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- Laser Cutting
- Automation
- Welding

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Increase the capability of your VMC with a Kitagawa rotary table

Machinists are always looking for cost-effective ways to maximise production, minimise setup times and increase component accuracy. For manufacturers relying on 3-axis vertical machining centres (VMCs), a cost-effective upgrade that allows all these goals to be achieved is a 4th axis rotary table. The pre-eminent brand on the market is from the Japanese company Kitagawa, represented in the UK and Ireland exclusively by 1st Machine Tool Accessories.

On a 3-axis VMC, machining a multi-sided part often requires several manual re-fixturings. Each time the component is moved, reorientated and clamped again, the risk of human error multiplies, setup times accumulate and spindle idle time increases. With a rotary table, operators can machine multiple sides of a component in a single setup. Critical datums and geometric tolerances remain undisturbed throughout the manufacturing process, resulting in vastly superior component accuracy and a steep drop in scrap rates. Table rotation, whether it is indexed or interpolated with the VMC's linear axes, can be controlled by the machine's CNC system or by a separate controller.

Kitagawa rotary tables feature exceptional rigidity, accuracy and repeatability. With a wide range to choose from, there is a huge amount of flexibility on offer. The GT table series has a very high clamping torque to withstand high cutting loads, while the MR series is the standard model, perfect for the majority of machining needs. The DM100 is Kitagawa's first waterproof and rustproof table, meeting the requirements of EDM applications.

The TP530 has a large through-hole to facilitate accurate machining and drilling of shaft-type oil and gas industry components. The RK200 is an incredibly quick rotary table that indexes 90 degrees in 0.31 second and has a maximum speed of 100 rpm. The Kitagawa CK160 has a smaller footprint than any other model on the market, with a depth of just 99 mm and can be offered with a built-in 7-port rotary joint. There are many other models on offer.

Contact 1st Machine Tool Accessories on 01725 512517 or email enquiries@1mta.com to speak to one of its engineers or to arrange a free visit from one of its technical representatives. The team looks forward to hearing from you.

1st Machine Tools Accessories
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www.1mta.com

From subcontractor to specialist

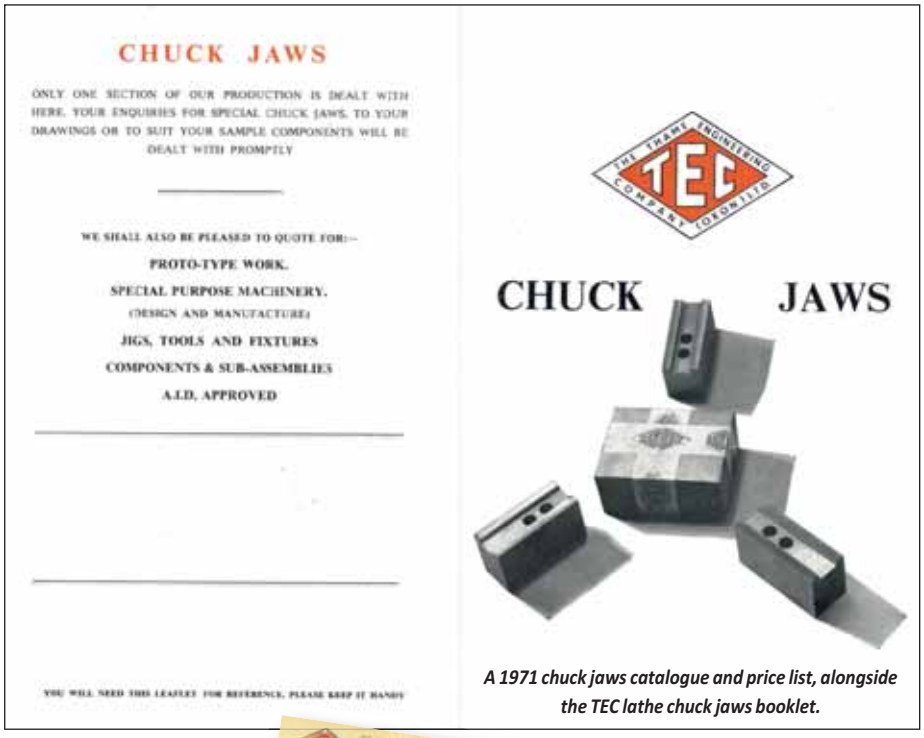
Eighty years of Thame Workholding

Most subcontract machine shops know the pressure to diversify, to stop being purely dependent on whatever work a customer brings through the door and create a product line of their own instead. This August, Thame Workholding marked 80 years since making exactly that leap and its story still has plenty to say to subcontractors weighing up the same decision today.

The business started life in 1946 as Thame Engineering Company (Oxon) Ltd, a subcontract machining operation in Thame, Oxfordshire, taking on work for OEMs who lacked their own manufacturing capability, a familiar position for many of today's subcontractors. For a period, that was the whole business: capacity for hire, dependent on other people's order books.

The turning point came when the company's directors chose to develop products of their own rather than remain solely reliant on subcontract work. That decision produced the TEC brand Thame Engineering Company and its first chuck jaw ranges, each stamped with the TEC Diamond mark that still appears on every product today, backed by a four- or five-digit code that keeps every jaw traceable through decades of manufacturing records. Thame still holds a chuck jaws catalogue and price list dated 1st June 1971 as proof of just how long that system has been running.

It's a decision that changed the shape of the business permanently. Rather than competing purely on subcontract price and capacity, Thame built a stockholding and reputation of its own, today holding close to 1,000 different chuck jaw types ready to ship, and a customer base of more than 1,000, a quarter of them export accounts. Customers still call asking for jaws first supplied in the 1960s and 1970s and thanks to that same coding system, there's a good chance Thame can identify the part and ship a replacement the next day. This level of continuity is hard to build without decades of consistent product discipline behind it.



A 1971 chuck jaws catalogue and price list, alongside the TEC lathe chuck jaws booklet.

The business relocated to its current site in Long Crendon, Buckinghamshire, in 1987 and has continued investing in its own manufacturing capability ever since: 3-, 4- and 5-axis machining centres, multi-pallet handling, automated loading for unmanned production, CMM inspection and full CADCAM support. It also expanded beyond its own

Thame Workholding - Long Crendon facility in 1988.

A selection of Thame Workholding chuck jaws — one part of a range now approaching 1,000 types.

Thame Workholding at MACH 2026.

TEC range, taking on UK representation for a number of international partner brands including HWR Spanntechnik, Samchully, WITTE, Flaig, Rotor and Air Vise alongside VersaBuilt automation systems, giving the business a breadth well beyond what any single subcontract customer could have driven on its own.

Managing director Mark Thomas, who took over running the business alongside manufacturing engineering director Mark Randall from previous owners David and Hilary Handley, sees the anniversary as proof of what that early decision built.

He states: "We started out exactly like a lot of our customers still do today, taking whatever subcontract work came in the door. Developing our own product range is the reason we're still here 80 years on, with a business that isn't dependent on any one customer's order book. We've still got a price list from June 1971 carrying the same diamond mark we use now. That continuity doesn't happen by accident, it happens because you commit to building something of your own."

Accredited to ISO 9001:2015 and carrying the Made in Britain mark, Thame Workholding continues to design and manufacture standard and bespoke chuck jaws, fixtures and workholding equipment in-house, serving aerospace, automotive, medical, oil & gas and general engineering customers across the UK and beyond.

Eighty years on from its first subcontract order, Thame's story is a reminder of how far a shop-floor decision to build something of your own can carry a business and how much value there still is in keeping that discipline going, decade after decade.

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Where will UK engineering find its next breakthroughs?

There is no shortage of discussion about the pressures facing UK engineering and manufacturing. Skills shortages remain stubborn, supply chains are being rethought in response to geopolitical instability and changing trade relationships. AI is moving from possibility to application. New materials are creating fresh opportunities, while net zero continues to influence decisions across design, production and investment.

Returning to the NEC Birmingham on 4th and 5th November 2026, Advanced Engineering has opened visitor registration for its 17th edition. At a time when businesses are looking not only for new technologies, but for clearer direction and stronger connections, the event continues to provide a meeting point for the UK engineering community.

Where the industry connects

For many across the sector, Advanced Engineering is more than an event in the calendar. It is where engineers, manufacturers, technology developers and supply chain specialists come together to understand what is changing, what is emerging and what demands attention next.

That matters because engineering is no longer shaped within neat sector boundaries. Aerospace, automotive, defence, electronics, energy, advanced materials, composites and manufacturing technology are increasingly connected by shared challenges and overlapping opportunities. Questions around productivity, resilience, supply chain security and digital adoption now move across the wider industrial landscape.

Stephen Phipson CBE, chief executive officer at Make UK, says: "I love coming to Advanced Engineering because it's a great place to see some of the most advanced technologies being deployed in manufacturing right now. I'm especially interested in those related to AI, green technologies and renewables; areas where we're seeing high growth. This event is a fantastic showcase for cutting-edge innovation."

Bringing the value chain together with UK Metals Expo

One of the most significant developments for 2026 is the event's first-time co-location with UK Metals Expo. Together, the two events will create one connected experience across metals, composites, materials and advanced engineering, bringing more than 700 exhibitors and over 15,000 visitors to the NEC Birmingham.

That is more than a scale story. It reflects how engineering works in practice. Material choices influence performance, cost, sustainability and manufacturability. Supply chain decisions affect resilience, lead times and innovation capacity. Design, processing and production technologies all shape one another. By bringing Advanced Engineering and UK Metals Expo together, the 2026 edition creates a broader and more joined-up view of the industrial landscape.

For visitors, that means the ability to move more easily between upstream materials expertise and downstream applications, components, systems and manufacturing processes, creating a more complete picture of how industrial decisions connect across the value chain.

AI, electronics and the next phase of engineering

AI is now part of almost every serious conversation in engineering. From design optimisation and simulation to automation, predictive maintenance and data-led decision-making, it is increasingly shaping how organisations improve efficiency, reduce risk and strengthen competitiveness. Electronics sits just as firmly within that shift.

Recognising that, Advanced Engineering 2026 will introduce a new Electronics and Semiconductors Forum focused on advanced electronics, systems and photonics.

More than a showcase

One of the reasons Advanced Engineering matters is that much of the UK's innovation is still not visible enough. Across the country, companies are solving problems in materials, manufacturing, automation, systems integration and industrial technology. Yet many of those developments remain hidden within supply chains or specialist markets.

Advanced Engineering helps bring that work into view. Through its Enabling Innovation Zone, SME pavilions, forums, advisory input and wider industry voices, the event creates space for discussion around the issues businesses are actively trying to solve, from industrial resilience and advanced materials to skills, electronics and the practical application of innovation.

Simon Farnfield, head of UK manufacturing cluster at Easyfairs, says: "Advanced Engineering has always had an important role in bringing together the communities shaping the future of UK industry. What is increasingly clear is that businesses do not need more noise; they need relevant conversations, trusted connections and practical insight. Whether the issue is AI, supply chain resilience, advanced materials, electronics or long-term capability, our focus is to create an event where the industry can come together to share knowledge, explore solutions and better understand what happens next."

