

SHAPE it

OSG GLOBAL TOOLING MAGAZINE | SUMMER 2026

FEATURE:

Japan's Top
Reamer Manufacturer – F.P. Tools

Shaping the Future of Manufacturing
Through Reamer Technology



TECHNICAL INSIGHT

- ADOX: High-performance coolant-through carbide drill
- DIA-MXD: Carbide drill for ceramic and glass machining

CUSTOMER REPORT

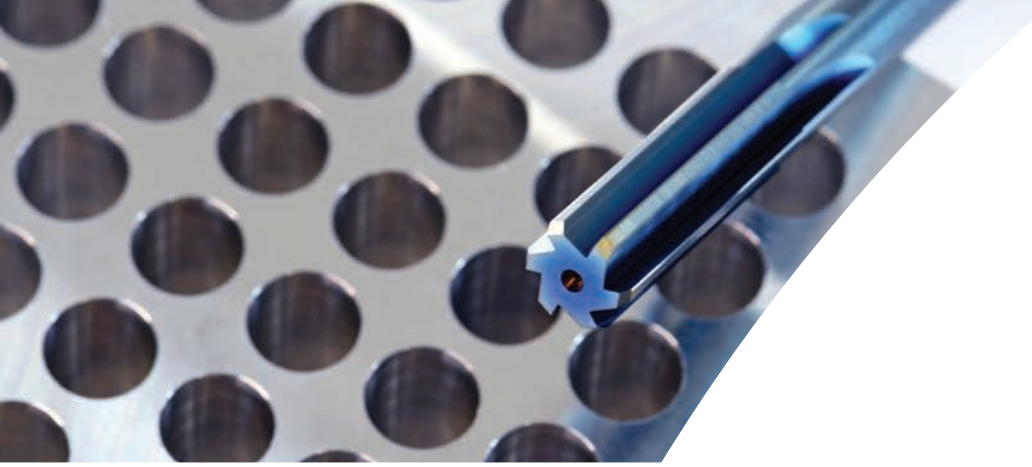
Austria

OSG NEWS

- Recaps from MECT 2025
- ANCA Female Machinist Award at EMO Hannover 2025

MEET OSG

Interns from Germany and Spain in Japan



CONTENTS

SHAPE it
SUMMER 2026

Feature

2 Japan's Top Reamer Manufacturer – F.P. Tools

Technical Insight

8 ADOX

12 DIA-MXD

Customer Report

16 Shared Evolution

Driving Productivity & Stability at Bifrangli GmbH Austria

Product Pickup

20 ADOX Coolant-Through Carbide Drill,
DIA-MXD Carbide Drill for Ceramics and Glass

21 CBN-FB2 2-Flute CBN Ball End Mill,
AE-TL-N (-N) DLC Coated 3-Flute Carbide End Mill with Chipbreaker

OSG News

22 Recaps from MECT 2025

23 ANCA Female Machinist Award at EMO Hannover 2025

Meet OSG

24 Interns from Germany and Spain in Japan

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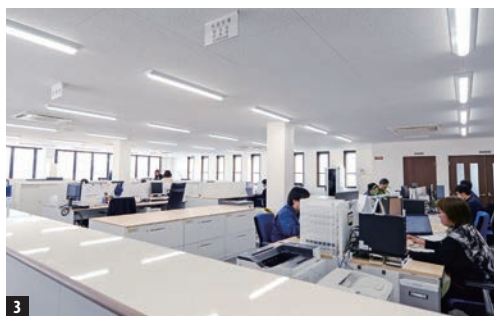


Japan's Top Reamer Manufacturer – F.P. Tools

Shaping the Future of Manufacturing Through Reamer Technology

Kayoko Shigemoto
F.P. Tools Co., Ltd.





1. Employees of F.P. Tools gather for a group photograph outside the company's headquarters in Kyoto, Japan. F.P. Tools is the nation's leading dedicated manufacturer of reamers, holding the top share of the domestic market.
2. F.P. Tools' reamer production line.
3. Office inside F.P. Tools' headquarters in Kyoto, Japan.
4. A display sample of the adjustable reamer first developed in 1932, when F.P. Tool was founded as the Osaka Precision Machine Tool Research Institute. Today, the company continues to produce a limited range of sizes.

F.P. Tools: A Leading Name in the Reamer Industry

F.P. Tools Co., Ltd., headquartered in Kyoto, is Japan's leading dedicated manufacturer of reamers and holds the top share of the domestic market. Now part of the OSG Group, the company continues to advance high-precision reamer technology to support manufacturers worldwide. The name "F.P. Tools," short for "Fine Precision," reflects its pride in craftsmanship and commitment to quality.

F.P. Tools traces its roots back to 1932, when it was founded as Osaka Precision Machine Tool Research Institute and began developing adjustable reamers. The company was renamed Hikari Seiko Co., Ltd. in 1944, expanding into the production and sales of precision cutting tools. It adopted its current name, F.P. Tools Co., Ltd., in 2002 and entered a new chapter in 2020 as a member of OSG Corporation.

In 2023, leveraging decades of expertise as a dedicated reamer manufacturer, F.P. Tools introduced a carbide jet reamer capable of machining both through-holes and blind holes. Building on this momentum, F.P. Tools launched the "F-PREMIUM" brand in 2025, aimed at raising standards for accuracy, quality and tool life. In 2026, it released the first product in the series, the FPR carbide premium reamer.

For more than 80 years, F.P. Tools has continued to blend tradition with innovation, delivering high-quality solutions to customers around the globe.

Why Reamers Matter

When it comes to hole machining, twist drills—commonly referred to simply as drills—are the tools most widely used. Over the years, drills have been improved to enable high-efficiency machining. However, in applications requiring exceptional roundness or tight dimensional tolerances, drills alone often fall short. This is where reamers become indispensable.

Unlike standard drills, which typically feature two cutting edges, reamers are designed with four to eight or more edges to achieve high-precision hole finishing. By using a reamer to refine a pre-drilled hole, manufacturers can dramatically improve roundness, surface finish and diameter consistency. A reamer's primary purpose is to achieve precision levels that drills alone cannot deliver.

Purpose and Precision of Reamer Machining

The central goal of reamer machining is simple: to maximize the quality of hole finishing. Drill-only machining often cannot meet strict requirements for roundness or surface roughness. Reamers, engineered for stringent accuracy, deliver both superior roundness and fine surface finishes.

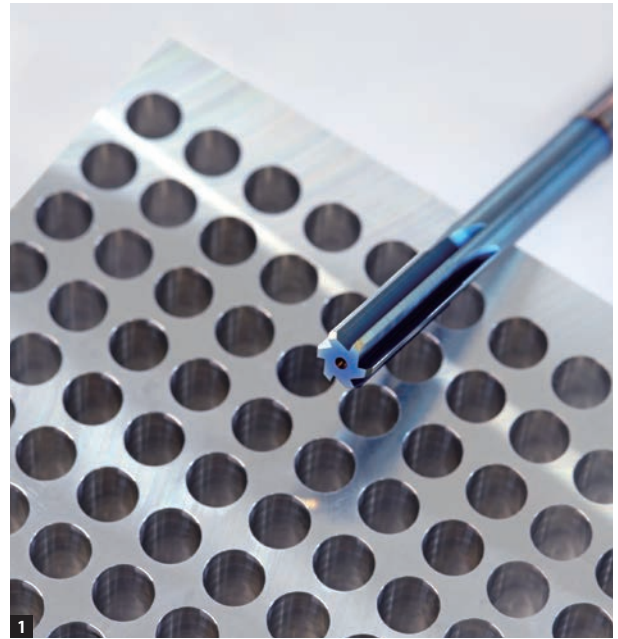
In mass production environments, manufacturers must maintain strict hole tolerances consistently across large volumes. When reamers are properly selected and sized to match the required accuracy, tool life becomes predictable and tools can be replaced proactively. Even with demanding tolerances, reamer machining enables stable, repeatable results.

Key evaluation criteria for hole machining include roundness, cylindricity, surface roughness and dimensional accuracy. Industry benchmarks typically call for:

- Roundness / cylindricity: 10 μm or less
- Surface roughness: Ra 0.8–3.2 μm , Rz 3.2–12.5 μm
- Hole tolerance class: IT7 (commonly H7)

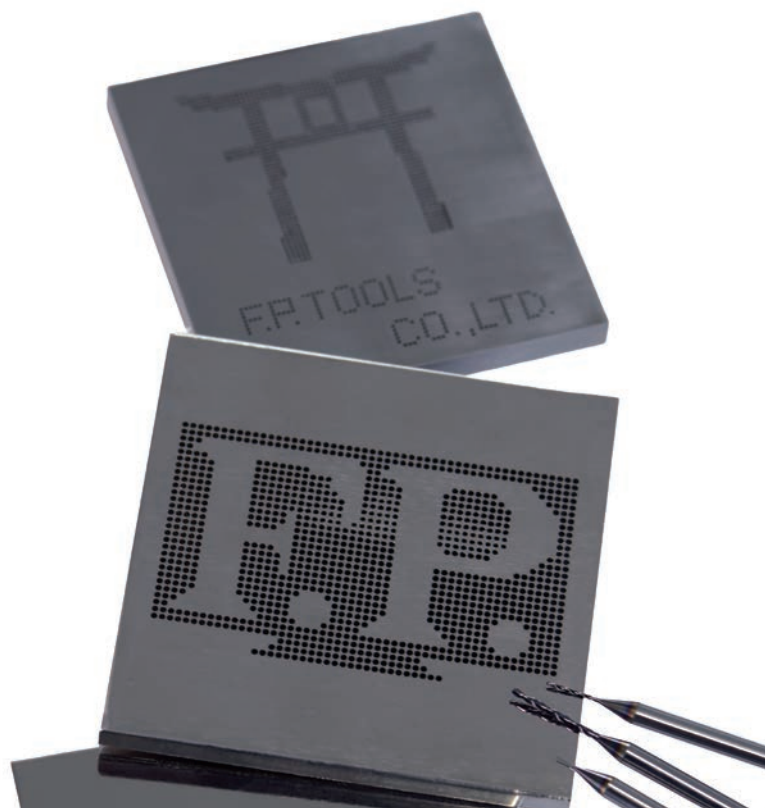
Reamers meet these stringent demands through high cutting performance, contributing significantly to improved quality and productivity in precision-focused manufacturing environments.

