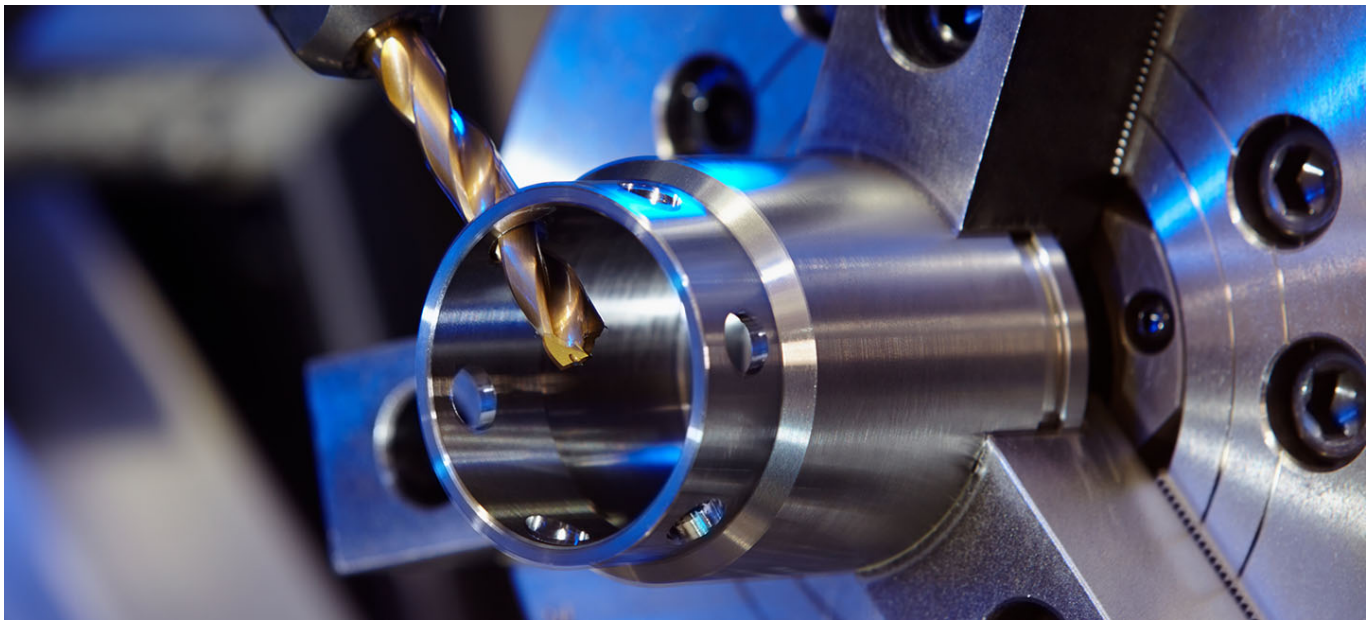


Metalworking

New Product Guide: Drills Built to Tame Holemaking Challenges

James Langford | Jan 28, 2025

Being one of the most common jobs in modern machine shops doesn't keep holemaking from being frustrating—thanks to issues like drill wandering and poor chip evacuation—but it does create an opportunity.

Because machinists drill so often, it's an operation where tool upgrades can deliver maximum benefits to shops' productivity, efficiency and bottom lines.

In the past two years, MSC suppliers have introduced state-of-the-art drills including Guhring's ***InoxPro***, ***OSG's ADO-TRS*** and Kennametal's ***Drill Fix Pro*** that are designed to smooth some of the application's thornier challenges.

Here's a look at what they have to offer:

Kennametal Drill Fix Pro

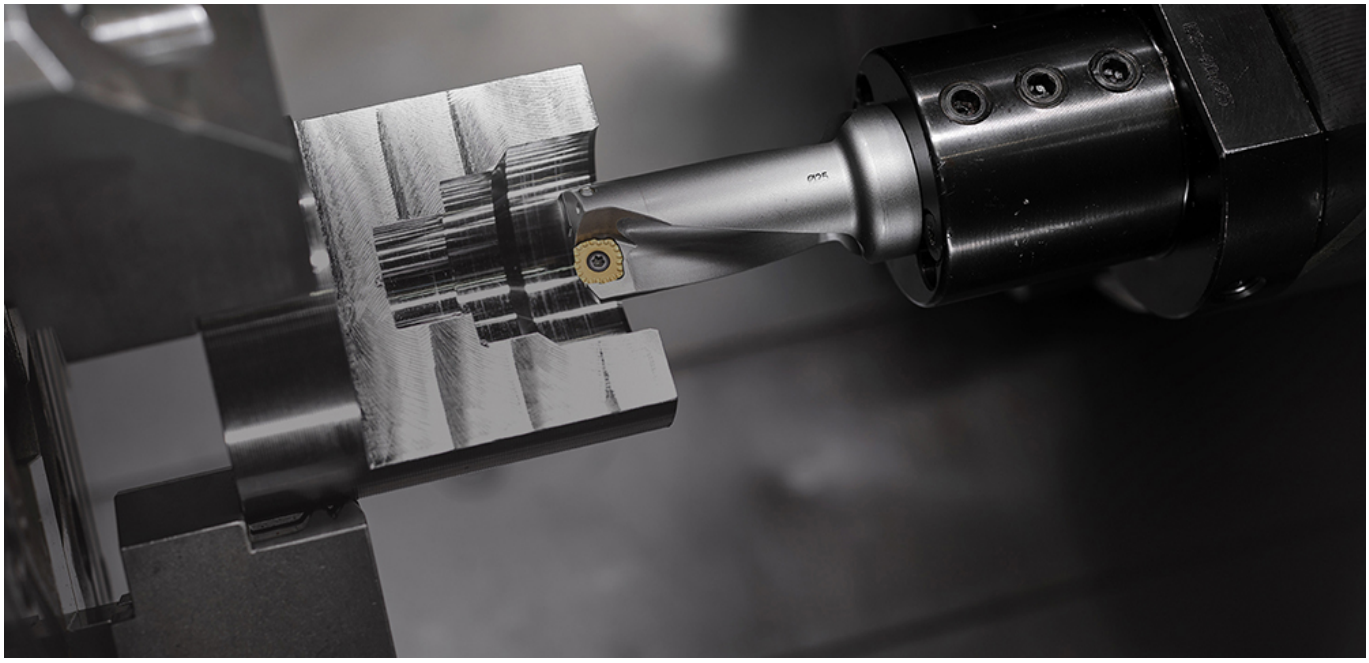
For machine shops tackling a variety of holemaking jobs in workpieces of all shapes, sizes and materials, versatility is vital.

They need a tool that can adapt to an array of job requirements—and that's exactly what Kennametal has delivered with its ***Drill Fix PRO indexable platform***, an upgrade to the earlier Drill Fix line.

Indexable drills, which rely on removable inserts with multiple cutting edges, deliver a wider performance range at lower entry prices than solid drills.

While useful to heavily specialized industries, the Drill Fix PRO targets general engineering firms with

diverse machines, equipment and processing capabilities. It can cut from 2 diameters (2xD) to 5 diameters deep and delivers hole diameters from half an inch to 2.5 inches.



Kennametal's Drill Fix PRO indexable platform delivers the versatility to tackle holemaking jobs in workpieces of all shapes, sizes and materials. | Photo courtesy of Kennametal

Click here to shop Kennametal drills on MSCDirect.com.

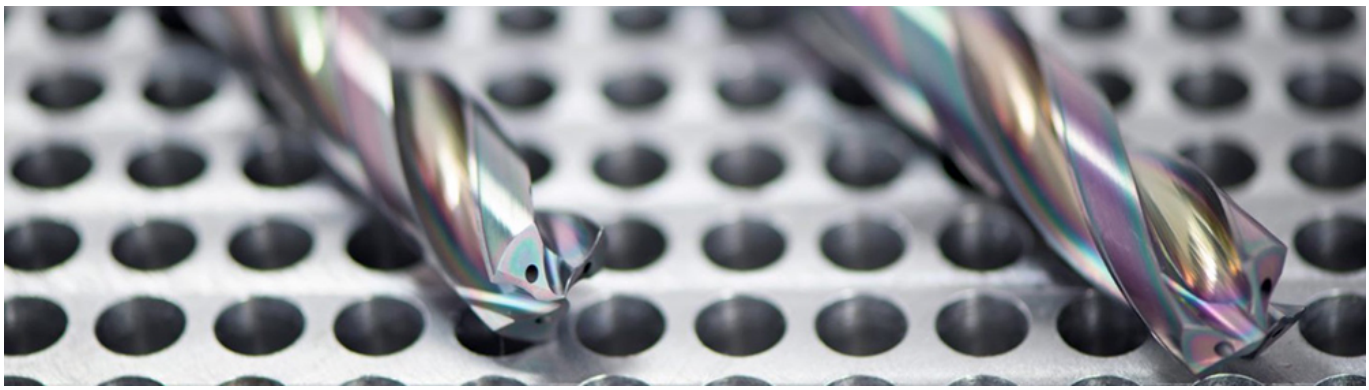
One advantage for customers is that they don't need to buy various sizes of pricier carbide drills, replacing them every time they wear out, but can instead invest in a steel body that can be reused for a long time, repurchasing only the comparatively inexpensive carbide inserts when they reach the end of their life spans.