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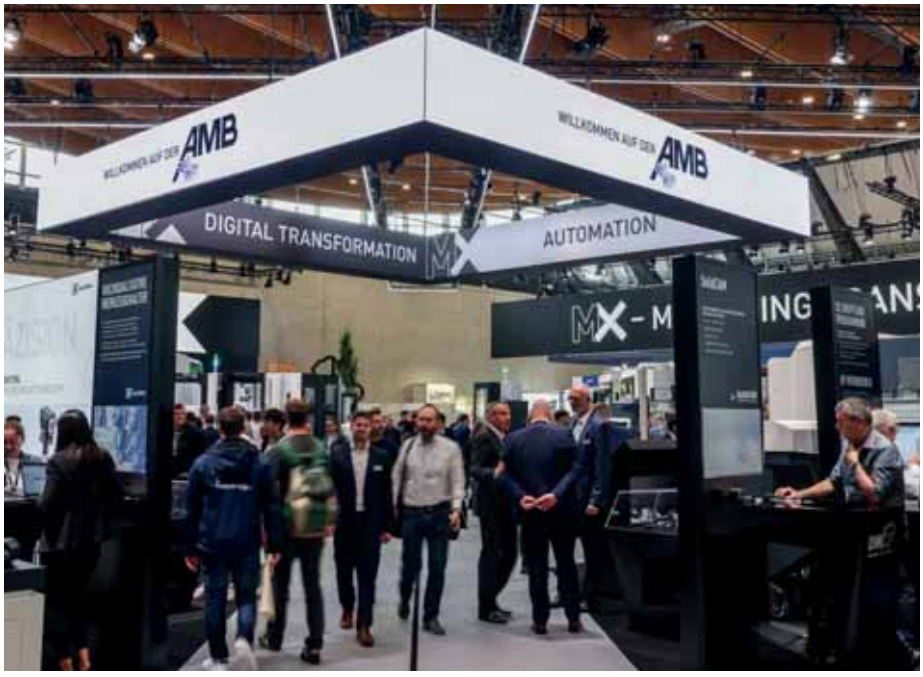

AMB returns to Stuttgart, Germany this September

In the heart of Europe's most industrialised region, AMB has been shaping the future of metalworking for over 40 years. From 15th to 19th September 2026, you can experience the full power of machining across ten exhibition halls.

AMB has established itself as a leading trade fair in even-numbered years. It holds a top position among industry fairs and is among the top five worldwide.

On a total exhibition area of over 120,000 gross square metres, global market and technology leaders gather to present technologies for tomorrow's production. Visitors benefit from the clear and thematic hall layout. The AMB is supported by an attractive accompanying programme and exciting special exhibitions. Whether by plane, car, urban rail or train, the Stuttgart trade fair grounds are easily accessible.

At AMB, you will experience the world of metalworking as comprehensively as hardly anywhere else whether you shape, decide, or work hands-on with machines every day. Discover the entire value chain of machining across ten halls, each clearly structured by theme. Meet renowned manufacturers as well as innovative niche players, many of them exclusively at AMB. Experience the latest machines and technologies up close, gain practical insights and find solutions for your specific projects. Together, we initiate collaborations here that tackle the challenges of tomorrow.

The new look of AMB

A new look, a new claim: "Where metal comes alive." Metal is more than just material, it's movement, creativity and collaboration. AMB 2026 celebrates the people, machines and ideas that bring metalworking to life. Discover how the new design and message embody the passion, precision and innovation that drive the industry forward.

Metal is not merely a material. It is shaped, formed and perfected until something entirely new emerges, through powerful machines and, above all, through the people who bring it to life with precision and passion. That is exactly what AMB 2026 stands for: metalworking as a living experience.

When people, machines and ideas unite

In the world of metalworking, the industry's heart beats strong. But what truly drives it are the people behind it, those who set new standards with their skill, creativity and vision. Together with cutting-edge technology and a shared passion for progress, they create innovation that can be felt and nowhere is that spirit more alive than at AMB.

The industry's driving force

With its new claim, AMB 2026 positions itself as the central meeting point for the international metalworking community; a place where ideas take shape, innovations are unveiled and collaboration happens on equal ground. Here, experts from around the world come together with fresh impulses, pioneering products and strong partnerships to shape the future of the industry. AMB is not just an exhibition, it's an experience that brings the world of metalworking to life.

A community that connects

Especially in challenging times, the strength of the community becomes visible. AMB 2026 stands for this spirit of unity, for open dialogue, shared solutions and a network that supports one another.

The new claim "Where metal comes alive" and the new key visual capture this mindset perfectly: People are at the heart of it all, in harmony with machines, ideas and technologies. The new design reflects this vision: fresh, modern and full of energy. It radiates dynamism and optimism while staying true to the industry's roots.

Reasons to visit AMB Stuttgart

- At the AMB Stuttgart 2026 Trade Fair, the businesses can effectively present their brand, offerings and innovations and gather key industry insights.
- More than 1,000 exhibitors from over 30 countries are expected to attend the exhibition and display their latest machines, tools, production systems and services.
- With around 125,000 m² of exhibition space, AMB Exhibition 2026 will open to exhibit and display the products and services.
- As one of the industry's significant gathering platforms, the exhibition will offer access to qualified metalworking professionals across verticals.
- More than 50,000 exhibition visitors, including representatives from the automotive, aerospace, energy and mechanical engineering industries, are expected to attend.

The venue of the AMB Stuttgart 2026 will allow the gathering of competitive intelligence on similar and alternative offerings, strategies, pricing and capabilities.

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Resilient supply chains, medical technology and high-performance machining solution at AMB

How can supply security, productivity and process reliability be combined in an increasingly volatile market environment? CERATIZIT will provide answers to this question at AMB 2026 in Stuttgart.

Visitors can meet CERATIZIT at the show to discover how manufacturing processes can be safeguarded across the entire value chain while improving economic efficiency. Under the theme "Resilient by Design", the company will demonstrate supply chain security from powder production to the finished cutting tool. Visitors can explore the "Flow of Tungsten" through an interactive exhibit, following the journey of tungsten as it moves through CERATIZIT's global production network.

Best-in-class solutions for demanding components

Beyond individual cutting tools, CERATIZIT will place a strong focus on complete machining concepts. The company will present tailored tooling solutions for demanding applications in the automotive, aerospace and hydraulics industries. The objective is to optimise entire manufacturing processes in terms of productivity, process reliability and cost efficiency. Using real-world components, visitors will gain insights into proven machining strategies for complex manufacturing tasks.

Live machining

A key highlight at the booth will be a live machining demonstration on a TRAUB mill-turn centre. Visitors will be able to observe the complete machining of a spinal implant, showcasing the requirements for precision, process stability and tool performance when machining demanding materials. In addition, CERATIZIT will present specialised tooling solutions for titanium and heat-resistant superalloys, materials that play a critical role in both the medical technology and aerospace industries.

New solutions for milling, turning and drilling

In the tooling segment, CERATIZIT will showcase solutions from its CoreLine and Advanced Lines portfolios. While the CoreLine is designed for high availability, easy procurement and an attractive price-performance ratio, the Advanced Lines focus on demanding applications requiring maximum productivity and process reliability. Highlights include the expanded SilverLine solid carbide end mill range, now available with a comprehensive inch-based portfolio and MaxiTurn - EcoPeel. This innovative bar peeling solution combines roughing and finishing operations within a single tooling concept, helping manufacturers simplify processes, reduce tooling costs and increase machining efficiency.

Recycling and the buyback of carbide scrap play a central role in CERATIZIT's "Flow of Tungsten".

Digital solutions

In addition to tooling solutions for milling, turning and drilling, CERATIZIT will showcase digital applications at AMB 2026 that support manufacturing planning and tool selection. The goal is to help users make fast and well-informed decisions throughout the entire manufacturing process.

With ToolSelect, visitors can quickly identify suitable tools for their machining tasks and compare tooling concepts in terms of performance and cost-effectiveness.

The digital portfolio is complemented by Spanflug MAKE, a software solution for automated component analysis. Based on CAD data, the software evaluates manufacturing times, machining costs and manufacturability. This provides users with reliable information for cost estimation and production planning already in the early stages of a project.

For over 100 years, CERATIZIT, a member of the Plansee Group, has been a pioneer in developing exceptional hard material solutions for machining and wear protection. The private company, with its registered office in Mamer, Luxembourg, develops and produces highly specialised cutting tools, indexable inserts, rods and wear parts from hard materials.

The CERATIZIT Group is a leader in several industrial sectors and successfully develops new carbide and cermet grades for wood, metal and stone working and other applications.

With over 7,000 employees at more than 30 production facilities around the world and a sales network comprising over 50 branches, CERATIZIT is a global player in the carbide industry.

Above & Below: 2 in 1: With the MaxiTurn - EcoPeel, CERATIZIT introduces an indexable insert system for bar peeling that combines roughing and finishing operations within a single tool concept.

SilverLine tools are designed to deliver consistent, reliable performance across a wide range of materials and machining operations. The portfolio has now been expanded with a globally available inch-size range.

Save time with ToolSelect: This innovative application helps users identify the optimal tooling solution in as little as 90 seconds.

The company's international network includes the subsidiaries AgriCarb, Stadler Metalle, Xceliron and the joint venture CB-CERATIZIT.

As a technological leader, CERATIZIT is continually investing in research and holds more than 1,000 patents.

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Hall 3 - Booth: B10/B12

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Mazak to showcase next-generation automation and multi-tasking technology at AMB 2026

Yamazaki Mazak is preparing to return for AMB 2026 where it will demonstrate how manufacturers can unlock greater productivity, flexibility and resilience through smarter process integration, advanced automation and secure connectivity.

Taking place in Stuttgart, the show will see Mazak present seven machining solutions that underline the breadth of its technology portfolio and three automation systems including the debut of a new compact pallet automation solution for the European market. Key exhibits on the Mazak stand will include several models from the company's flagship INTEGREX range of multi-tasking machining centres.

Developed in response to growing demand for integrated solutions for flexible and efficient production among both new and seasoned multi-tasking users, the latest innovations are the result of more than four decades of industry-leading insight from Mazak.

Featured on the stand will be the INTEGREX i-250ST NEO, equipped with Mazak's newly launched advanced grinding package. By combining turning, milling and grinding in a single setup, the machine enables manufacturers to reduce cycle times while improving surface finish and dimensional accuracy.

Also featured will be Mazak's first INTEGREX range that is now being manufactured in its European factory for the European market, the j-200S NEO. Ideally suited for general subcontract work, as well as the aerospace, energy and medical industries, this range, which features a second spindle, offers a productivity upgrade for turret lathe users looking to increase profitability by reducing setup and lead times.

Visitors to the exhibition will also be among the first to see in live action a new compact pallet automation system aimed at delivering a simple and accessible entry point into 5-axis automation for high-mix, low-volume production environments.

The solution will be integrated with a second-generation CV5-500 5-axis machining centre. This new model benefits from an optimised machine structure to enhance static and dynamic rigidity, resulting in greater performance, accuracy and thermal stability, as well as a refreshed design from renowned industrial designer Ken Okuyama.

Mazak's AMB stand will also highlight several compact, high-productivity machines designed to deliver a strong return on investment for savvy buyers looking to invest in reliable technology that is supported through a strong European service network. This includes the QRX-50 MSY turning centre, which features a twin-spindle, double-turret construction to deliver fast ROI and improved margins. The machine on display at AMB will be fitted with a barfeed automation system to showcase one of the easiest ways to start an automation journey. Alongside this will be the VC-Ez 410 IP 40-taper vertical machining centre, which offers entry-level pricing for high-volume manufacturing applications through a combination of class-leading spindle technology, rapid speeds and intuitive machine control.

Yamazaki Mazak's INTEGREX i-250ST NEO complete with new grinding package.

The company's highly popular Solutions Centre will also be present at AMB, complete with three machine simulators demonstrating its world-leading SMOOTH CNC technology and Mazak iCONNECT M2M digital service connecting all machines throughout the show. Mazak iCONNECT features an integrated real-time monitoring tool to identify anomalies early to support minimised downtime. In addition, Fast Track support, delivered via secure remote access, enables rapid diagnostics and efficient operational assistance.