F.P. Tools introduced micro carbide drills in 2022, leveraging decades of expertise in precision reamer technology.



1. Reamers, designed with four to eight or more cutting edges, refine pilot holes created by drills to improve roundness, surface finish and dimensional stability.

2. Introduced in 2023, F.P. Tools' carbide jet reamers can machine both through-holes and blind holes.



What Sets F.P. Tools Apart

Known as “the masters of finishing,” F.P. Tools’ reamers deliver exceptional accuracy and are used by more than 20,000 companies worldwide. Guided by a “quality first, customer first” philosophy, the company offers an extensive lineup ranging from 0.005-mm increments in standard sizes to ultra-precision versions available in 0.001-mm increments. Reamers can be manufactured using a variety of materials, including carbide, high-speed steel and cermet.

F.P. Tools also produces a diverse range of coated reamers, manufactured under precise dimensional control, enabling compatibility with a broad set of materials and machining environments.

Main Product Lineup

- Carbide Reamers – High wear and welding resistance with outstanding rigidity; ideal for high-speed or long-life precision machining in mass production.
- Cermet Reamers – Made of cermet for excellent wear and welding resistance; ideal for stainless steel, which is prone to work hardening. Combine high-speed machining with superb surface quality.
- High-Speed Steel Reamers – With high toughness, these tools handle a wide range of general-purpose materials and offer high cost performance for small-lot or diversified production.
- Coated Reamers – Coatings tailored to specific materials enhance machining efficiency, tool life and application range of both carbide and HSS reamers.
- Custom Reamers – Designed and manufactured to customer specifications, including diameter, length and flute geometry. Can handle stepped, tapered and other complex shapes, with flexible support from small to large production quantities.

F.P. Tools also offers precision micro carbide drills developed using its reamer manufacturing expertise.

With more than 60,000 standard items and specialized tools such as the Carbide μ (Micro) Reamer—featuring 0.001-mm diameter tolerance—the company supports applications ranging from high-speed machining and blind holes to hardened steels, difficult-to-cut materials and micro-precision processes.

F.P. Tools launched the F-PREMIUM brand in 2025 to elevate accuracy, quality and tool life. The first product in the series, the FPR carbide premium reamer, entered production and sales in 2026.



1. A production specialist grinds the peripheral cutting edge, the most critical step in the reamer manufacturing process. F.P. Tools’ reamers deliver exceptional precision, achieving diameter tolerances as tight as 0.001 millimeter.

2. F.P. Tools offers a broad lineup of precision tools, including carbide, cermet and high-speed steel reamers. The company’s products are widely used in automotive, aerospace, electronics, mold and fluid system applications.



Quality Management

F.P. Tools is certified under ISO 9001 and ISO 14001, establishing robust systems for quality and environmental management. Beyond adhering to international standards, the company enforces internal criteria stricter than Japan's JIS standards.

By separating responsibilities between the quality control and manufacturing divisions, F.P. Tools has created an independent inspection framework that ensures strict evaluations and delivers products customers can use with confidence.

Technical Support and Services

F.P. Tools provides more than tools—it offers comprehensive engineering support to solve on-site manufacturing challenges. Experienced engineers visit customers nationwide to evaluate tool wear and hole accuracy—including roundness, cylindricity and surface roughness—and offer repeatable solutions in tool selection, cutting conditions and process improvements.

Through Value Analysis (VA) and Value Engineering (VE), the company supports customers from initial assessment to implementation, optimization and results verification. This approach reduces production time, extends tool life, lowers defect rates and improves machining of difficult materials and complex geometries.

The company also strengthens support through joint visits with distributors, online consultations and technical seminars. Since joining the OSG Group, F.P. Tools has expanded its global reach through OSG's international network.



Proven Results Across Industries

F.P. Tools' reamers are used in sectors requiring exceptional precision, including automotive, aerospace, electronics, mold manufacturing and fluid control systems.

Examples include:

- An automotive parts manufacturer reducing defect rates in mass production.
- A precision equipment maker achieving stable machining at 1- μ m tolerances.
- An aerospace manufacturer adopting custom reamers for difficult materials.
- A medical device maker improving endoscope component quality through optimized cutting conditions.

These successes demonstrate the company's strong performance across demanding industries.

Looking Ahead

As one of Japan's leading reamer manufacturers, F.P. Tools will continue to fuse tradition with innovation, delivering "Made in Japan" quality worldwide. Backed by OSG's global network, the company is committed to advancing solutions that meet increasingly complex machining requirements.

Guided by its motto—bright, cheerful and energetic—F.P. Tools values strong relationships with customers and distributors while pursuing its ambition to lead the global reamer industry. As a pioneer in high-precision cutting tools, the company will continue shaping the future of manufacturing.



1. A reamer in production at F.P. Tools' Kyoto facility. Manufactured on highly controlled, precision production lines, F.P. Tools' reamers deliver long tool life and consistently accurate machining performance.
2. The F.P. Tools manufacturing team at the headquarters plant.
3. F.P. Tools is certified under ISO 9001 and ISO 14001, with internal quality standards stricter than Japan's JIS requirements.
4. The F.P. Tools product development team at the company's Kyoto headquarters.
5. Members of F.P. Tool's Sales Department at the company's Kyoto headquarters.



Scan for more
information on
F.P. Tools



ADOX

High-performance coolant-through carbide drill

Takahiro Yamamoto
OSG Corporation Product Development Engineer

OSG has expanded its flagship ADO drill series with the launch of the ADOX, a high-performance carbide drill featuring internal coolant holes. Engineered with OSG's proprietary "MEGA COOLER" coolant hole design, the ADOX delivers enhanced drilling performance and greater versatility across a broad range of machining applications. In addition to its technical capabilities, the ADOX supports environmentally conscious manufacturing by reducing operational impact.

The ADOX lineup is available in the following size ranges:

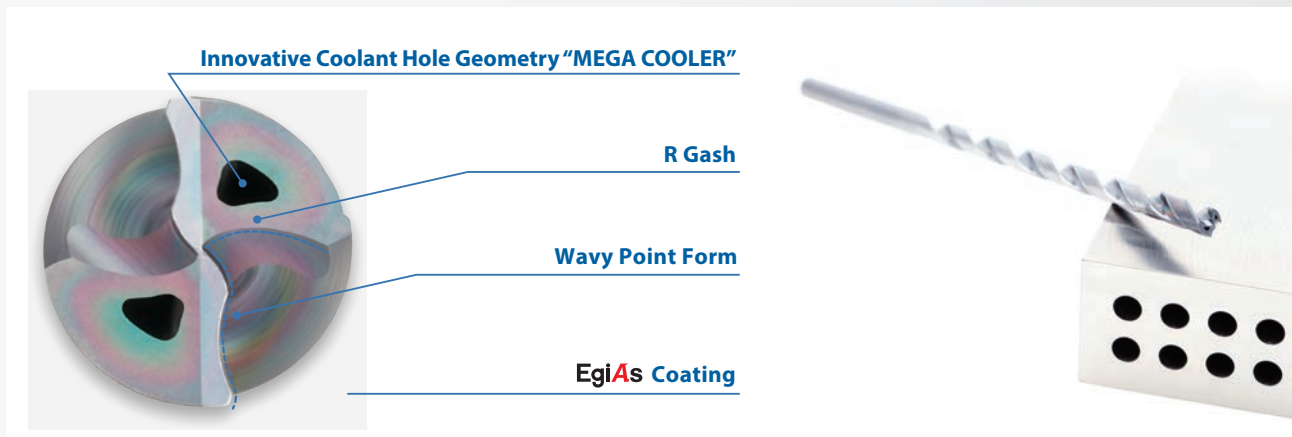
- ADOX-3D/5D/8D: diameter 2 to 6 mm
- ADOX-10D: diameter 2.4 to 6 mm
- ADOX-15D/20D/25D/30D: diameter 2.3 to 6 mm



Features and Benefits

Building on the ADO series' hallmark R Gash design, the ADOX introduces a newly optimized coolant hole geometry. By enlarging the cross-sectional area of the coolant holes, the drill maximizes the volume of cutting fluid discharged from the tool tip, improving tool life, machining stability, and overall efficiency. The coolant hole configuration is precisely engineered to complement the R Gash, allowing the drill to fully capitalize on its cutting performance.

