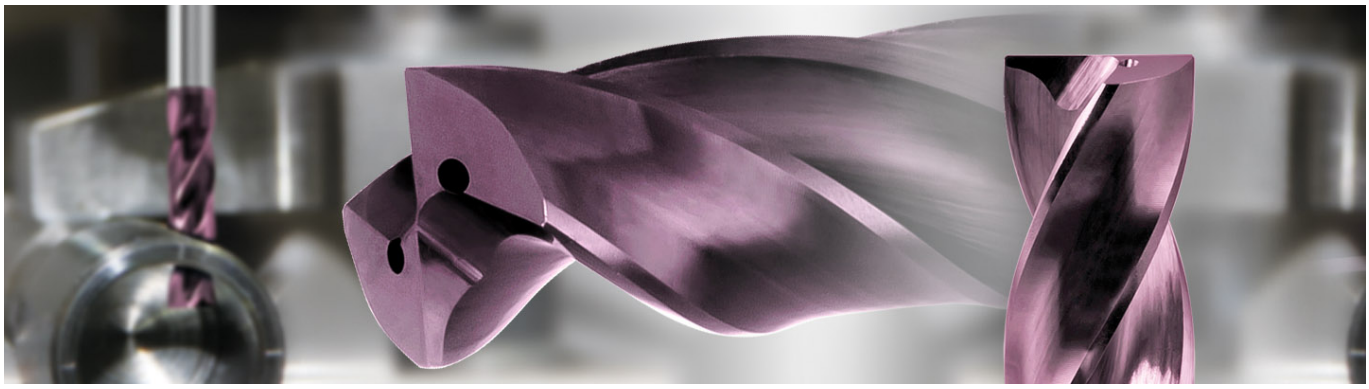

Metalworking

# Guhring's RT 100 Flat-Bottom Drill Slashes Setup Time on Tricky Jobs

James Langford | Mar 28, 2023

**Think of Guhring's RT 100 flat-bottom drill as a triple threat: It can handle piloting, drilling or finishing.**

Because of that, the RT 100 FB can eliminate as many as three tool changes and setups that would interrupt work for machinists relying on pointed drills and other tools to cut holes into oblique or curved surfaces.

For small maintenance and repair shops, which are more likely than large production facilities to face such tasks, the drills "solve a lot of cycle-time and tool-wear issues because you're able to complete the hole much faster," says Paul Larson, Guhring's product manager for drills and thread mills.

Traditional drills, with a point angle of 118 degrees to 135 degrees, aren't suited for creating holes at an angle since they're easily deflected from the sloped surface.

Without a flat-bottom drill, a machinist working at that angle would typically begin with an end mill to create a flat surface to which a pilot drill and a spot drill could be applied, depending on the job. The flat surface is created by plunging with the end mill or utilizing a helical toolpath with the end mill.

Larson says those require time for both machine setup and toolpath determination.

"When all of that's involved, you've got cycle time," he adds. "The RT 100 FB solves lots of cycle-time and tool-wear issues because you're able to complete the hole much faster."

Both tool wear and cycle time are increasingly critical issues for machine shops and manufacturing facilities grappling with high inflation, a shortage of workers and lingering supply chain disruption.

For job shops and businesses with very small runs in particular, "it becomes cost-prohibitive to have to buy three different tools to complete one hole that's on an angle, an arc or in the bottom of a slot," Larson says. "With a flat-bottom drill, you can utilize one tool to accomplish all of that."

> **"You're going to get a very consistent performance from tool to tool."**
> Paul Larsen
> Guhring

The RT 100 FB, Guhring's first venture in the ***flat-bottom drill*** market, is a 3xD (three times as long as its diameter), coolant-fed solid-carbide drill. It's ideal for drilling pilot holes for deep-hole drilling, an application where the required hole is more than eight times deeper than its diameter.

If the drill is entering the workpiece at a 45-degree angle, for instance, and job specifications call for a hole of 25 times diameter, being able to use a flat-bottom drill to create the pilot hole and then switch immediately to a deep-hole drill simplifies the process significantly.

"One of the major overall benefits of using a flat-bottom drill is the reduction in cycle time," Larson says.

Guhring, a 125-year-old company founded in Germany, operates its own carbide manufacturing facilities and is one of the world's largest producers of carbide rod. Since it doesn't rely on outside carbide suppliers, it has greater control over the product, which ensures consistent quality in its tools.

## Deep-Hole Drilling

"You're going to get a very consistent performance from tool to tool," Larson says. Not only is the RT 100 FB designed to work with a variety of metals—from stainless steel to cast iron, aluminum and titanium nickel alloys, its nano-Firex coating enables it to withstand high temperatures with ease. Its flat bottom, meanwhile, reduces the exit burrs that can occur with pointed drills, minimizing the deburring processes required afterward, Larson says.

For jobs in which customers want threads to extend to the bottom of a hole, a flat-bottom drill is ideal, eliminating the unthreaded gap left behind by pointed drills.

Numerous customers have asked Guhring to build a flat-bottom drill in the past, Larson notes. The product's recent introduction, which takes advantage of technology that provides tolerances necessary for deep-hole drilling, broadens the company's position in the market.

"One of the things that Guhring has always strived for is having the tools that our customers need with the right tolerances," he adds. "This is one of the tools for which we believe there's a strong need. When drilling into oblique surfaces, you can use this as a pilot for a deep-hole drill as well as drilling into curved and oblique surfaces directly."

**How could Guhring's RT 100 FB reduce cycle time in your shop? Tell us in the comments below.**