Bruno Munier, deputy European managing director, at Yamazaki Mazak, says: "Manufacturers across Europe are under pressure to deliver more complex work, faster and with greater confidence. The businesses best placed to respond are those investing in connected, automated and highly flexible production environments.

Bruno Munier, deputy European managing director at Yamazaki Mazak.

"At AMB 2026, our stand will showcase how Mazak technologies can help machine shops integrate more processes, automate more effectively and make better use of real-time data in a secure way. We look forward to welcoming visitors and demonstrating the practical steps manufacturers can take to unlock their next level of productivity."

Yamazaki Mazak UK Ltd
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Email: info@mazak.co.uk
www.mazak.com/eu-en

Hall 7 - Booth: C11

Experience complete machining solutions across the entire process chain

For the first time in eight years, Walter will be back at the AMB exhibition in Stuttgart. Tailor-made solutions under the motto 'The Right Match' will demonstrate how Walter customers can benefit from solutions that encompass the entire process chain.

Market demands and Walter's response: 'The Right Match'

The demands of metalworking continue to rise with companies simultaneously having to improve productivity, quality, cost-effectiveness and sustainability. New materials, shorter development times, cost pressures and the desire for stable, reproducible processes are increasing manufacturing complexity.

Walter addresses these challenges with a holistic approach. 'The Right Match' describes the moment when requirements, specific applications, suitable technology and technical advice come together to create tangible added value for manufacturing. The aim is to find the best solution, both technically and economically, for every manufacturing task. This incorporates a well-thought-out combination of tools, engineering expertise, digital solutions and service.

This philosophy also shapes Walter's exhibition presence at AMB 2026. The stand brings to life what 'The Right Match' means in practice: focus, advice and concrete solutions for demanding applications in modern machining.

Tour along the process chain

Visitors will be guided along the process chain at the Walter stand. The starting point is typical manufacturing challenges: from the planning and design of a process, through the selection of suitable tools and machining strategies, to services such as reconditioning and recycling.

Using practical examples from the key sectors of aerospace, automotive and general mechanical engineering, Walter will demonstrate how expertise across these areas is translated into concrete manufacturing solutions. This

highlights how process planning, tooling solutions, digital support and service offerings work together to improve productivity, process reliability and sustainability.

The tour will convey one key message to visitors: high-performance machining is achieved when the specific application is fully understood and matched with the appropriate technical solution. It is precisely this principle that Walter will showcase at AMB 2026, positioning itself as 'The Right Match' for visitors. To participate in the stand tour, visit Walter in Hall 3.

Walter GB Ltd
Tel: 01527 839450
www.walter-tools.com

Hall 3 - Booth: E50

Partnership throughout the entire life cycle

In a dynamic market environment marked by growing competitive pressure and global changes, flexible decision-making and predictable investments are becoming increasingly important.

Under the motto "Never Stop Manufacturing the Future," DMG MORI will demonstrate, at AMB in Stuttgart, how the company supports its customers with productive manufacturing solutions and long-term partnerships. The machine tool manufacturer offers guidance and certainty throughout the entire life cycle of an investment in a dynamic market environment.

At its booth, spanning over 2,100 m² in Hall 10, visitors can experience 20 largely automated machines in action. With products for 5-axis simultaneous machining, 6-side turn-mill processing and additive manufacturing, the innovation company is shaping technological development in machine tool manufacturing, a development consistently aligned with the pillars of Machining Transformation (MX): process integration, automation, Digital Transformation (DX) and Green Transformation (GX). To complement this concept, DMG MORI is showcasing its new solutions in the Best Fit Machines (BX) category. These are machines that offer a scalable entry point into Machining Transformation (MX) with low complexity.

Long-term collaboration as a key to success

Under the motto "Never Stop Manufacturing the Future," DMG MORI will demonstrate how productive manufacturing solutions and long-term partnerships enable future-proof production at the exhibition.

For DMG MORI, the design and commissioning of a manufacturing solution marks the beginning of a long-term collaboration with its customers. The focus is on reliable partnerships throughout the entire lifecycle. This foundation enables the development of competitive manufacturing solutions that meet rising quality and productivity requirements. To achieve this, DMG MORI combines state-of-the-art machines with efficient automation. Digital tools and products from the DMG MORI Qualified Products (DMQP) portfolio round out the offering. Service and spare parts programs ensure high availability. Modernisation concepts such as retrofits and lifecycle services extend the useful life of the investment and adapt it to new requirements. Financing solutions from DMG MORI finance and customised training programs are also integral parts of this collaborative partnership.

Best fit portfolio for scalable manufacturing

DMG MORI introduces the DMV 160 as a new model in its vertical milling machine lineup. With CELOS and an automation interface included as standard, it offers a cost-effective and scalable entry point into Machining Transformation (MX).

It views Machining Transformation as a holistic approach to designing efficient and productive manufacturing solutions for the most demanding applications. At the heart of this approach are technologies such as 5-axis simultaneous milling and 6-side complete machining on turn-mill centers, which serve as the foundation for integrating additional process steps, such as gear cutting and grinding. Automation solutions and Digital Transformation (DX) also contribute to the sustainable optimisation of processes. The goal is competitive manufacturing that is sustainable in the spirit of the Green Transformation (GX).

The new BX solutions complement the MX portfolio with less complex, attractively priced machines. Examples of this at AMB include the DMV 160 as a new size class in vertical milling, the CLX 450 for turn-mill operations and the DMX 80 U for 5-axis milling. Machines like these enable a cost-effective entry into future-proof production, even in markets with lower investment willingness. In an already state-of-the-art manufacturing environment, they increase production capacity for simpler workpieces. BX Solutions expands the machine portfolio with cost-effective manufacturing solutions, most of which are already compatible with CELOS X and can be automated. In addition, DMG MORI technology cycles accelerate shop-floor programming. With the complete Gear Package ALL IN 2.0, featuring eight technology cycles, users can perform gear machining on existing turn-mill machines without having to use a separate gear-cutting machine.

Process optimisation

With turn-mill centres such as the 3. Generation NTX 2500, DMG MORI enables efficient 6-side complete machining while also laying the groundwork for the integration of process steps such as grinding.

Long-term competitiveness does not stem solely from individual machines, but from manufacturing solutions that can be adapted to changing requirements. That is why DMG MORI supports its customers with technologies that make processes safer and more productive. These include, in particular, 5-axis simultaneous machining centres and turn-mill centres for 6-side complete machining. Grinding and measuring can also be integrated into a single setup, as DMG MORI demonstrates on the DMC 80 FDS duoBLOCK or the 3. Generation NTX 2500. An automatic measuring unit, along with pallet and workpiece changes, increases machine uptime. The result is consistently precise machining all the way through to finishing.

DMG MORI also implements complete machining in the field of gear cutting. Even on a CLX 450, the DMG MORI gear BROACHING technology cycle supports job shops in particular by enabling flexible and more cost-effective gear production without the need for specialised machinery. Integrated processes like these shorten lead times and lay the foundation for stable processes and sustainable success.

Additive technologies also open up new possibilities in manufacturing. With powder-bed systems from the LASERTEC SLM series and the LASERTEC DED hybrid models for laser cladding, DMG MORI supports users from identifying suitable applications to successfully integrating additive processes into their existing production.

Ready for 24/7 operation with flexible automation

Smaller batch sizes and greater component variety mean that automation solutions are no longer limited to pure mass production but must increasingly be versatile. Using a 2. Generation DMU 60 eVo, DMG MORI demonstrates with the

compact MATRIS WPH 70 just how flexible automated manufacturing can be. The robot-based system is designed to handle both workpieces and pallets. In combination with an automatic measuring unit, the MATRIS WPH solutions contribute to significantly higher machine uptime. They thus pave the way for cost-effective 24/7 production.

The Robo2Go is now available in combination with the easyFIX automation clamping system. For changing workpieces, the robot can precisely reposition the vise, giving it even greater autonomy. Manual intervention by an operator is eliminated, while automated clamping ensures consistent processes. DMG MORI will present the solution at AMB on a 5-axis DMU 40.

Digital Transformation (DX): Connected manufacturing and faster programming

As a cornerstone of Machining Transformation (MX), Digital Transformation (DX) expands innovative manufacturing solutions. With CELOS X, DMG MORI has created a platform that seamlessly connects machines, processes and applications. This results in less complex and significantly more transparent production. When it comes to service, the online platform my DMG MORI accelerates problem-solving through equally transparent and direct communication with the relevant specialists. Spare parts are also procured via a digital platform.

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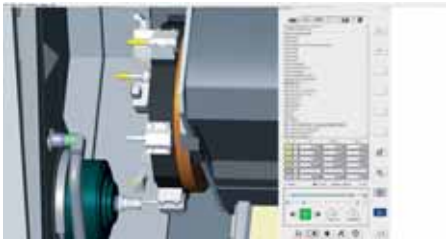
Hall 10 - Booth: E10.4

CAM and MES for more efficient manufacturing

OPEN MIND Technologies will be exhibiting at AMB in Stuttgart. The company will present the latest enhancements to its *hyper*MILL CADCAM suite as well as the Hummingbird Manufacturing Execution System.



Among the new features in *hyper*MILL is 2D hale machining, also known as contour planing. This is supported by both machining strategies and simulation to enable scratch-free surface finishes. It is suitable for sealing surfaces in battery manufacturing and other areas where a high-quality surface finish is required. Also on display at AMB are enhancements to the *hyper*MILL TURNING Solutions, which simplify turning programming and ensure support for new, complex turret-type turning during collision checking.

Deburring feature package

Burrs in hard-to-reach areas have often required significant effort during manual post-processing. With three efficient strategies for hole brushing, hole deburring and component edge deburring, *hyper*MILL offers a comprehensive solution. All strategies can be executed as both 3-axis and 5-axis machining and ensure burr-free part edges directly on the machine.

*hyper*MILL INTELLIGENCE

Under the term '*hyper*MILL INTELLIGENCE,' OPEN MIND presents its concept for effectively combining human expertise, smart automation, digital optimisation and Artificial Intelligence (AI). In CAM programming, rule-based automation, proven logic and access to company-specific knowledge deliver consistent, transparent results. OPEN MIND also uses AI to analyse data, identify patterns and make existing expertise available more quickly.

Tool management in MES and CAM

Also on show will be Hummingbird MES. This modular suite consists of four main components. This includes planning and control, Machine Data Acquisition (MDE), CAM/CNC integration and tool logistics. Thanks to the seamless integration of OPEN MIND's CADCAM suite and MES, tool management also offers significant advantages. Centralised tool management saves time and money by streamlining workflows and making tool data available company-wide.

At AMB, OPEN MIND will present a selection of workpieces machined with *hyper*MILL from various industries as practical examples.

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Hall 2 - Booth: B21

DN Solutions and Heller to showcase joint manufacturing expertise

DN Solutions and Heller will present their combined advanced manufacturing expertise at AMB. The joint exhibition will focus on integrated manufacturing solutions that combine machine tools, automation, digitalisation and AI-driven technologies to support future-ready production. The stand will feature live machining demonstrations highlighting advanced machining technologies and integrated automation.

Heller will show the HF 5500 horizontal-spindle mill-turn centre for high-precision, 5-axis complete machining and the F 6000 5-axis mill-turn, ideal for heavy-duty cutting, deep cavity machining and producing large, complex parts. Within the Heller Technology Area, visitors will be able to explore application expertise, digital production optimisation and intelligent support solutions, including the AI-based chatbot "Ask.me."

Additional exhibits will include service offerings for maximising machine availability, scalable automation concepts, digital twins, the HELLER Services Interface and the myHELLER customer platform. Workpiece examples from various industries will demonstrate how the combined expertise of DN Solutions and HELLER supports efficient, flexible, high-quality manufacturing, from prototype production and single-part machining to high-volume series production.