The ADOX is capable of machining stainless steel—typically a challenge for general-purpose drills—making it suitable for a wide range of materials with a single tool, thereby enabling tool consolidation. The MEGA COOLER design ensures reliable coolant discharge even under low pressure, with oil-based cutting fluids, and in small-diameter applications, consistently delivering high performance.



Cutting Data

1. Small-Diameter Stainless Steel Machining with Low Coolant Pressure

Conventional drills often fail to deliver sufficient coolant flow in diameters below 3 mm under low pressure, resulting in shortened tool life. The ADOX addresses this by maintaining adequate coolant flow, achieving more than three times the durability of conventional tools.

Tool	ADOX-5D ϕ 2.7				
Work Material	SUS304				
Cutting Speed	80 m/min (9,435 min ⁻¹)				
Feed	755 mm/min (0.08 mm/rev)				
Depth of Hole	13.5 mm (Blind)				
Coolant	Water-Soluble (5% Internal)				
Machine	Horizontal Machining Center (BT40)				
			Coolant Pressure (MPa)	Coolant Flow Volume (l/min)	Number of Holes
					0 2,000 4,000 6,000 8,000 10,000
		ADOX-5D	1.5	0.4	10,000 Holes Still Running
		Conventional	1.5	0.13	3,500 Holes Chipping

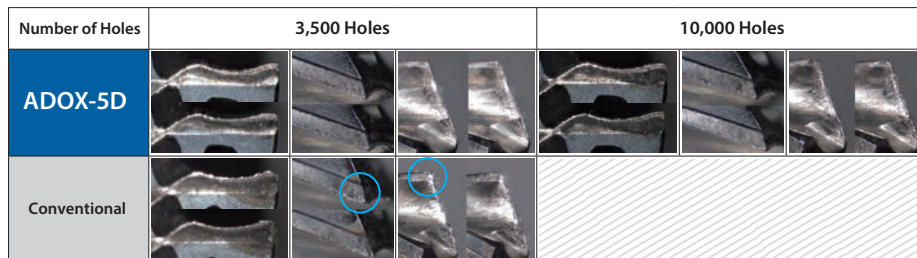


Figure 1. Long tool life achieved through sufficient coolant output at low pressure.

2. Machining with Oil-Based Cutting Fluids

Due to the high viscosity of oil-based cutting fluids, there is a tendency for insufficient fluid delivery, which can impede chip evacuation and result in inconsistent tool life. The ADOX demonstrates stable performance and prolonged tool life, even under these challenging conditions.

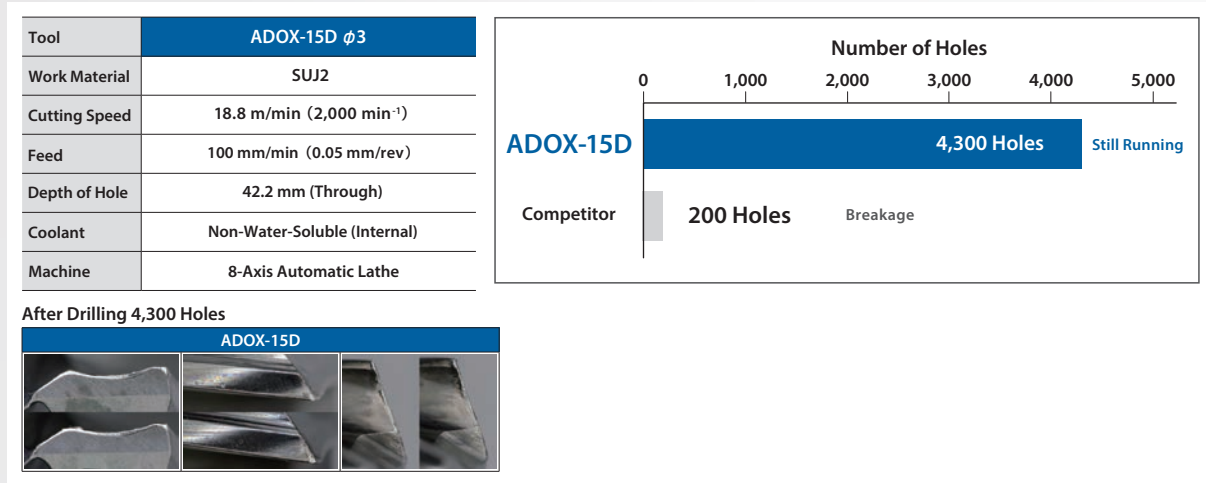
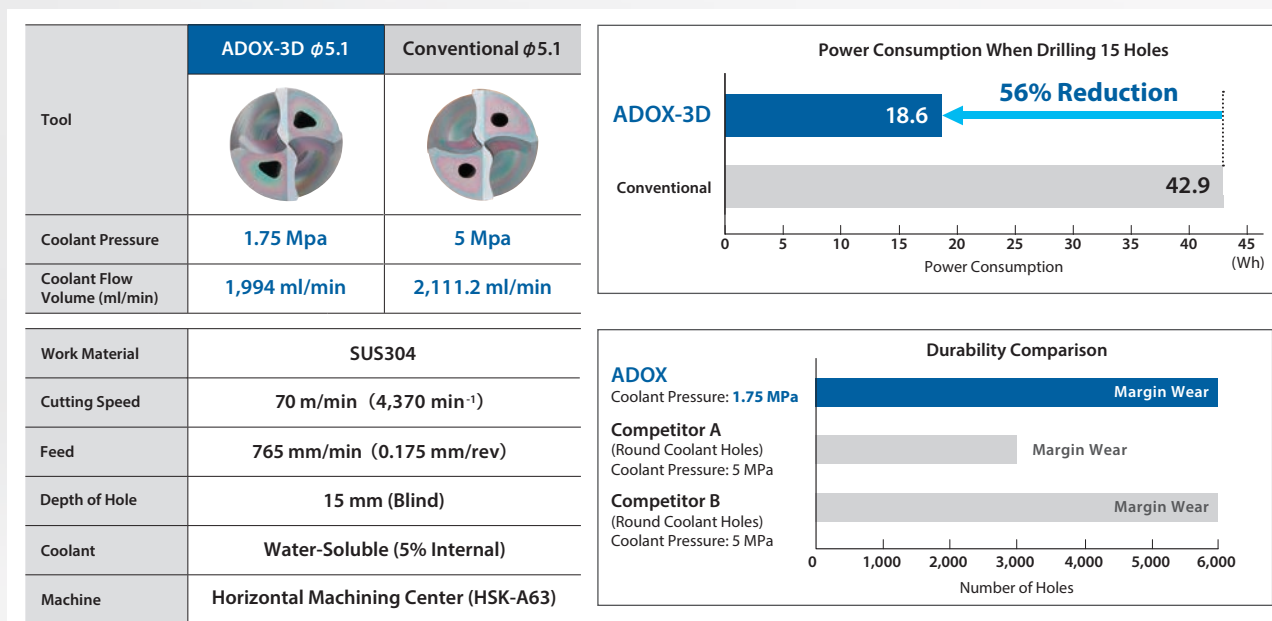


Figure 2. Machining high-carbon chromium bearing steel.

3. Reduced Power Consumption and Stable Performance at Lower Coolant Pressure

MEGA COOLER not only boosts performance through increased coolant discharge but also enables comparable flow rates at lower pressures. This significantly reduces energy consumption from coolant pumps, which are among the highest power consumers in machining operations.

ADOX maintains high tool performance even at low coolant pressures, thanks to the R Gash's low resistance and vibration-reducing design, which also aids in chip breaking and contributes to longer tool life. These features support ADOX's environmental performance by lowering energy usage.



※ The above is an example; result may vary depending on tool size and actual machining environment.

Figure 3. Comparison of power consumption of high-pressure coolant pumps at different coolant pressures.

4. Increased Coolant Discharge for Higher Efficiency and Longer Tool Life

In environments with moderate to high coolant pressure, increased discharge improves cooling, lubrication, and chip evacuation at the cutting edge. This results in higher machining efficiency and longer tool life compared to conventional drills.