Another plus with the Drill Fix PRO is that its inserts each have four cutting edges, compared with previous high-performing models that had only three. Unique pocket seats for the inboard and outboard inserts make it easier for operators to distinguish between them and to accurately choose optimal geometry and grade coatings for particular cutting zones.

OSG's 'Triple Revolution' Drill

Operating constraints, including workpiece configuration and equipment setup, frequently leave machinists unable to maximize the speed and precision of 3-flute drills.

In steel processing especially, the strength of the work material and viscosity are high, making chip separation and stable processing a challenge. With high thrust force and poor chip evacuation, tool breakage and chipping are common headaches in using 3-flute drills.



The ADO-TRS from OSG comes with an optimized R-shaped geometry and wide chip pocket configuration. | Photo courtesy of OSG

Click here to shop OSG drills on MSCDirect.com.

The ADO-TRS from OSG—nicknamed the 'Triple Revolution' drill—was built to even the playing field. Three major features help it stably process steel-machining jobs:

- **The optimized R-shape geometry:** Designed to control chip flow direction to facilitate trouble-free chip evacuation, it enables the ADO-TRS to break chips into small, consistently shaped pieces even with steel workpieces. The geometry can reduce cutting resistance (thrust resistance) by as much as 30 percent compared with conventional tooling, enabling it to outperform even 2-flute drills in high-feed processing with minimal cutting resistance.
- **Wide chip pocket configuration:** In 3-flute drills, chips are difficult to discharge from the center of the drill, but the wide chip room flute geometry improves chip ejection. Combined with the R-gash specification, it helps curl chips for greater separation capability, which leads to smooth and stable chip evacuation.
- **Original EgiAs coating for high durability:** The EgiAs coating consists of overlapping nano-periodical layers and wear-resistance layers, engineered to suppress the spread of cracks likely to occur during drilling. The wear-resistance layer is composed of multiple hard layers, while the nano-periodical is a combination of hard and soft layers.

Guhring's RT 100 InoxPro Drill

The unique carbide, geometry and coating of ***Guhring's new RT 100 InoxPro*** combine to produce precise holes in stainless steels and titanium materials while extending tool life and reducing run times.

The InoxPro has delivered 50 percent higher feed rates compared with conventional stainless steel drills. Introduced in late 2023, it's an addition to the company's portfolio of material-specific, high-performance products, which are growing in popularity.

With the InoxPro, Guhring modified its carbide substrate for machining stainless steels, which reach extremely high temperatures during machining and tend to jam, causing drills to get stuck and break.

The carbide's improved combination of toughness and hardness helps to prevent breakage, the company says, while the tool's stronger taper and its sickle-shaped cutting edge minimize jamming.

With the RT 100 InoxPro drill, Guhring modified its carbide substrate for machining stainless steels. | Photo courtesy of Guhring

To prevent material from sticking to the drill's cutting edges, a common problem with stainless steels that can cause parts of the tool to break away, Guhring built the ***RT 100 InoxPro*** with particularly smooth surfaces. Polished flutes help improve chip removal and minimize built-up edges.

The InoxPro line includes micro sizes ranging from 0.5mm up to 3mm, and a standard diameter ranging from 3mm to 20mm, the company says. Coolant-through variants are also available.

What are your biggest challenges in drilling applications? Tell us in the comments below.