DN Solutions will present the DVF 5000, a compact, 5-axis vertical machining centre, designed for machining small-to-medium-size workpieces that require complex, multi-sided machining in a single setup. It will be equipped with an Automatic Workpiece Changer (AWC), a proprietary, compact pallet automation system.

There will also be a DN Solutions DNX 2100 SB integrated with RoboJob automation to create a high-productivity cell designed for high-mix, low-volume or continuous-run manufacturing. By pairing a fully-featured multitasking turn-mill machine with flexible robotic part loading/unloading, machine shops can achieve true lights-out unattended machining.

The exhibit will be complemented by an SMX 3100 S multifunctional turn-mill centre with sub spindle, B-axis milling head and a tool magazine; the DNM 5700 3-axis vertical machining centre for job shops focusing on prismatic plate work, as well as pocket and surface milling and a PUMA 5100 LYB, a rigid, heavy-duty CNC turning centre with an extended bed equipped with a Y-axis and milling capabilities for heavy-duty stock removal on large, long workpieces.

Smart Manufacturing will be another focus. DN Solutions will highlight AI-based technologies, digital monitoring and analytics and consulting services designed to improve quality, service and production optimisation. By connecting machines, data and digital services, manufacturers are able to gain deeper process insights while increasing productivity and efficiency.

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Hall 10 - Booth: A31 & A32

Experience GROB's solutions live at AMB

GROB will present several innovations in the areas of universal machines, automation and digitalisation at AMB in Stuttgart. Across more than 600 square metres of exhibition space, the company will showcase solutions for the cost-effective production of a wide variety of parts, from single-part manufacturing to highly automated series production.

The centerpiece of the trade show presentation is the new GP1350, which is being unveiled for the first time at an external trade show. In addition, GROB will present the GRC-M60 robot cell, a new automation solution, as well as digital applications that make manufacturing processes more transparent and efficient.

GP1350 5-axis portal milling machining centre for machining large parts

With the GP1350, GROB is expanding its universal machine portfolio with a new 5-axis portal milling machining centre. Thanks to its stable, vibration-damping gantry design, the GP1350 is particularly well-suited for applications requiring the high-precision machining of large components. The 5-axis technology enables the production of complex geometries in clamping, thereby contributing to shorter turnaround times.

Modular GRC-M60 robot cell expands GROB's automation portfolio

In the field of automation, GROB is unveiling the new GRC-M60 robot cell for the first time. It complements the company's modular automation ecosystem and opens up additional possibilities for the automated production of a wide variety of parts. Thanks to its modular design, the GRC-M60 can be flexibly adapted to different production requirements. Companies can use it to both expand existing production lines and implement new automation concepts.

Digitalisation from planning to tool management

Another focus of the trade show presentation is digitalisation. GROB demonstrates how manufacturing processes can be digitally mapped and controlled using the COSERA MES system and a fully integrated tool management system.

The goal is to make relevant production data available where it is needed while simultaneously increasing transparency throughout the entire manufacturing process. Visitors will gain insight into how digital solutions can help monitor processes, use resources efficiently and prevent idle states.

Additional technologies and areas of expertise on site

In addition to the trade show premieres, GROB will also provide information on service, customer training, additive manufacturing and E-Mobility. The trade show presentation will be complemented by the introduction of various centres of excellence, including aerospace & defence and semiconductor.

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Hall 10 - Booth: C12

More than just products from MAPAL at AMB

MAPAL will be exhibiting at AMB across an area of 390 m², showcasing product innovations, its comprehensive turnkey offer and specific machining solutions for strategic components from its key sectors.

The precision tool manufacturer's innovations for 2026/2027 are making customers' production processes more productive and easier to manage, while setting new industry benchmarks. "Today, users expect manufacturing solutions that ensure both cost-effectiveness and process reliability, whilst also allowing for flexible adaptation to different requirements," says Jacek Kruszynski, chief technology officer at MAPAL. "At AMB, we will present innovations that meet these requirements and take the opportunity to engage directly with customers and partners."

Among the highlights of the product innovations is the new EA-Performance-System for fine boring. For the first time, MAPAL presents a solution for setting fine boring tools even in the challenging diameter range of 10 to 19 mm using just one adjustment screw. Users benefit from the reduced setting effort and at the same time highest precision and process reliability.

The second generation of the MEGA-Deep-Drill-Alu also sets new standards. The new deep drill has been developed for the reliable machining of large drilling depths in aluminium and combines an optimised geometry, a high-performance cooling system and a tailored cutting material concept. This enables the flexible and reliable machining of various aluminium alloys.

Component-focused manufacturing solutions

As technology partner, MAPAL provides its customers with bespoke support, right through to comprehensive turnkey solutions. MAPAL assumes full responsibility for the entire process, from process analysis and design, through the supply of tools and setting fixtures, to simulation, programming and production support. Visitors to the stand can find out how MAPAL delivers complete project planning, right through to a process ready for production, within twelve to 14 weeks.

As always, MAPAL's trade fair presence focuses on the customer, their individual production portfolio and the machining requirements for their components. MAPAL will showcase representative solutions for applications in the automotive industry, general machining and the aerospace sector, creating a basis for in-depth discussions with visitors.

MAPAL is once again using AMB to showcase the further development of its service portfolio and its key focus areas in the individual market segments. At the same time, the trade fair provides an opportunity to gather practical insights and discuss the future direction of modern manufacturing processes with customers and partners.

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Hall 1 - Booth: C11

Holistic approach to gears on 5-axis for efficient and flexible production

A new chapter in gear innovation

The gear is one of the five simple machines in the Universe and so deceptively simply. It is also a high-performance part in many applications and therefore requires micron accuracy and high-quality surface finish.

The previous generation of machine tool had limitations and often a lack of gear design knowledge by the operator for this specialist part that prevented production on high end applications on this platform. For decades, manufacturers have relied on bespoke, highly specialised machines for gear cutting. These processes also required specialist tooling adding to time and cost. Innovation in gear design has long been limited by the constraints of this machinery.

For Dontyne Gears, the combination of its pioneering software and the Okuma GENOS M460V-5AX machining centre supplied by NCMT has transformed what's possible. Through this partnership, Dontyne Gears has not only proven the viability of manufacturing some of the most complex gear geometries on a standard 5-axis platform but has redefined how precision gear production can be achieved efficiently, flexibly and accurately to the highest industry standards.

Proving the impossible

Dontyne Gears sought a different path, to create intelligent software that could generate the code and cutting strategy directly from the gear design software to manufacture precision gears on a standard, multi-purpose machining centre using readily available tooling. To make that vision a reality, it needed a platform capable of extraordinary accuracy and adaptability.

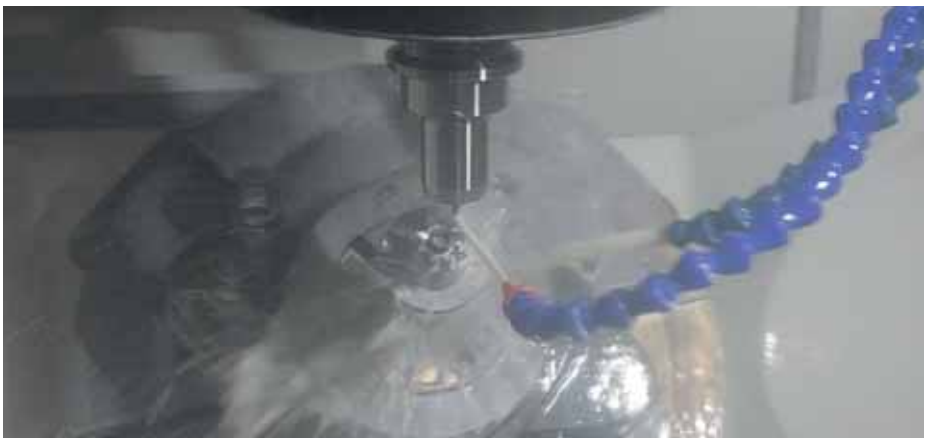
That platform was the Okuma GENOS M460V-5AX a compact, rigid and thermally stable 5-axis vertical machining centre whose versatility has underpinned Dontyne's journey from theory to proven process.

"The Okuma GENOS M460V-5AX gave Dontyne the flexibility and precision they needed to validate their groundbreaking software," says Andrew Skee, sales manager for the Northeast of England and Scotland at NCMT. "It's the perfect platform to push the boundaries of gear manufacturing, proving that you can achieve aerospace-level accuracy and repeatability on a machine that's adaptable enough for a wide range of applications."

From concept to capability

For Dr Michael Fish, director of Dontyne Systems, the investment in the GENOS M460V-5AX marked a decisive shift in how the company could demonstrate and refine its technology. The project was not without its challenges and through vigorous testing and reprogramming of the software by Dontyne the machine was able to aid in the development of a software module that enables gear projects for companies they would not have been able to pursue.

"Having the Okuma machine in-house allowed us to prove our software on real parts," says Dr Fish. "We can now take a gear pair design checked for correct contact and simulate the machining cycle for it given tool selection, machine type. Once confirmed it can generate the code in seconds even for complex tooth forms and export a file to cut the gear and measure it all within our own cell. We had a SPRINT system from Renishaw plc fitted to the GENOS to measure cylindrical gears on the machine. That capability has been



transformative. It has allowed us to show customers what's achievable and after much testing we are often able to produce ISO 4-5 results on the first attempt."

Dontyne's software can generate complex tooth geometries that improve performance and durability, including subtle surface optimisation called micro geometry measured in just a few microns. Working in conjunction with the machine's integrated probing and measurement systems, the team can verify precision directly on the machine a closed-loop process that drastically reduces setup time and eliminates the need for costly specialist tooling.

Intuitive platform

Kieran Brothwood, applications engineer at Dontyne Gears, has been instrumental in proving the process on the Okuma platform. He represents a new generation of engineers comfortable blending software, data and manufacturing.

He states: "Dontyne sponsored my studies to gain a BEng in mechanical manufacturing engineering. I have had previous experience operating manual machining equipment, however, this was a step up into CNC 5-axis machining for me. With some initial guidance for this type, it was relatively easy to make the step up. The control and setup were intuitive and once I understood how the software drives the process, it became a second nature. The results speak for themselves the gears come off the machine ready to run."

This integration between digital design and real-world manufacturing is key to Dontyne's ethos embracing the principles of Industry 4.0. The Gear Production Suite (GPS) from Dontyne systems allows the design of a virtual twin for a single gear or, preferably, a gear pair. It can then automatically generate G-Code of the exact tooth form and issue the same form by digital file to a range of inspection machines. The GENOS has had the SPRINT probe system from Renishaw plc fitted so that inspection can be carried out for cylindrical gears external and internal if geometry permits. The use of GPS can ensure that the part is machinable and can be suitably inspected before the design is finalised.

For NCMT, Dontyne Gears' success on the Okuma demonstrates the innovation unlocked when premier machine tools are paired with engineering expertise.

"Dontyne's work showcases exactly what's possible when you combine advanced software with a truly capable machine tool," says Andrew Skee. "The GENOS M460V-5AX is more than just a production centre it's a platform for innovation. By providing the stability, accuracy and flexibility required, it's helping to prove that highly technical gear geometries can be machined efficiently without relying on dedicated equipment."

Redefining the standard

A major part of this innovation lies in the remarkable versatility of the system. Dontyne's software has demonstrated the ability to cut a wide range of gear types on a 5-axis machining platform including spiral bevels, hypoids, helicals, internal gears and non-regulation special-profile forms. Traditionally, each of these forms would require a different dedicated machine often costing millions and capable of only a single tooth cutting process.