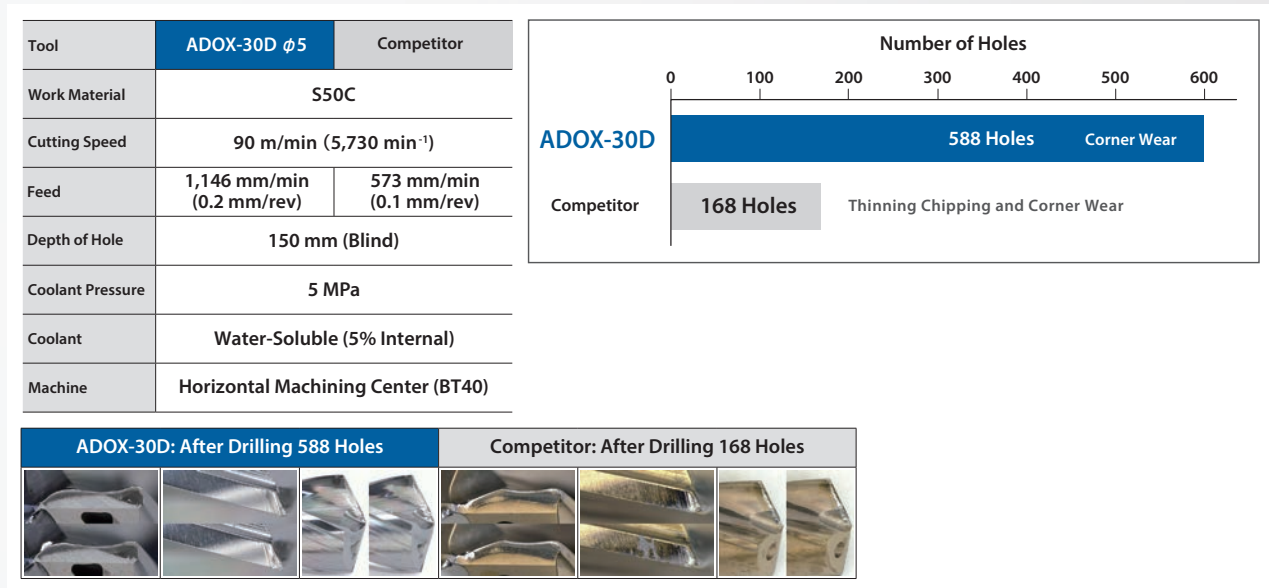


Figure 4. High efficiency and long tool life in 30D deep hole drilling.

Conclusion

The ADOX drill elevates the performance of the ADO series' R Gash feature while offering broad versatility for difficult-to-machine materials such as stainless steel. It excels in challenging environments—including small-diameter machining, low coolant pressure, and oil-based cutting fluids—and contributes to reduced environmental impact. OSG will continue to expand the ADOX series, including the development of models beyond 30D.



Scan for details

DIA-MXD

Carbide drill for ceramic and glass machining

Rio Ito
OSG Corporation Product Development Engineer

The DIA-MXD is a carbide drill specifically engineered for machining ceramics and glass. Ceramics encompass a wide range of materials, and among them, fine ceramics—known for their high-performance mechanical properties—offer exceptional corrosion resistance, heat resistance, insulation, and dimensional stability. As semiconductor products continue to evolve toward higher performance and miniaturization, the capabilities of semiconductor manufacturing equipment must also advance. These systems frequently incorporate components made from fine ceramics and glass, making the tools used to machine these materials critically important. However, ceramics become extremely hard after sintering, which presents significant challenges in machining. Conventional tools designed for steel are not suitable. Selecting the appropriate tool specifications—such as diamond tools—is essential. For drilling applications, many users rely on carbide drills with diamond coatings or electroplated diamond tools. This article focuses on carbide drills with diamond coatings.



Challenges with Conventional Products

A common issue with diamond-coated tools is the sudden delamination of the coating layer during machining. This unpredictable failure makes it difficult to estimate tool life and results in significant variation in the number of holes that can be machined (figure 1). Consequently, users must replace tools more frequently, increasing tool consumption and cost, and extending overall machining time due to tool changes. To address these challenges, the DIA-MXD was developed with a focus on tool life stability and incorporates two key innovations.

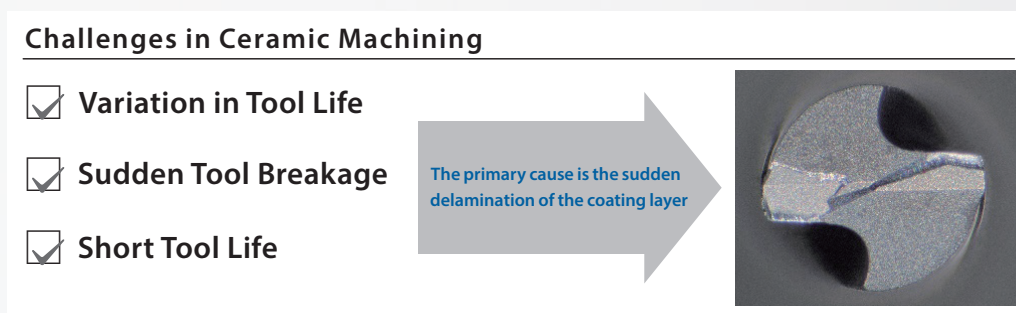


Figure 1. Challenges in ceramic machining.

1. Carbide Substrate with High Adhesion and HDG Coating for Superior Wear Resistance

Diamond coatings offer excellent wear resistance and are highly effective for machining ceramics. The DIA-MXD features a newly developed HDG diamond coating optimized specifically for ceramic applications (figure 2). To prevent sudden delamination, a new carbide substrate was developed to enhance adhesion. The combination of this substrate and the HDG coating delivers superior bonding strength compared to conventional products. This suppresses delamination and extends tool life, allowing for more predictable tool replacement intervals.

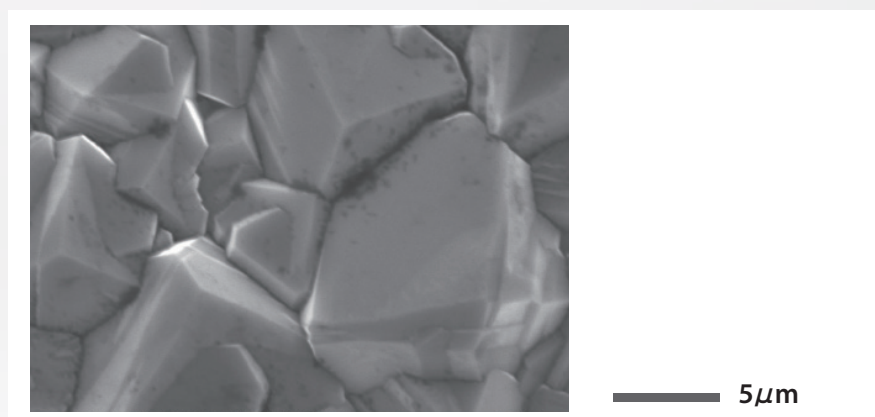


Figure 2. HDG coating surface.

2. Geometry Optimized for Ceramic Machining

The DIA-MXD incorporates a geometry focused on rigidity, featuring a specialized negative rake angle that reduces edge chipping and minimizes coating delamination (figure 3). The drill also includes a thick core and low helix angle, enhancing durability when machining high-hardness ceramics.



Figure 3. Appearance of DIA-MXD.

Figure 4 illustrates an example of drilling silicon carbide (SiC) using a DIA-MXD diameter 1.2 mm tool. Despite the 4 mm hole depth and the high mechanical load typically associated with ceramic materials such as SiC, no sudden delamination occurred, and wear on the cutting edge remained stable throughout the process.

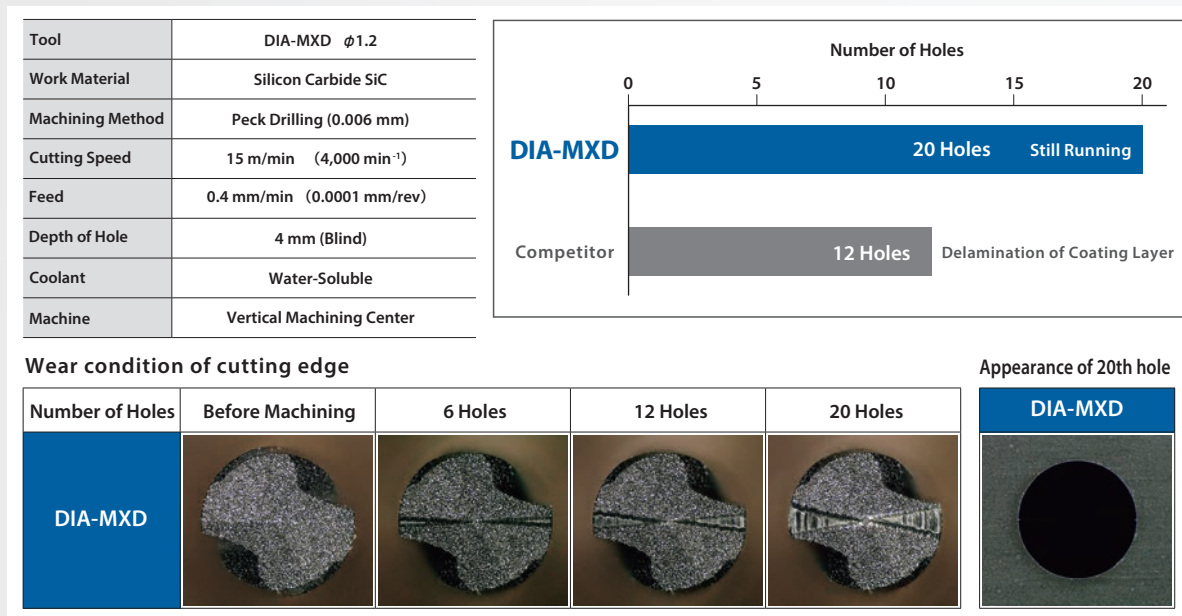


Figure 4. Cutting example in silicon carbide (SiC) using a 1.2 mm diameter drill at a hole depth of 4 mm.

This example demonstrates the DIA-MXD's high durability and consistent performance, contributing to improved productivity. With longer and more predictable tool life, users can reduce tool replacement frequency and machine downtime, while also supporting automation and labor-saving initiatives (figure 5).

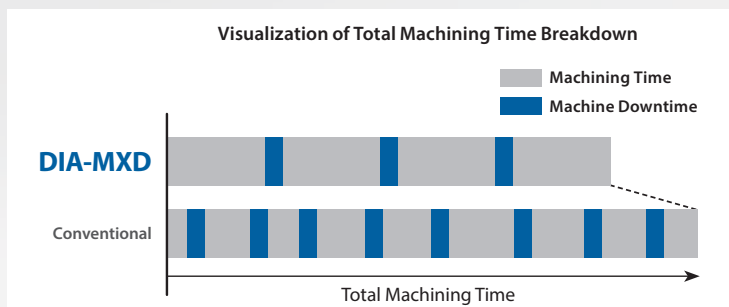
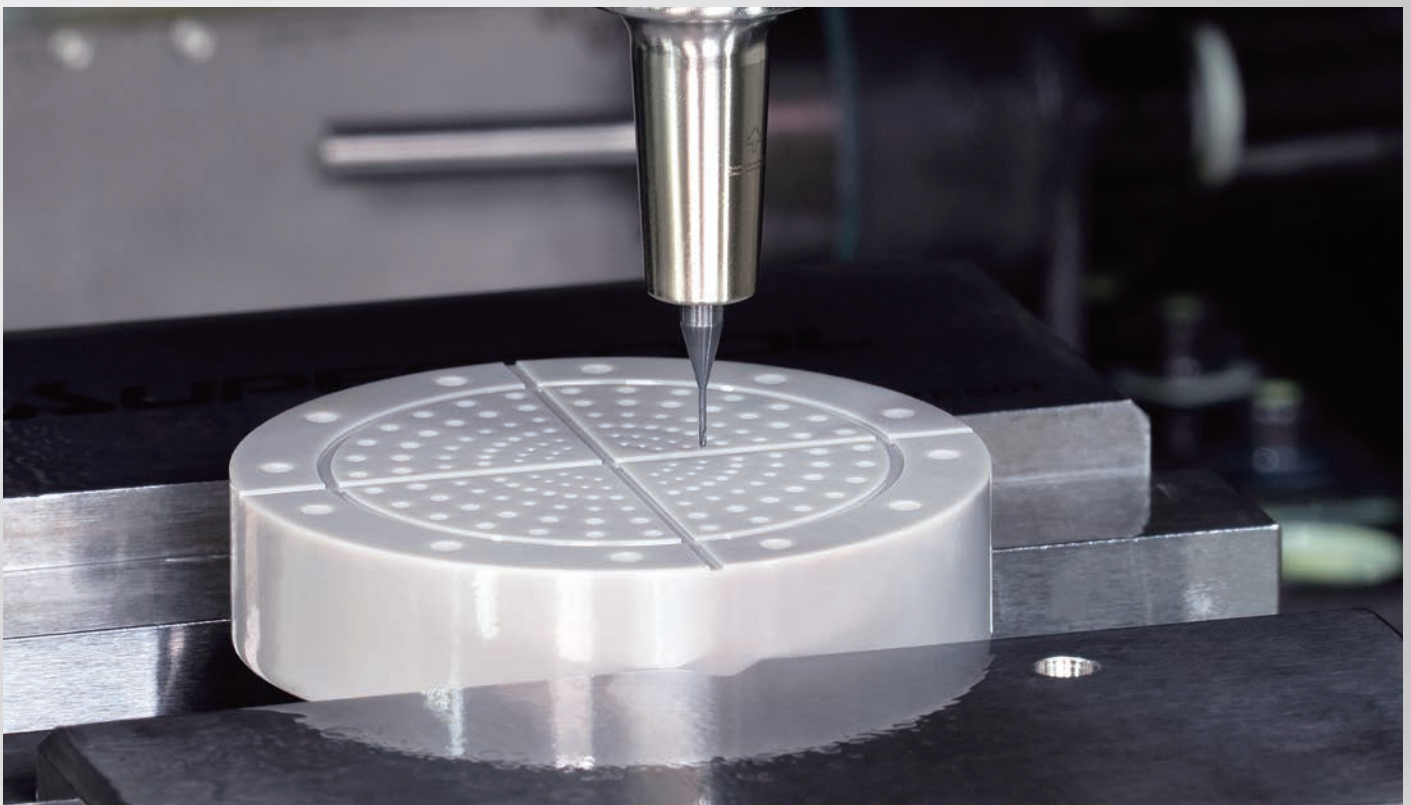


Figure 5. High productivity achieved with the DIA-MXD.

Conclusion

To meet the growing demand for ceramic machining, the DIA-MXD is available in a wide range of sizes, starting from 0.05 mm in diameter. While various tools are available for ceramic machining, diamond-coated carbide drills are the preferred choice for diameters under 0.2 mm due to their precision and cost efficiency. As industries continue to shift from metal materials to high-performance ceramics and resins, machining ceramics requires new knowledge and expertise. Even users with limited experience in ceramic machining are encouraged to try the DIA-MXD carbide drill to experience its superior performance firsthand.



Scan for details



From left, OSG Italia engineering manager Andrea Severi and Bifranghi GmbH production manager Francesco Mocellin pose for a photograph at Bifranghi's Althofen plant in Carinthia, Austria.

Shared Evolution

Driving Productivity & Stability at Bifranghi GmbH Austria

Andrea Severi
OSG Italia

In today's rapidly evolving manufacturing environment, long-term success depends not only on technological competitiveness but also on the strength of partnerships. OSG's collaboration with Bifranghi GmbH Austria demonstrates how consistent technical support, shared problem-solving and advanced tooling solutions can turn complex production challenges into measurable gains in efficiency, stability and product quality.



About Bifranghi GmbH Austria

Remaining competitive while upholding high standards of quality and safety is a primary focus for Bifranghi GmbH Austria, a subsidiary of the Bifranghi Group. The company's history dates back to the 19th century in Mussolente, in the Venetian foothills—one of Northern Italy's most dynamic industrial regions. Founded by Francesco Biasion, Bifranghi grew from a small craft-based workshop into a technologically advanced manufacturing organization.

Since 2014, Bifranghi GmbH Austria has operated a modern 10,000-square-meter production facility, supported by a 5,000-square-meter underground area dedicated to chip treatment.

Hot steel forging has always been at the core of Bifrangì's business, and over time the company has expanded its capabilities to include precision machining for automotive components, agricultural equipment, undercarriages for earthmoving machinery, flanges, pipe fittings and a wide range of industrial components.

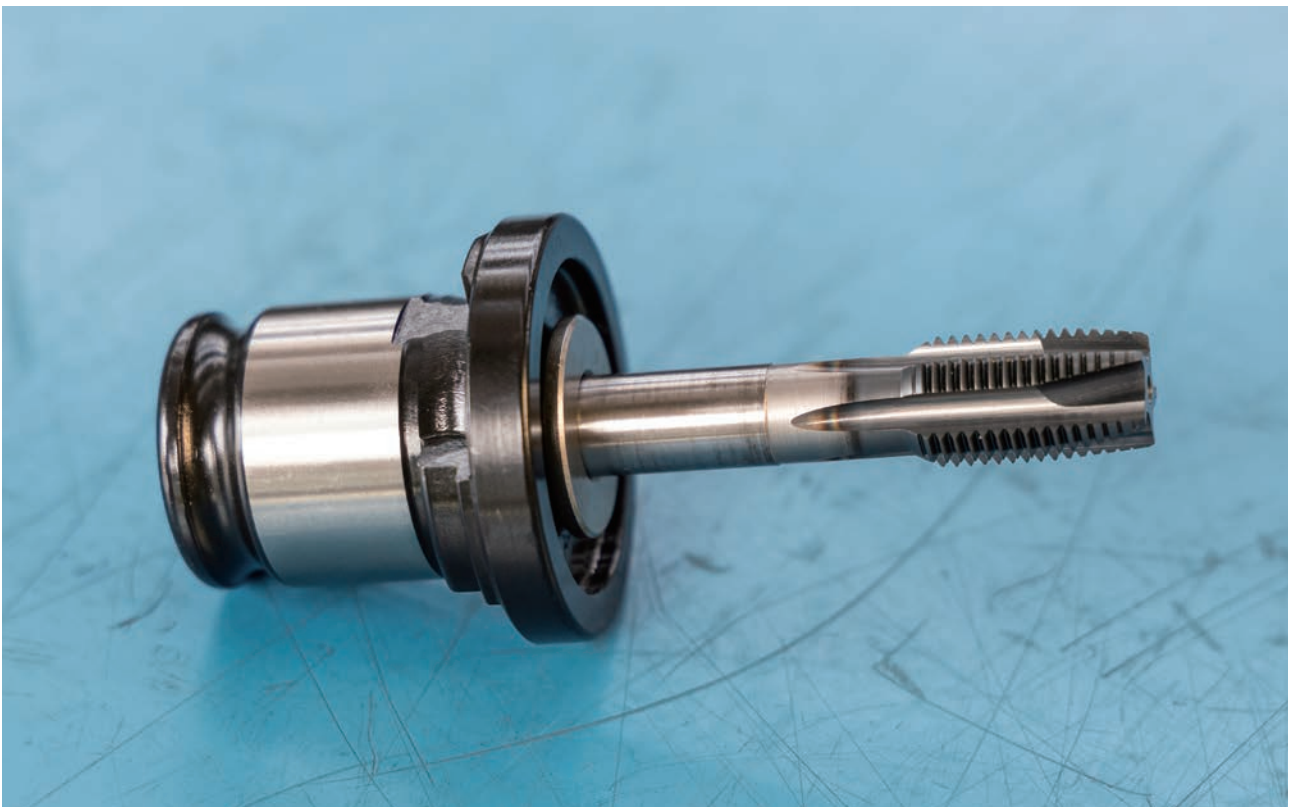
Since 2014, Bifrangì GmbH Austria has operated a modern 10,000-square-meter production facility, supported by an additional 5,000-square-meter underground area dedicated to chip treatment. The site employs roughly 70 people. Its continuous commitment to energy efficiency, environmental sustainability and high product quality has made Bifrangì a trusted partner for major industrial companies throughout Europe and the United States. Today, the company produces more than 2,000 items ranging from 0.3 to 150 kilograms, with thousands of machined components shipped worldwide each day. At its Althofen plant in Carinthia, Austria, Bifrangì manages every stage of production—from forged blanks to finished components—supported by an extensive, modern machine park.