By enabling all of these geometries to be cut on one flexible machine, with one unified software environment, Dontyne has challenged long-standing assumptions in the gear industry and what once took months can now be done in days. Further, tooling for traditional production can be expensive costing thousands and add weeks to lead times for each design and these will be useless if produced incorrectly or due to design changes. Whereas the GENOS system can utilise readily available and low-cost End Mill tools.

Dr Fish explains: "We've shown that with the right software and the right machine, you can produce these parts with incredible precision. It's not just a technical achievement; it's a business one. Manufacturers now have a viable, flexible alternative to traditional production that will significantly reduce gear production cost and time. Stepping up to a Multus would enable a complete part to be produced in the soft condition on one machine"

Industry recognition

It is not just manufacturers who are standing up and taking notice to these technological advancements in gear production. The British Gear Association (BGA) has played a crucial role in accelerating awareness in the industry by funding a study of the method by Dontyne. Recognising the exceptional results that had been achieved by Dontyne and the potential of the current flexible machine tools for the industry, the BGA provided further support to investigate production of other gear geometries.

Throughout the development process, the BGA committee has served as both a challenger and a validator. There was an initial literature review and consultation with several industrial members that revealed existing solutions were incomplete and unreliable making the method difficult to use and adopt. This reinforced the necessity and significance of Dontyne's work.

Dr Fish says: "By challenging claims, validating results and supporting further adaptations, the BGA is helping us establish further credibility around this approach to gear manufacture by peer review of projects relating to 5-Axis CNC production. Their backing not only enabled technical progress but has also given industry recognition that our methods address long-standing limitations in conventional gear-making practice."

Machining possibility

By combining its unique software with Okuma's 5-axis technology and NCMT's support, Dontyne Gears has not only advanced its own capabilities but opened new doors for the entire industry. It's proof that the right partnership can turn vision into reality and that with the Okuma GENOS M460V-5AX, even the most complex engineering challenges like gear manufacturing can be met head-on.

Andrew Skee concludes: "This isn't just about a machine; it's about empowering innovation. The GENOS M460V-5AX gives companies like Dontyne Gears the confidence to prove what's possible."

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Subcontractor reinvests in automated 5-axis machining

Allan Carabine, owner and managing director of Milton Keynes subcontractor MK Precision, visited MACH 2026 with a clear intention to invest in additional CNC machinery and automation that would further improve his firm's manufacturing efficiency.

On the last day of the show, he duly placed an order for a Hurco VMX42SRTi 5-axis machining centre and a PC25 Kawasaki robot cell. It was the first time that the supplier had exhibited a machine tending cell based on a 6-axis industrial robot.

He is committed to being an early adopter of the latest technology. In fact, the Hurco ProCobot ProFeeder-X 10-drawer system currently loading his VMX30UHSi 5-axis machining centre was, in 2021, the first Hurco ProCobot to be installed in the UK.

Now an established product within the Hurco range, the ProCobot benefitted in the early days from Allan Carabine's feedback, which enabled Hurco engineers to make improvements to the design and software that today make it a robust, reliable automation solution.

As a supplier to industries as diverse as F1, motorsport, rail, defence, photography and cryogenics, Allan Carabine's philosophy is to invest continuously in the latest equipment to ensure a competitive edge. The purchase at MACH of his latest automated production cell allows MK Precision to take on larger, more complex prismatic work, while at the same time embracing the full benefits of lights-out machining.

He comments: "We are able to support our customers with the production of anything from one-off prototypes to large batch runs. The machinery that we buy has to offer us this versatility.

"The 600 mm diameter C-axis table on the VMX42SRTi, combined with the generous rotation range of the B-axis spindle head, allows us to manufacture large components without the need for multiple setups.

"Quite often, 5-axis jobs can run for four, five or more hours. The benefit of adding the PC25 robot automation is that I can always have the next job running on the machine quickly, even if the previous job finishes in the middle of the night or during a weekend."

Allan Carabine (left), owner and managing director of MK Precision, agreeing with Hurco area sales manager Jon Farthing at MACH 2026 the purchase of a VMX42SRTi 5-axis machining centre with Kawasaki robot automation.

Working closely with Hurco, Allan Carabine will first get used to the VMX42SRTi machine, which was delivered in July, before the automation is retrofitted later this year. As MK Precision already has experience of Hurco's job automation software and 5-axis machining, the learning process will undoubtedly be smooth.

A rotary union at the centre of the C-axis provides clamping for the zero-point location workholding. Small cleats supplied with the robot create a lifting point for each of the vices or pallets that can be held in any of the 36 possible locations on the shelf units.

Hurco's Job Manager software requires the user to simply select the workholding location and the next program, removing any requirement for specialist robot programming knowledge. As a result, training to use the automation takes as little as one day.

A PC25 Kawasaki 6-axis robot automation cell similar to the one that will be delivered to MK Precision later this year to automate the Hurco VMX42SRTi.

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Automated cell for producing medical components from tough materials

Subcontract machining firm Kirkstall Precision, Leeds, has enhanced its ability to serve the demanding medical sector with the acquisition of a pair of Japanese-built Brother Speedio M200Xd1-5AX 5-axis machining centres, served by a Tezmaksan robotic workpiece load, unload and storage system from Turkey. The cell was installed in two phases by Whitehouse Machine Tools, UK and Ireland sales agent for both of the overseas manufacturers.

For the past seven years, the subcontractor has focused almost exclusively on producing components for the medical industry, while also producing surgical instruments and implants for the veterinarian sector. The company is seeing a 15 to 20 percent year-on-year growth rate due to high demand for its services.

The first Speedio with a 16,000 rpm BBT30 BIG Plus spindle was installed in stand-alone mode in mid-2025 and was chosen for its accuracy, repeatability, versatility and compact footprint. Adam Thornton, Kirkstall's managing director says: "Accuracy in the medical sector is a given. Everything has to be completely correct, so we inspect and report all dimensional tolerances. Opting for a top quality machine tool like the Brother Speedio was a fairly obvious decision for us.

"We've used 40-taper 5-axis technology for some time, but the Brother Speedio is faster and takes up less space. It is ideal for the smaller, high-accuracy parts we produce and deliver typically a 20 percent cycle time reduction compared with our larger production centres."

Approved to ISO 13485, a globally recognised quality management standard for medical devices, Kirkstall produces mainly low-volume orthopaedic components from challenging materials, including stainless steel, hardened stainless, titanium and other tough alloys. The 30-taper Brother Speedio M200Xd1-5AX is ideal for processing these materials. Additionally, it is able to combine on a single platform 5-axis prismatic machining with turning using the rotary torque table, which was a further key attraction of the production platform.

A notable attribute of the machine is its energy efficiency. Compared to traditional 40-taper machining centres, it draws up to 80 percent less power, which translates into

electricity savings worth several thousands of pounds a year. Energy-saving measures include power regeneration during deceleration, high efficiency motors driving the spindle and axis motions, an optimised pump for coolant recirculation, LED lighting, low air consumption and automatic power-off when the machine is not being used.

Low power consumption is not just through energy-saving features, but is also inherent in the machine design. Fast cutting speeds and rapids, plus an ability to combine milling and turning operations in one setup, lead to reduced cycle times that in turn lower power consumption.

The first Brother Speedio proved so successful in terms of production output and accuracy, despite the tough materials being machined, that in April 2026 the subcontractor decided to install a second M200Xd1-5AX and automate both of them with a single workpiece handling robot. The Tezmaksan CubeBOX Blues DR is a compact automation system with a 6-axis industrial robot and an integrated storage unit consisting of a five-level drawer stacker.

The configuration in Leeds is engineered to handle round billets from 5 mm to 550 mm in diameter, having a maximum height of 135 mm and weighing up to 12 kg. The system facilitates 24-hour production including lights-out, with minimal operator attendance during daylight hours, boosting production output by up to 50 percent. Able to be installed in one day due to its standardised design, it offers a cost-effective alternative to bespoke automation and typically costs 20 percent less than machine-specific robot integrations.

A key advantage is the inclusion of the user-friendly RoboCAM smart automation software, which allows Kirkstall's operators to convert 2D CAD drawings into robot instructions, without requiring robot programming or CAM knowledge. Manual unloading of machined workpieces and loading of fresh material for processing is accomplished while the robot continues to tend the two Brother machining centres. The system reduces human error, improves manufacturing quality and is expected to deliver a rapid return on investment.

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Energy efficiency drives Scottish subcontractor's sliding-head lathe purchases

Citizen Machinery UK has supplied six of the sliding-head CNC lathes most recently installed at the Wishaw, near Glasgow, factory of turned parts subcontractor Swissmatic. Ian Corbally, son of the company's founder Jim, says it is principally because the Japanese-built, bar-fed, turn-milling centres have many outstanding attributes, in particular their reliable productivity even when left to run unattended and their low power consumption.

Trouble-free lights-out machining is largely down to Citizen Machinery's Low Frequency Vibration (LFV) chip-breaking functionality, which is especially effective when machining malleable materials. Built into the Mitsubishi control's operating system, LFV breaks what would otherwise be stringy swarf into short, manageable chips, without lengthening run times by inserting macros into cutting cycles. It prevents damage to the workpiece and/or tooling and avoids the need for an operator to be in attendance to clear accumulated swarf periodically from the working area. It is a decade since LFV was rolled out globally and the sliding-head turning community is now well versed in its merits.

Less familiar are Citizen Machinery's environmentally-friendly technologies, Eco II and EcoBalance. In a similar time period since the mid-2010s, one of the most significant changes in manufacturing has been the inexorable move towards reducing the power consumption of machine tools. The issue is now viewed just as seriously as a machine's productivity, since geopolitical tensions and shifting energy markets have caused the price of electricity to skyrocket, especially in the UK. Due to the negative impact this has on profit margins, what used to be a minor afterthought has morphed into a major consideration.

Ian Corbally is adamant that energy efficiency is "100 percent" at the forefront of Swissmatic's purchasing decisions and has been for many years. It is factored into the total cost of owning each item of capital plant and heavily influences purchasing decisions. It is noteworthy in this connection that in October 2023 the subcontractor installed 319 solar panels on the factory roof, which have reduced by about a quarter the power drawn from the grid, averaged over a 12-month period.

The latest Citizen Cincom sliding-head lathe to arrive on the shop floor in Wishaw was a Series 2 L32-XII B5 LFV with a B-axis swivelling tool carrier, the first of its type to be installed in the UK and one of only a few that currently sport the newly-upgraded 4-axis LFV capability. Operating in X and Z at both spindles simultaneously, it removes the need to compromise by switching the function in and out by G-code at one spindle only.

Replacing a less advanced, 32 mm diameter bar capacity sliding-head lathe, the 9-axis CNC machine features +90/-45 degree B-axis rotation of a driven tool post positioned at the far end of the front gang tooling, enabling full 5-axis simultaneous machining. For maximum versatility, the rotary tools can work at either C-axis spindle to produce angled features. The lathe is also capable of superimposed machining, which uses a master-slave relationship between linear feeds of the sub spindle and the tool carriers to lower cycle times through the ability to have more than one tool in cut at the same time.

Before this machine was installed, the previous two Cincoms purchased by Swissmatic were M-series lathes having gang tool posts and a rotary turret with 10 driven tool positions. The latter is not a feature of any other make of sliding-head lathe in the Wishaw factory, which means that Citizen is the preferred supplier of such machines for more complex production applications. An M32-VIII LFV was delivered in mid-2022 and a smaller M16-VIII LFV arrived at the end of 2023.

Two years prior, a pair of 12 mm bar capacity Cincom L12-VII LFVs was acquired to fulfil a contract for the production of medical components from plastic bar, a material that accounts for about a quarter of Swissmatic's annual throughput. The lathes were the first on-site with LFV and proved highly effective for producing parts 24/7 unattended, without the formation of birds-nests of plastic swarf risking having to stop production. Among the other materials processed in the Wishaw factory that routinely benefit from LFV chip-breaking are 304 stainless steel, aluminium and a small amount of copper.