Interior view of Bifrangì's Althofen plant in Carinthia, Austria.

Driving Improvement Through Collaboration

Bifrangì aimed to increase productivity, extend tool life, stabilize tapping processes and improve chip control in two high-volume carbon steel applications. Through close collaboration between Bifrangì's engineering team and OSG's technical specialists, and by implementing OSG's VI-HS-POT tapping solutions, the company achieved substantial improvements across all objectives.



OSG's VI-HS-POT tap is engineered for high-strength materials and demanding production cycles.

Application 1: Wheel Hub (C50 Carbon Steel)

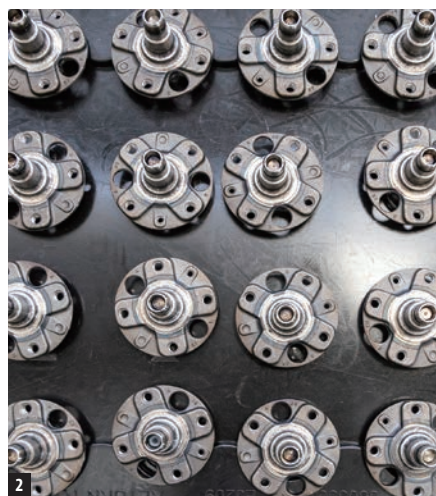
The first component analyzed was a C50 steel wheel hub produced since 2016 at an annual volume of approximately 1.2 million pieces. Manufactured in batches of 200,000 and processed continuously over three eight-hour shifts, the part requires four M12×1.5 threaded through-holes at a depth of 14 mm. A material change introduced to meet new environmental regulations resulted in issues with chip evacuation and tapping stability.

To address these concerns, OSG recommended the custom VI-HS-POT tap (EDP: T2511948), engineered for high-strength materials and demanding production cycles. The tool delivered immediate and significant benefits. Tool life increased from 1,600 to 2,400 threads, a 50 percent improvement over the previous solution. Thread surface quality improved noticeably, and chip evacuation issues were fully resolved, resulting in greater process stability and reduced machine downtime.

Cutting conditions included a speed of 20 m/min, a rotational speed of 530 rpm and a feed rate of 795 mm/min. A 10.5 mm pre-hole, produced using a high-quality step drill, ensured compatibility and consistency in the tapping process.

1 & 2. Wheel hubs made of C50 carbon steel. Each part requires four M12×1.5 threaded through-holes at a depth of 14 mm.

3. A C50 carbon steel wheel hub threaded using OSG's VI-HS-POT tap.



Application 2: Wheel Hub (C56 Carbon Steel)

The second component analyzed was a C56 steel wheel hub for commercial vehicles, produced annually since 2016 at a rate of roughly 250,000 pieces in batches of 50,000. Each part requires five M14×1.5 through-holes at a depth of 16 mm. Machining takes place on two separate lines, each presenting its own difficulties. One line faced tapping instability caused by material changes, while the second struggled with chip evacuation due to the clamping configuration.

For both lines, OSG introduced the custom VI-HS-POT M14×1.5 tap (EDP: T2511153), chosen for its ability to maintain reliable chip control and long tool life. On Line 1, operated on an EMAG VL4 machine, the cutting parameters included a 25 m/min cutting speed, 50 m/min return speed, a forward rotational speed of 570 rpm, a reverse speed of 1,140 rpm and feeds of 855 mm/min forward and 1,710 mm/min reverse. Under these conditions, tool life increased from 1,500 to 3,075 threads, an improvement of 105 percent compared with the previously used tap.



1 & 2. Wheel hubs made of C56 carbon steel. Each part includes five M14×1.5 through-holes with a depth of 16 mm.

3. A fleet of EMAG VL4 vertical turning machines at Bifrangì's Althofen plant in Carinthia, Austria.

4. A C56 carbon steel wheel hub threaded using OSG's VI-HS-POT tap.

Line 2, running on a Vigel 325 TH machining center, required adapted conditions: a cutting speed of 30 m/min, a return speed of 60 m/min, a forward rotational speed of 680 rpm, a reverse speed of 1,360 rpm and feeds of 1,020 mm/min forward and 2,040 mm/min reverse. With cutting conditions unchanged, the new tool geometry increased tool life from 2,125 to 2,530 threads—a 19 percent gain—and completely eliminated chip-evacuation issues. Both lines used a 12.5 mm pre-hole produced with a step drill that ensured consistent hole quality and smooth integration with the tapping process.

The Human Element Behind the Success

The results achieved in these applications were not driven solely by advanced tooling, but by the collaboration and trust built throughout the partnership. Bifrangì Italia and Bifrangì GmbH Austria first engaged with OSG through area representative Alberto Pasquali, whose commitment extended beyond commercial activity and fostered a strong professional relationship—particularly with company owner Roberto Biasion and purchasing manager Fabio Pegoraro. This foundation of trust supported a shared, long-term approach to refining and improving manufacturing processes.

OSG Italia Engineering Manager Andrea Severi further strengthened the partnership by providing on-site technical expertise, optimizing cutting parameters and monitoring performance throughout the implementation. His contributions helped validate the tooling solutions and ensured their seamless integration into Bifrangì's production environment.

Conclusion: A Partnership Built on Trust and Performance

The applications analyzed show how strong collaboration and innovative tooling can transform production challenges into opportunities for improvement. In every case, the introduction of the VI-HS-POT tap enhanced tool life, improved thread quality and increased machining reliability, even as materials and production requirements evolved. The partnership between Bifrangì and OSG stands as a clear example of how technology, expertise and human relationships—working together toward shared goals—can generate long-lasting, mutually beneficial success.



ADOX

Coolant-Through Carbide Drill

The ADOX is a high-performance coolant-through carbide drill engineered to deliver stable, versatile machining and long tool life across a wide range of materials—from carbon steel to stainless steel. It features OSG's original MEGA COOLER geometry for enhanced coolant flow and R Gash design for low cutting resistance and excellent chip control. The drill's wavy point form achieves low thrust, improving machining efficiency and reducing stress on the workpiece—ideal for high-productivity operations.

The ADOX is also coated with OSG's proprietary EgiAs coating, offering exceptional toughness, wear resistance, and heat resistance for stable tool life. It is available in diameters from 2 mm to 6 mm, with drill lengths ranging from 3xD to 30xD.



DIA-MXD

Carbide Drill for Ceramics and Glass

Machining ceramics for applications such as semiconductor manufacturing equipment, optical components, and electronic devices presents significant challenges, including inconsistent tool life, unexpected breakage, and rapid wear. These issues are often caused by the sudden delamination of the coating layer, leading to accelerated tool degradation. The DIA-MXD carbide drill addresses these challenges through the integration of a highly wear-resistant HDG coating and a newly developed carbide alloy that offers exceptional adhesion. This advanced combination effectively prevents coating delamination, ensuring stable performance and extended tool life even in demanding applications.

The DIA-MXD is suitable for a wide range of ceramic materials, including alumina, zirconia, silicon carbide, as well as quartz glass. It is available in diameters ranging from 0.05 mm to 2 mm, supporting high-precision requirements across industries.





CBN-FB2

2-Flute CBN Ball End Mill

Precision mold machining often faces challenges such as short tool life, inconsistent accuracy from tool wear, quality variation due to tool replacement, and limited efficiency. Even minimal wear can affect finishing accuracy. The CBN-FB2 addresses these issues with a microrelief geometry that suppresses shape deformation caused by wear. Its superior ball R precision ensures accuracy, while a low spiral design balances cutting sharpness and rigidity. The ultra-high precision shank design provides stable machining accuracy, and its optimized length reduces deflection for maximum tool insertion depth in high-precision holders—eliminating the need to cut the shank.

Made from sintered CBN for exceptional wear and heat resistance, the CBN-FB2 minimizes edge wear during high-speed machining, maintaining cutting precision over extended periods. This contributes to shorter lead times and improved operational efficiency.



AE-TL-N (-N)

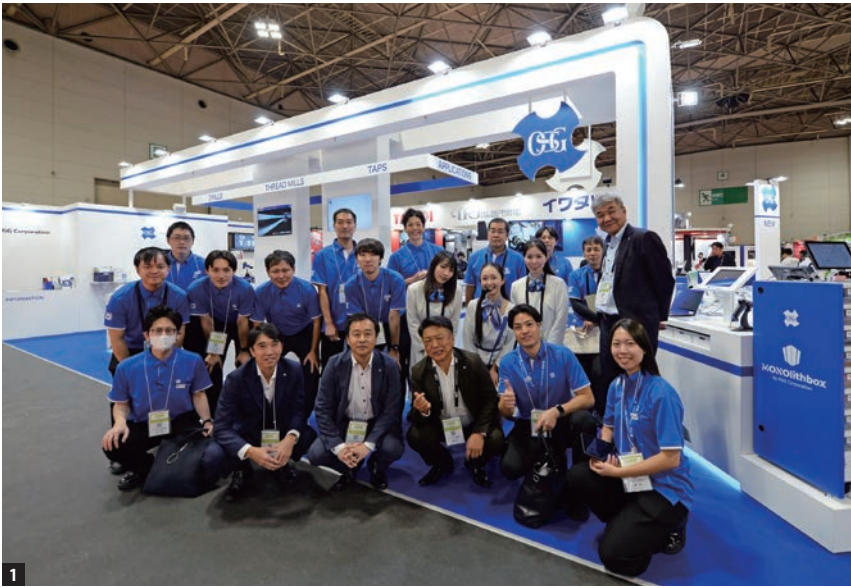
DLC Coated 3-Flute Carbide End Mill with Chipbreaker

Non-ferrous materials offer excellent machinability, enabling high-efficiency processing. However, during machining, large volumes of chips can accumulate on the machine table or bed, potentially affecting stability and overall productivity. The AE-TL-N (-N), a DLC coated, 3-flute long carbide end mill, addresses this challenge with a chipbreaker geometry that breaks cutting chips into small, manageable pieces, allowing easy evacuation by air or cutting oil. By minimizing chip accumulation, machine downtime can be significantly reduced, contributing to improved efficiency and energy conservation.

The AE-TL-N (-N) is available in square and radius styles. Square style options include lengths of cut in 3xD and 5xD, with diameters ranging from 6 mm to 20 mm, totaling six items per length. Radius style options also include lengths of cut in 3xD and 5xD, with diameters from 6 mm to 20 mm, totaling 19 items per length.



OSG Participates in MECT 2025



1. OSG employees gather for a group photo at MECT 2025 in Nagoya, Japan.



2. OSG Corporation participated in the 20th Mechatronics Technology Japan (MECT 2025), held Oct. 22–25 at Port Messe Nagoya in Aichi Prefecture, Japan.

3. OSG showcased its latest drilling innovation, the ADOX—a high-performance coolant-through carbide drill designed for stable, versatile machining and extended tool life across a wide range of materials—at MECT 2025.

OSG Corporation participated in Mechatronics Technology Japan (MECT 2025), held Oct. 22–25 at Port Messe Nagoya. MECT, Japan's largest machine tool exhibition, takes place in odd-numbered years. The 20th edition featured a record 524 exhibitors across 2,092 booths, showcasing advanced technologies in machining, automation, robotics and smart manufacturing. Organizers reported 77,613 visitors during the four-day event.

OSG highlighted cutting tool innovations and environmentally conscious products that promote sustainable manufacturing, including the newly launched ADOX coolant-through carbide drill, A-XPF forming tap, AD-MICRO drill and AE-VMSX end mill. These solutions are designed for labor-saving, high-precision machining across a wide range of materials, from difficult-to-cut alloys to nonferrous metals.

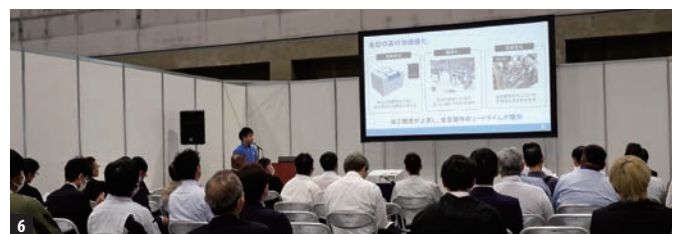
The OSG booth featured eight daily product presentations on deep-hole machining and smart manufacturing. In addition, OSG hosted an exhibitor workshop on Friday, Oct. 24 in Hall 3, focusing on strategies to address labor shortages and rising precision demands. Members of OSG's product development division shared approaches to streamline operations, reduce manpower and enhance automation—offering practical insights to improve efficiency while maintaining quality.



4



5



6

4. Taichi Komatsu, OSG product engineer, interacts with a visitor at the company's booth during MECT 2025.

5. OSG hosted eight daily product presentations at its booth during MECT 2025, highlighting solutions for deep-hole machining and smart manufacturing.

6. OSG's exhibitor workshop at MECT 2025 was held Oct. 24 in Hall 3 at Port Messe Nagoya. The session addressed strategies to overcome labor shortages and meet rising precision demands, offering insights on automation and efficiency from OSG's product development team.

OSG GmbH Engineering Manager Honored with ANCA Female Machinist Award at EMO Hannover



Third from right: Atzimba Nayeli Martínez Reynoso, engineering manager at OSG GmbH, poses with colleagues from the OSG Group and representatives from ANCA CNC Machines, organizer of the award.

OSG Corporation is proud to announce that Atzimba Nayeli Martínez Reynoso, Engineering Manager at OSG GmbH, has been honored with the ANCA Female Machinist Award at EMO Hannover 2025. Established in 2023, this international award recognizes outstanding women in the tool and cutter grinding industry and promotes gender diversity in a traditionally male-dominated field. Nayeli impressed the jury with her technical expertise, passion for innovation, and unwavering commitment to excellence.

ANCA CNC Machines, founded in Melbourne, Australia, is a global leader in CNC grinding technology. The company believes that fostering diversity unlocks the full potential of the industry by introducing fresh perspectives and talent. The award is open to women who actively use ANCA technology and are evaluated on their problem-solving abilities, innovative tool design, and critical thinking. This year's prize included a sponsored trip to EMO Hannover and valuable networking opportunities.

After earning a degree in biotechnology engineering in Mexico, Nayeli began her career in 2017 at OSG Royco, OSG's group company in Mexico, as a product engineer. She quickly assumed responsibility for optimizing processes for major automotive clients. In 2020, she transferred to OSG GmbH in Germany, where she expanded her expertise and now leads initiatives such as the digitization of manufacturing processes and the development of new tooling standards.

Nayeli values the exchange of knowledge across generations and cultures, which she considers one of the most fulfilling aspects of her work at OSG. She is also passionate about inspiring young women and girls to pursue careers in technical fields. Her blend of hands-on experience, analytical thinking, and creative problem-solving has made her a role model within the industry.

"I look forward to continuing to collaborate with ANCA CNC Machines to drive innovation in cutting tool manufacturing," said Nayeli. "I also want to thank my colleagues and mentors at OSG Royco, OSG GmbH, and OSG Corporation for believing in my abilities, providing me with opportunities, and guiding me throughout my journey. I am confident that we share the same vision and will continue working together to achieve it."



1. The ANCA Female Machinist Award ceremony was held at EMO Hannover 2025, which took place Sept. 22–26. Recognized as the world's leading trade fair for the manufacturing industry, EMO is held every odd-numbered year and serves as a global platform for showcasing advancements in production technology. EMO 2025 featured more than 1,600 exhibitors from 45 countries and welcomed over 80,000 visitors, with more than half coming from outside Germany.

2. Center: Atzimba Nayeli Martínez Reynoso, engineering manager at OSG GmbH, is announced as the winner of the ANCA Female Machinist Award.



From left, university students Sofia Cases Gutmann and Lea-Summer Afalter chat in the lobby of OSG Corporation's international headquarters in Aichi Prefecture during their internship in Japan in September 2025.

OSG Around the World

Intern Interview with Lea-Summer Afalter & Sofia Cases Gutmann

In fall 2025, OSG Corporation welcomed two international interns—Lea-Summer Afalter of Germany and Sofia Cases Gutmann of Spain—for a one-month internship in Japan. From Sept. 2 to Oct. 2, the university students, representing OSG group companies BASS GmbH and OSG Ibérica Tooling, S.L.U., gained hands-on experience at the company's headquarters and explored its global manufacturing operations. Both interns currently study in Germany, where internships may be mandatory or voluntary depending on the university. For Afalter and Cases, the internship in Japan offered a valuable opportunity to immerse themselves in a new culture while expanding their professional and intercultural skills.

OSG's Shinshiro Factory in Aichi Prefecture, Japan. During their five-week internship, Afalter and Cases gained experience across multiple divisions, including engineering, manufacturing, sales and marketing, IT, investor relations, accounting and human resources.





1 & 2. From left, Afalter and Cases present key takeaways and creative ideas following a two-day marketing session at OSG Corporation's international headquarters.

3 & 4. From right, Afalter and Cases participate in a Japanese Ikebana workshop at OSG Corporation's international headquarters, led by certified instructor and OSG employee Akiko Yamamoto.

5 & 6. Afalter and Cases enjoy dinner and karaoke with members of OSG's global sales team after work.