Summing up the benefits of using Cincom

lathes, Ian Corbally comments: "We have been using Citizen's sliding-head turning machines since 1981, one year after my father started the business. They began replacing cam-type lathes and rotary transfer machines, which were finally phased out here 17 years ago.

"Jim had used this brand of lathe in a previous job and we have installed 22 of them over the years, although with our policy of continuous plant renewal, there are currently six on the shop floor, all but one with LFV.

"We manufacture components ranging from one-off prototypes to production runs of more than two million and the versatility of the Cincoms suits this activity perfectly."

Ian Corbally continues: "The lathes operate minimally attended or lights-out, 24 hours a day, seven days a week, yet scrap rate is vanishingly small at less than a quarter of one percent, despite having to hold tolerances down to four microns total.

"The low power consumption is also important for us to keep electricity bills down and Citizen has taken this to the next level with the latest eco features built into its lathes."

About the energy-saving characteristics of modern Citizen lathes

Eco II is Citizen Machinery's proprietary suite of intelligent energy-saving technologies integrated into its Cincom lathes, as well as its Miyano fixed-head turning centres. Acting as an environmental management dashboard and utility regulator integrated into the Mitsubishi control, the embedded software automatically reduces the consumption of electrical power and compressed air when the machine is idling, rather than allowing the servo motors to remain continuously powered up.

The software monitors the lathe's operating status in real time. If a standby state with no programmed movement is detected, power to the servos is cut automatically and auxiliary systems are put to sleep, with both waking up instantly when a cycle resumes. In respect of compressed air consumption, one of the most expensive utilities on a factory floor, Eco II tackles waste in two ways.

First, as a continuous blast of full-pressure air is not always needed, the machine uses a smart pulsed air delivery system that works in targeted intervals, maintaining full effectiveness for part ejection, collet or tool taper cleaning, parts catching and other functions, while lowering compressed air consumption by up to 60 percent.

Second, the machine's internal air purge system is automatically shut down after a preset time whenever the lathe falls into standby mode. Additionally, the base level pneumatic demand has been reduced from 0.5 MPa to 0.4 MPa, yielding a reduction in general factory air consumption of up to 20 percent, without sacrificing actuation power.

An operator is able to access a live touchscreen graphical interface with real-time displays of active electrical power consumption versus peak maximum thresholds, cumulative carbon dioxide emission, historical utilisation graphs tracking the ratio of cutting time compared with setup times and alarm stops and how much kinetic energy is captured and regenerated into electricity as the spindles decelerate and the axes undergo braking.

Eco Balance is the lathe manufacturer's branding and certification standard for its green initiatives. It encompasses several pillars, not only the above-mentioned energy reduction measures, as well as the elimination of power-hungry hydraulics, but also further electricity-saving strategies like shutting down internal cabinet lighting, screen backlights and auxiliary fans alongside servo motor sleep cycles when the machine stops moving.

For a Citizen lathe to be designated an official Eco Balance Machine, it must prove it balances high productivity with a reduced environmental footprint, verified by measurement of reductions in electrical power and compressed air usage compared to previous machine generations. This overarching philosophy forms the basis for Environmental, Social and Governance (ESG) auditing, an anti-greenwashing process that verifies a machine manufacturer's claims of environmental protection.

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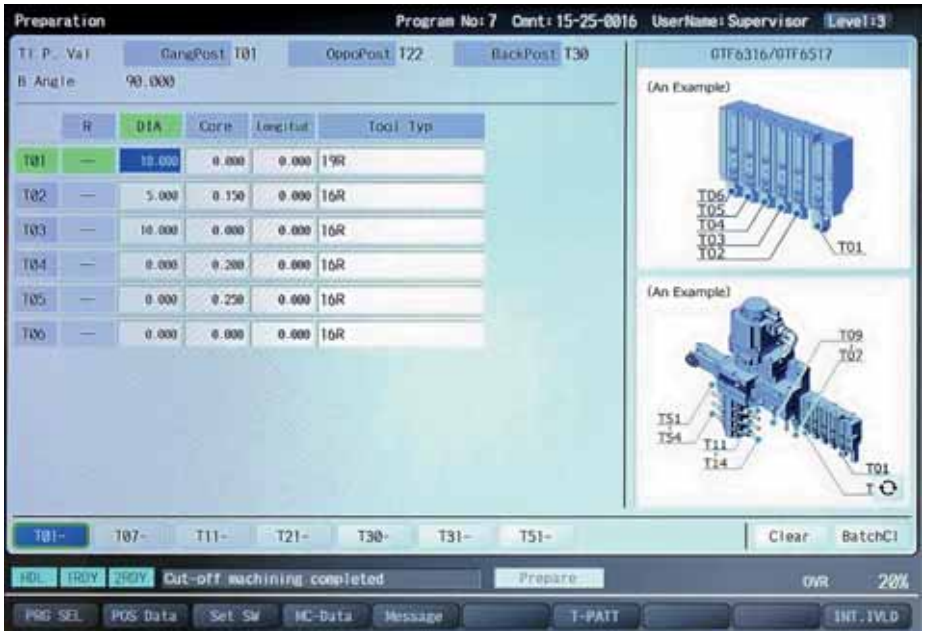

A change of machine style brings benefits to Combined Engineering Services with investment in XYZ TMC

Since the formation of Brecon Designs in 2007 followed by a merger with another local engineering company, Infinite Engineering Design, in 2018 to form Combined Engineering Services (CES), Steve Willams, managing director and the team have seen continued growth.

From humble beginnings with a "machine shop" housing just a turret mill, manual lathe and wire eroder, they now have a substantial machining capability. This includes several CNC milling and turning machines along with a couple of wire eroders. Their equipment allows them to support the business in the manufacture of tooling, jigs and fixtures, along with the design and build of special purpose machines.

CES made the first step into CNC milling with the investment in an XYZ VM 4000 bed mill and Steve Willams sees that it was the ProtoTRAK control that made the company gravitate to XYZ. He comments: "As with many companies, our first step into CNC was made with great trepidation but we gelled with the control and, since that first machine purchase, the company now have 7 more XYZ bed mills with different capacities and generations of controls, along with a flatbed lathe that also has the ProtoTRAK control."

This progressive and forward-thinking business located just off the Heads of the Valleys in South Wales has now made further investment to enhance their capability and help to improve productivity. Chris Bow, the design director at CES explains: "The bed mills have served us well and continue to do so, but it became apparent that we needed to do something different on our next machine tool purchase to remain competitive. When we are not successful in winning work following a quote, we always look at why didn't we win that job. These investigations led us to look at our machining capability. We arranged a visit to the XYZ head office in Devon to look at several options available to us. On our return we concluded, following the advice provided by the XYZ sales team, that the 750 TMC with its enclosed layout would be a good fit for our business. This machine would allow us to improve material removal rates and reduce cycle times due to the machines 11kW (15hp) BT40 spindle.

Flexability is the key for the CES 750 TMC as it can be used from CADCAM as well as programmed on the machine.

"Added to this the travels of 743 mm in X and 425 mm in Y mated with the 20 station BT40 tool changing carousel would open up the opportunity to load a number of parts on the bed at the same time and help us to push towards lights out machining, which in turn would help us achieve the goal of lowering our manufacturing cost per part."

Chris Bow continues with the justification of the purchase by adding: "Another improvement for the business that we could see was better utilisation of the staff due to less operator input during part manufacture. Being able to walk away from the machine for the whole of the process brings its own increase in efficiency creating more capacity within the workshop and helping to reduce the takt time when we build one of our special purpose machines."

Now the machine is installed and running, CES are benefitting from the flexibility that the TMC range from XYZ offers. Having taken advantage of the optional front mounted electronic handwheels, all the machine programmers and operators at CES can jump on the machine and use the machine in a manual capacity for simple machining operations if required.

The transition to the TMC from the existing bed mill products was very easy due to the resident conversational programming in the control and having made the investment in CADCAM, CES are now in a position to use all of today's latest technology both on the ProtoTRAK 15" touchscreen RMX control or through CADCAM to manufacture parts quickly and cost effectively.

Jim Reed at CES prepares the next job for manufacture.

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Getting its turning capabilities back on track

17D, a leading precision subcontractor specialising in the machining of rolling stock replacement and spare parts for the rail industry, has significantly increased its in-house turning capabilities with the acquisition of a new, compact DN Solutions' Lynx 2600M lathe from Mills CNC.

The new investment has helped take pressure off 17D's two older CNC lathes that, although still performing satisfactorily, could not cope with the increase in demand, from a growing number of Main Line, Heritage and Miniature and Narrow Gauge rail customers, for small, high-precision and quick turnaround machined rolling stock replacement and spare parts.

Mills CNC, the exclusive distributor of DN Solutions and Zayer machine tools in the UK and Ireland, has recently supplied 17D Ltd., a leading, family-owned precision subcontractor specialising in the machining and supply of high-quality replacement and spare parts to the rail industry, with a new 10" chuck Lynx lathe.

The machine, a 3-axis Lynx 2600M, equipped with a C-axis and driven tooling capabilities, was installed at the company's 2,500 sq. ft. machine shop facility in Matlock, Derbyshire, in February 2026 and joins two DN Solutions DNM 4500 vertical machining centres, previously acquired by 17D from Mills CNC in 2020 and 2024, respectively, as well as two used Doosan lathes and a range of manual machines that were acquired by the company a few years earlier.

Being no stranger to DN Solutions, previously Doosan, machine tool technologies and having first-hand experience of Mills CNC's pre- and after-sales services, 17D made Mills its first 'port of call'.

However, prior to approaching Mills, 17D did its homework, researched the market and created an extensive 'new machine checklist' that encapsulated the company's new lathe requirements.

Owing to floorspace constraints and the size of components being machined, 17D had initially narrowed down its choice to a compact FANUC-controlled 6" or 8" chuck (DN Solutions) Lynx 2100M lathe from Mills. Lynx lathes are popular and proven and have an excellent reputation in the market for fast and efficient small part processing.

The Lynx 2600M is no exception and is equipped with a powerful, high-torque spindle, 18.5kW/3500 rpm/403N-m, roller-type LM guideways, a 12/24-position servo-driven turret, a fully programmable tailstock and driven tooling capabilities.

Although having similar technical specifications to the Lynx 2100M, the Lynx 2600M is built for heavy-duty turning operations and has a 460 mm maximum turning diameter and 658 mm maximum turning length and its BMT 55P turret delivers improved milling, tapping and drilling capabilities.

The Lynx 2600M delivered to 17D was also supplied with a MH5500 swarf conveyor system, an auto tool setter and a FilterMist extraction unit. Since being installed, the new Lynx 2600M has been put through its paces machining a range of wear and replacement parts for its Main Line, Heritage and Miniature rail customers. These parts are typically machined in low volumes and small batches and are made from a diverse range of materials.

Specific replacement parts, to date, machined on 17D's Lynx 2600M include shafts, housings, cylinders, couplings, connectors, pins and bushings etc. These parts, often essential parts that go into larger sub and final wheel, axle, bogie, chassis, brake, gear and suspension system assemblies, are machined to tight tied-up tolerances and exacting surface finishes.

The versatility of the Lynx 2600M was also demonstrated with a recent job where it was used to machine to completion, a small batch of components that had originally been ear-marked to be processed on one of the company's DN Solutions' machining centres.

According to the Office of Road and Rail (ORR), as of 31st March 2025, there were over 15,000 passenger railway vehicles registered in operation in Great Britain. This number does not include operational freight rolling stock which is estimated to be much higher.

17D, with its advanced, quick turnaround machining capabilities combined with its knowledge and experience of the rail industry, plus a range of additional and integrated specialisms and skills is ideally placed to grow its market share and cement its position as a leading supplier of high-quality, quick turnaround machined replacement and spare rolling stock parts to the rail industry.

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RAM Engineering & Tooling appointed UK sales and support partner for the Quaser Group

RAM Engineering & Tooling Ltd is pleased to announce its appointment as the UK sales and support partner for the **Quaser Group** across England, Scotland and Wales. The partnership brings one of the world's most respected manufacturers of precision machining centres to a company with a proven reputation for technical excellence, application-led engineering and customer care.

For more than 30 years, the Quaser Group has earned an international reputation for designing and manufacturing premium machining centres renowned for precision, reliability and exceptional build quality. Today, Quaser machines are trusted by manufacturers ranging from innovative SMEs to global blue-chip organisations across aerospace, defence, medical, automotive, energy and precision engineering.

The Quaser portfolio continues to expand, offering everything from highly capable 3-axis vertical machining centres through to advanced 5-axis machines, horizontal machining centres and fully automated production systems.

Customers can specify **FANUC, Siemens** or **HEIDENHAIN** control systems, enabling seamless integration into existing manufacturing environments.

Customers throughout England, Scotland and Wales will benefit from UK and European machine stock, reference installations, genuine OEM spare parts, automation expertise and RAM's network of **Quaser-trained engineers**. Supported by a decentralised technical team located across the UK, RAM delivers rapid response times and local support. With its headquarters in Scotland and a new southern England facility due to be announced shortly, the company continues to strengthen its nationwide capability with full OEM backing across sales, applications, service, spare parts and automation.

Supporting the partnership, RAM has recently strengthened its team with the addition of experienced personnel with extensive Quaser knowledge, further enhancing its engineering and customer support capabilities. Additional appointments are expected in the coming months as the company continues to invest in supporting its growing UK customer base.

The partnership builds on RAM Engineering's proven 16-year track record of supplying and

supporting leading CNC machine tool brands throughout the UK. Relationship building and customer care remain at the heart of the business, underpinned by a genuine understanding of manufacturing applications and a commitment to delivering the right solution for every customer.

From initial consultation and process development through to installation, training and lifetime aftersales support, RAM combines the Quaser Group's world-class technology with engineering expertise to provide complete manufacturing solutions and long-term partnerships for manufacturers across England, Scotland and Wales.

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Fresh chapter for Kyocera SGS as new European HQ opens

Investment in advanced manufacturing, innovation and customer support took centre stage as Kyocera SGS Precision Tools Europe officially opened its European headquarters in Fradley, Staffordshire. Engineering Subcontractor dispatched long-standing editorial collaborator Steed Webzell to witness the occasion.

Official openings are often rich in symbolism, but the ribbon-cutting ceremony at the new European HQ of Kyocera SGS represented far more than relocating to a different building. The move brings the company together with fellow group member Kyocera Unimerco on a single 6.4-acre purpose-built campus, creating Kyocera's largest carbide tooling manufacturing site in Europe. While Kyocera SGS focuses primarily on solid round carbide cutting tools such as end mills, drills and routers, the core business of Kyocera Unimerco is the design and manufacture of bespoke tooling solutions manufactured in line with specific application requirements.

Customers, suppliers, technology partners, local government representatives and members of the wider manufacturing community gathered to celebrate the milestone, which marked the culmination of a major investment by Kyocera Corporation as it continues its ambition to become the world's leading carbide tooling company.

Ribbon cutting with (L-R) Hugh Welch, Dave Robertson, Henrik Schurmann, Tomoaki Hirano and European Marketing Manager Zoe Howes.

Landmark occasion

Opening the event was Hugh Welch, managing director of Kyocera SGS Precision Tools Europe, who said: "This is an important milestone in our company's history. Today is not simply about opening a new HQ for Kyocera SGS Precision Tools Europe, it signifies the completion of a major investment by Kyocera in our future.

Kyocera-SGS plaque unveiling, 29th June 2026.

Bringing together Kyocera SGS and Kyocera Unimerco under one roof strengthens our commitment to manufacturing, innovation and customer service across the UK and mainland Europe."

He also recognised the scale of the project, thanking colleagues from across Kyocera SGS, Kyocera Unimerco and the wider Kyocera network for delivering what he described as: "Many months of planning, hard work and commitment". Relocating a European HQ, he noted, "Is no mean feat", adding that the new facility would create opportunities for customers, employees and the broader community for years to come.

The strategic benefits extend well beyond additional manufacturing space. The Fradley site offers significantly increased production capacity, expanded R&D facilities for product trials and customer testing, improved logistics through its central UK location and the ability to combine new tool manufacture with Kyocera Unimerco's established 'Re-New' regrinding and refurbishment services. Although the two businesses continue to operate independently,

the shared infrastructure creates opportunities for closer technical collaboration while strengthening European supply chains.

Guests of honour

Among the guests was Dave Robertson, MP for Lichfield, Burntwood and the Villages, who described the investment as a strong vote of confidence in both the region and UK manufacturing: “What we're seeing here is really high-quality, high-skilled manufacturing jobs coming back to where they’ve historically been. This advanced production facility here in Fradley is a statement of confidence by Kyocera in our region and community.”

He also highlighted Staffordshire's long manufacturing heritage and skilled workforce, as well as its strong transport links, adding that the investment would create new opportunities for local suppliers and apprentices while reinforcing the county's reputation as a centre for advanced manufacturing.

Charlotte Cain, manager of the Staffordshire Investment Agency at Staffordshire County Council, echoed that message, describing Staffordshire as "brimming with opportunity" and home to both global manufacturers and innovative SMEs. She also outlined the agency's commitment to supporting businesses through recruitment, skills development and supply chain initiatives designed to help manufacturers grow.

Words from the president

Perhaps the strongest sense of continuity came from Tomoaki Hirano, president of Kyocera SGS, whose own career has mirrored the evolution of the Kyocera Group's European operations. He recalled visiting the Fradley site while working for a different division of Kyocera in Germany back in 2011. He admitted he could never have imagined returning to the same site to celebrate the opening of the new European HQ for Kyocera SGS, not least as its president.

“Our journey here today has been one of innovation and shared vision,” he said. “This synergy significantly strengthens our collective presence in the UK and mainland Europe.”

Tomoaki Hirano also acknowledged the personal commitment made by employees during the relocation, thanking team members for their "unwavering commitment to our future" and recognising that a transition of this scale inevitably requires overcoming significant challenges.

Henrik Schurmann, president of Kyocera Unimerco, looked firmly towards the future, again setting out the benefits of bringing two established tooling manufacturers together in a single facility: “We’re two strong tooling companies, bolstering our collaboration and support while learning from each other, inspiring each other and helping each other service customers in the UK and mainland Europe. We are very pleased to welcome Kyocera SGS into the plant.”

View over the shop floor at Kyocera SGS, Fradley.

The speeches concluded with the official ribbon cutting, performed by Dave Robertson, Henrik Schurmann and Tomoaki Hirano.

Tour de force

Event guests were invited to take guided tours of the new facility by Kamil Glaza, manufacturing manager at Kyocera SGS Precision Tools Europe. Participants gained first-hand insight into the expanded manufacturing, logistics and technical capabilities that will support customers across industries that include aerospace, medical, automotive and precision engineering. From a mezzanine viewing area overlooking the production floor, it was easy to appreciate both the scale of the investment and the breadth of manufacturing capability housed on site.

Among the latest additions is a Walter Helitronic Vision 400L CNC tool and cutter grinding machine, equipped with a direct-driven, liquid-cooled motor spindle and torque-driven rotary axis for the volume production of solid-carbide cutting tools. The factory also features Vollmer QWD CNC wire erosion machines and an impressive Grob G350 5-axis CNC machining centre, complementing other advanced manufacturing technologies installed across the facility.

As guests departed, the message was clear. While the event celebrated the official opening of an impressive new HQ for Kyocera SGS Precision Tools Europe, it also marked the beginning of a new chapter for the company’s European tooling operations. Working with Kyocera Unimerco means the company has created a platform for continued growth, closer technical collaboration and enhanced customer support. A platform designed to serve manufacturers across the UK and the rest of Europe for many years to come.

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Focusing on cost-effective cutting tools

In the modern metalworking industry, tungsten carbide has become the most commonly used cutting material. With significantly greater hardness, abrasion resistance and thermal strength compared to traditional High-Speed Steel (HSS), tungsten carbide allows for substantially higher cutting speeds, resulting in increased Metal Removal Rates (MRR) and enhanced productivity.

Advances in coating technology, in which a thin layer of coating material with a microhardness exceeding that of tungsten carbide is applied, have transformed the natural relationship between hardness and toughness in cutting materials. When coated, tungsten carbide demonstrates higher wear resistance than uncoated carbide of the same toughness. This improvement has further contributed to productivity gains. Today, the majority of carbide tools, whether solid or featuring indexable inserts, use coated tungsten carbide as the primary material for cutting edges.

However, in recent years, the metalworking industry has faced a new problem: the significantly rising prices of tungsten-containing materials. There are a variety of reasons, often interrelated, for this increase, most of which are related to economic and political factors.

Understandably, this price increase impacts tooling investment and results in a higher proportion of cutting tool outlays within overall machining expenditures. Naturally, under these conditions, manufacturers are seeking ways to reduce tooling-related spending, more frequently considering alternative chip approaches. At the same time, it is important to bear in mind that cutting tools, despite their relatively small share in overall machining costs, can be a powerful means to boost productivity and thus lower the actual cost of production. Hence, the new challenge for cutting tool manufacturers is to provide cost-effective solutions that address the difficulties caused by the sharp rise in tungsten prices in the global market. Ultimately, cost-effectiveness and achieving optimal value are key.

In such circumstances, the metalworking industry places greater emphasis on the affordability of cutting tools and seeks ways to enhance their value for money.

So, what do tool manufacturers have in their arsenal to meet this challenge? There are several possible responses.

One approach is the expanded use of alternative hard cutting materials such as cermets and ceramics. These materials undoubtedly offer significant advantages over tungsten carbide, featuring higher hardness and greater heat resistance. However, their application is limited by several factors: they are more brittle, less tough, and more sensitive to unstable machining conditions. Extra-hard materials like Cubic Boron Nitride (CBN) and Polycrystalline Diamond (PCD) provide excellent wear resistance, but they are very expensive. Moreover, compared to tungsten carbide, their application range is not as broad: CBN is mainly used for machining hard steels, cast iron and High-Temperature Superalloys (HTSA), while PCD is effective primarily for cutting non-ferrous materials such as aluminum, copper alloys and composites.

A second strategy is the development of wear-resistant protective coatings. Innovations in this field have enabled newly engineered coated carbide grades to achieve increased tool life. In addition, the most advanced coatings can maintain the same tool life even in grades with reduced tungsten carbide content. Nevertheless, applying the latest coating technologies requires specialised equipment and processes, leading to additional production costs, which can, in turn, affect the final price of the tools.

Another solution to address the challenge involves optimising tool design. For example, adopting assembled tool concepts with replaceable tungsten carbide cutting parts allows for more rational use of carbide material and increases both flexibility and efficiency. Likewise, inserts featuring shapes that maximise the number of indexable cutting edges help extend tool life and material usage. In practice, inserts are often used at much shallower cutting depths than their maximum capacity allows. In addition, modern workpiece fabrication methods, such as precision casting, forging, and injection moulding, make it possible to produce workpieces that that closely match final part profile. This reduces the amount of material that needs to be removed during machining. As a result, tools fitted with smaller inserts are increasingly in demand.