OSG Around the World

Intern Interview with

Lea-Summer Afalter

About the Intern

Lea-Summer Afalter is a German university student majoring in international business at DHBW Mosbach. Her program follows a dual system, alternating every three months between academic study and practical training at BASS GmbH. Drawn to BASS for its proximity to her hometown and international scope, Afalter's apprenticeship led to a one-month internship at OSG Corporation in Japan.



Headquarters of BASS GmbH in Niederstetten, Germany. Established in 1947, BASS is internationally recognized for its high-quality taps, particularly roll taps and specialty tools. In 2019, BASS was acquired by OSG to strengthen its presence in the European market.



Intern Profile

Nationality: German

University: DHBW Mosbach

Major: International Business

Host Company: BASS GmbH

Internship Experience

Afalter set out to learn about OSG's corporate structure and Japanese business culture. She was struck by the kindness and professionalism of her Japanese colleagues and found that patience and openness were key to effective communication, even when language barriers arose. Her experience deepened her understanding of Japanese business practices, which she observed to be more reserved and tradition-oriented compared to the direct approach common in Germany.

Workplace Culture

Afalter most enjoyed connecting with OSG employees and learning from their diverse roles and perspectives. The experience gave her a broader appreciation for Japanese work culture and the importance of teamwork and shared values.



1 & 2. Scenes from a Besenwirtschaft: the right photo captures the cozy interior, while the left shows the welcoming exterior of this traditional German eatery.
 3. Two bottles of wine from a nearby German region, photographed inside a camper. A flyer from the wine producer is placed in front, highlighting the area's winemaking heritage.

Looking Ahead

Afalter encourages future interns to embrace the opportunity fully.

"If you have the opportunity to intern at OSG Corporation, take it," Afalter said. "Meet the people, learn about their work and what motivates them. Even on days when things don't fully make sense, don't be discouraged—keep going. Ask as many questions as you can."

She believes the internship helped her grow in openness, patience and cultural awareness—skills she sees as essential for building strong international relationships in her future career.

Home Country Highlight

Afalter shared that hiking is a popular pastime in Germany. While some prefer hotels or mountain huts, others enjoy traveling by camper. A favorite tradition involves dining at Besenwirtschaften—seasonal, family-run restaurants serving simple fare like bread with toppings and regional cheeses. A highlight is sampling local wines, which reflect the culture and landscape of the region. For Afalter, these outings blend nature, tradition and community—hallmarks of German leisure.

A typical meal at a Besenwirtschaft features fresh bread served in a basket, accompanied by simple regional specialties and local wine.



OSG Around the World

Intern Interview with

Sofía Cases Gutmann

About the Intern

Sofía Cases Gutmann, a dual national of Spain and Germany, grew up in Barcelona and studies in Berlin. She is pursuing a major in industrial engineering and management. Her nine-week internship began at OSG Ibérica Tooling in Spain and continued with a five-week placement at OSG Corporation's headquarters in Japan, alongside fellow intern Lea-Summer Afalter. Drawn to OSG for its international presence and specialization in high precision cutting tools, Cases' interest in the industry was shaped by her academic focus on engineering mechanics and construction.



Office building of OSG Ibérica Tooling, S.L.U. in Spain. The company was established in 2002 and is part of OSG's global network.



Intern Profile

Nationality: Spanish and German

University: Technical University of Berlin

Major: Industrial Engineering and Management (with a Specialization in Mechanical Engineering)

Host Company: OSG Ibérica Tooling, S.L.U.

Internship Experience

Cases' internship goals included gaining insight into global operations, deepening her understanding of factory workflows, and expanding her technical knowledge. She especially valued hands-on experiences in the factories and testing facilities, which helped bridge theory and practice. Throughout her time at OSG, she observed the importance of communication across departments and regions, and gained a deeper appreciation for teamwork in a global business setting. Her time in the marketing department also broadened her view of B2B marketing, highlighting the need for technical expertise alongside creative strategy.

Workplace Culture

Cases appreciated the strong sense of community at OSG and the opportunity to learn from colleagues across departments. She was also struck by the warmth and camaraderie within the workplace, noting how professional relationships often extended beyond office hours through shared activities like coffee outings and karaoke.



1 & 2. From left: before and after. Casa Batlló, an iconic Gaudí building in Barcelona, is transformed with vibrant rose decorations for Sant Jordi, celebrated annually on April 23. The floral displays fill the city's streets in honor of the beloved Catalan tradition.

Looking Ahead

Cases encourages future interns to learn basic Japanese and prepare for Japan's warm September climate. Most importantly, she recommends embracing every opportunity that arises.

"Perhaps the most valuable advice is to say yes to every opportunity that comes your way," Cases said. "Lea and I had the chance to dine with colleagues on several occasions, sing karaoke, and take part in both an Ikebana class and a traditional tea ceremony. We thoroughly enjoyed each experience and will remember them fondly."

She believes the internship helped her build confidence in navigating multicultural environments—an essential skill for her future career in an increasingly interconnected professional world.

Home Country Highlight

Cases shared her love for Sant Jordi, celebrated in Barcelona, Spain, on April 23. Rooted in a Catalan legend, the day honors books and roses with vibrant street displays and cultural events. Families and couples exchange gifts, and students run flower stands that often support social causes. For Cases, the tradition blends beauty, community and purpose—making it one of her favorite days of the year.

A bookstand set up for Sant Jordi, where locals browse titles and exchange books and roses in honor of the legendary knight.



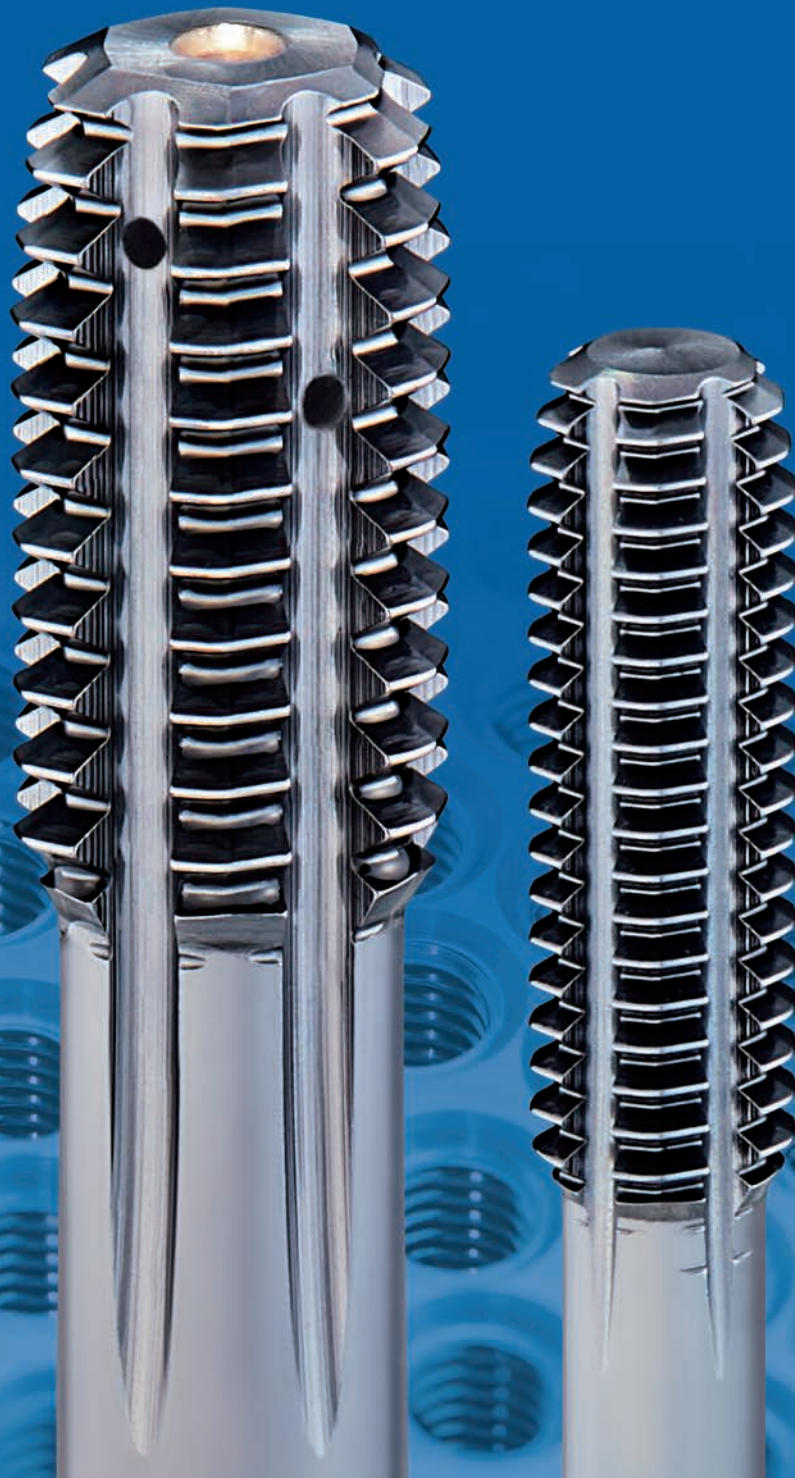


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