ISCAR's innovations

In this context, the program offered by ISCAR, one of the leading tool manufacturers, speaks for itself and is of particular interest.

ISCAR's MULTI-MASTER is a family of assembled tools with exchangeable carbide cutting heads (**Fig. 1**) that has been on the market since the beginning of the century. It provides an excellent example of cost-effectiveness and versatility. The family concept, where a single tool body, referred to as a shank in MULTI-MASTER terminology, can accommodate a variety of heads and each head is compatible with multiple shanks, not only conserves tungsten carbide, but also allows for optimised tool configurations tailored to specific machining operations. This system simplifies customisation, reduces the need for special tools and minimises tool stock requirements.

In holemaking, the SUMOCHAM drill family and its derivatives employ a similar design principle: an assembled tool with a replaceable tungsten carbide cutting head. A head can be mounted on shanks with different overhangs, ensuring most suitable tool choice according to the required drilling depth. The use of replaceable heads reduces the demand for a large drill inventory. Further development of the SUMOCHAM family has led to the application of this principle to counterboring as well.

Both product ranges, MULTI-MASTER and SUMOCHAM, feature extremely rigid head clamping that brings the assembly's dynamic behaviour very close to, or even the same as, that of a solid tool. Moreover, the products address a common challenge in machining operations: the time-consuming process of changing worn tools. In these tool families, only the head needs replacement, which can be carried out swiftly and without extra setup procedures.

By applying the indexable design concept to miniature tools, as well as to tools intended for machining at shallow cutting depths, ISCAR has developed a wide variety of products, particularly in its milling line. The company's portfolio includes families such as MICRO-3-FEED (**Fig. 2**) for efficient High-Feed Milling (HFM) and recent additions to the popular HELITANG and HELI-3-MILL lines, featuring portable cutters with mini inserts for square shoulder milling, among other solutions. Notably, many of these

small-in-diameter cutters are designed as endmill heads, allowing them to be mounted on MULTI-MASTER shanks. This significantly expands the application range of both product types.

In the turning line, the LOGIQ-4-TURN family has been expanded with tools featuring a smaller-sized (06) insert (**Fig. 3**). This double-sided insert not only makes efficient use of tungsten carbide by providing four indexable cutting edges but is also suitable for clamping with either a screw or a lever, depending on the tool design. Such a smart, cost-saving solution is especially advantageous for turning operations producing miniature parts on Swiss-type machines and compact lathes.

For ISO turning applications that require cuts significantly shallower than the maximum cutting depth of standardised ISO inserts, ISCAR has developed the FLASH-TURN family of tools with smaller-sized inserts. This primary option for reducing tooling costs in ISO turning is engineered to maximise edge utilisation and lower the cost per part while maintaining performance.

Fig.1

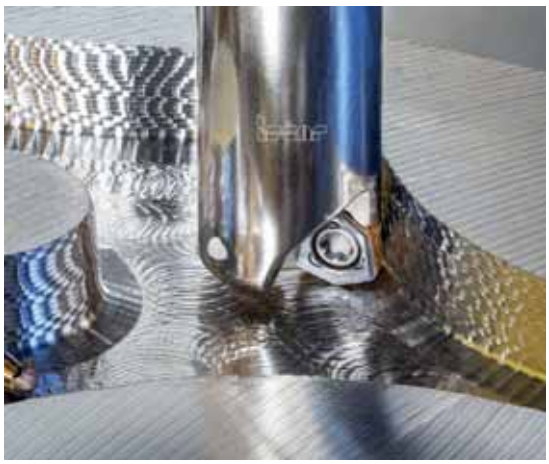

Fig.2

Fig.3

Fig.4

In the parting and grooving segment, DO-GRIP products with thin, reversible inserts (**Fig. 4**) show considerable promise. The narrow inserts offer two indexable cutting edges and enable precise, small-width cuts ranging from 0.8 to 1.2 mm (0.031 to 0.047"). These material-saving features ensure economical use of both tungsten carbide and the workpiece material, specifically when parting/grooving tubes or thin-walled components.

The multi-edged insert design offers significant cost-effectiveness. As a well-established "classic" strategy for maximising the utilisation of cutting material, tool design engineers adopt this approach whenever possible. Among ISCAR's latest innovations, a recent addition to the PENTACUT family, a range of parting and grooving tools with star-shaped inserts, is particularly noteworthy. The newcomer features mini inserts with a 17 mm (0.67") inscribed circle diameter and a cutting width ranging from 1.5 to 2.5 mm (.059 to .098").

Multifunctional tooling enables different machining operations to be performed with a single tool. Such "all-in-one" solutions are a substantial means of reducing metal-removal costs and increasing profitability. QUICK-D-MILL indexable tools, which combine milling and drilling capabilities, perfectly demonstrate the effectiveness of multifunctional design. Double-toothed, right-hand cutters equipped with two rectangular-shaped indexable carbide inserts form the core of the QUICK-D-MILL concept (**Fig. 5**).

Fig.5

Each insert features four cutting edges and can be used for both central and peripheral cutting, thereby optimising utilisation, reducing the frequency of replacements and lowering costs.

Rising tungsten prices are challenging the metalworking industry, pushing manufacturers to find more cost-effective cutting too solutions while maintaining productivity. Innovative approaches, such as those offered by ISCAR, are increasingly focused on maximising output and reducing tooling expenses in response to these demands.

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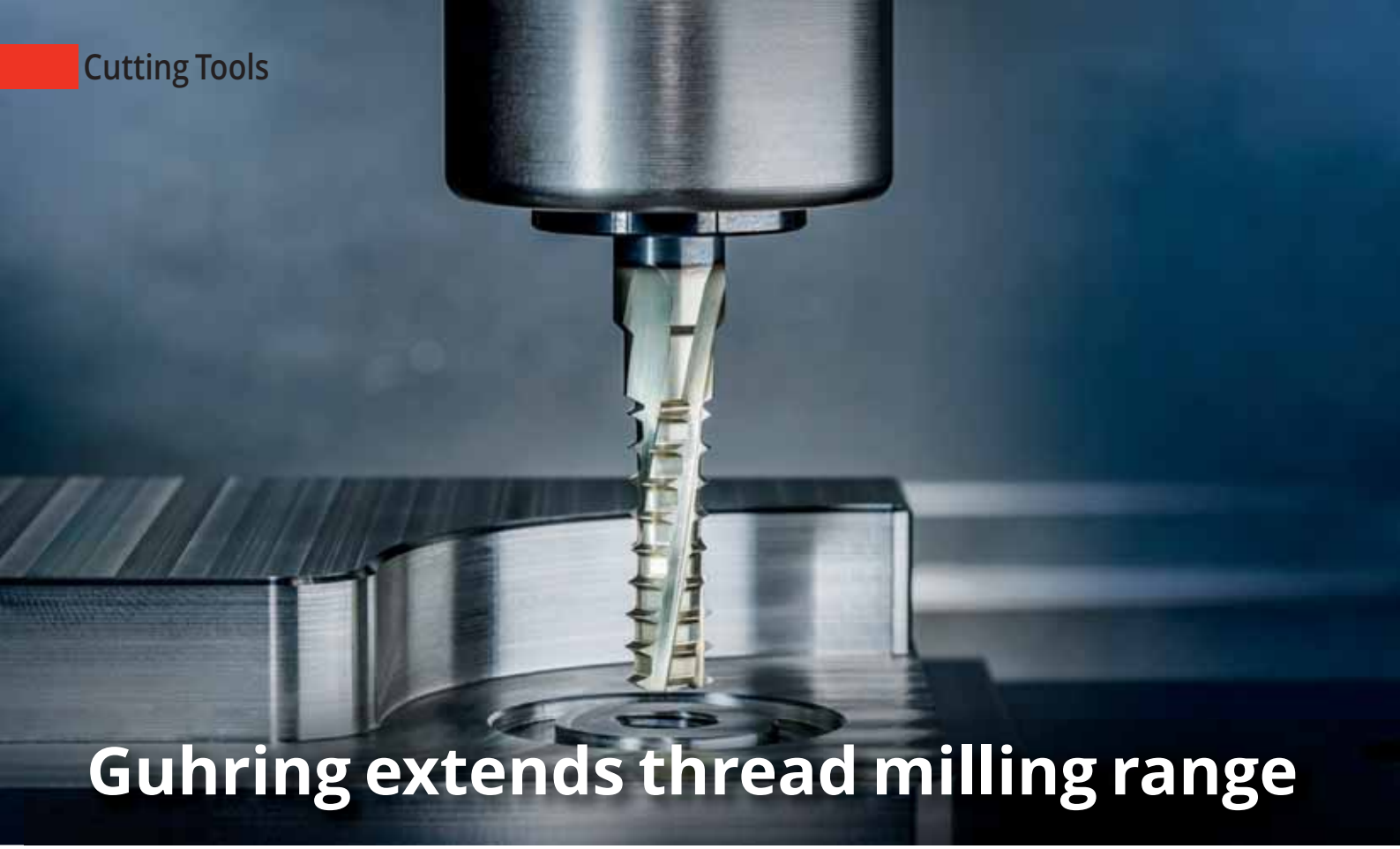

Guhring extends thread milling range

Guhring has expanded its thread milling line-up with the arrival of the exciting new SC-TM-Z SP high-performance full-profile thread milling cutter. Taking productivity to the next level, this threadmill creates a complete thread in just two revolutions to deliver significantly shorter cycle times.

The launch builds on one of the industry's broadest thread-milling ranges. Introducing the portfolio, Guhring UK's national sales manager, Chris Bush, says: "It's an introduction to the whole range, from the single-pitch thread mill and micro thread mill all the way through to a drill, chamfer and thread mill all in one tool and everything in between. It's an incredibly comprehensive and diverse range that caters for virtually all the threading demands of a modern machine shop."

The SC-TM-Z SP now arrives as the latest addition to that diverse line-up. It is available from M3 to M20 in metric and metric fine, with the range being extended to mirror Guhring's wider thread milling offering.

Part of Guhring's SC-Line, the full-profile threadmill sets a new performance benchmark for the range. At the heart of the SC-TM-Z SP is a staggered-tooth, staggered-pitch design. Explaining the benefit, Chris Bush continues: "You've got less surface contact, less radial force and less push-off. Because there's less radial load and less push-off, you don't need to do a spring pass. This significantly reduces vibration, enabling manufacturers to run at higher RPM and higher feed."

This is enabled by a new, patent-pending flute geometry that incorporates an uneven division and spiralling that suppress vibration. Irregular tooth rows reduce radial forces and improve dimensional accuracy and process reliability, together delivering a remarkably smooth cutting action with low cutting forces that enhance thread quality. As a typical example of productivity gains, when milling an M10 thread to 2.5XD in a ST52 carbon steel bearing block, the SC-TM-Z SP ran at 120 m/min and 0.075 mm/z, achieving a 55 percent reduction in machining time per thread compared with a competitor tool. Furthermore, the innovative geometry extended tool life by 17 percent, from 700 to 820 components.

That durability stems from an optimal combination of Guhring's high-quality carbide grade, the new Sirius coating and the tool geometry. Discussing this, Chris Bush adds: "The carbide is the usual high-quality Guhring carbide and the coating is the new Sirius coating, so it allows multifunction use across all materials. It also ensures low wear, so you get higher tool life. You don't have to worry about cutter compensation or spring passes, so you can keep running a secure process for longer." Suitable for a wide range of materials, including steels, stainless steels, cast irons, non-ferrous materials and heat-resistant alloys, the SC-TM-Z SP machines true-to-gauge for longer, delaying tool radius correction and maintaining process reliability to a thread depth of up to 2.5XD.

To simplify adoption, Guhring offers free online programming via its CNC Guhro ThreadMill generator. Chris Bush highlights its ease of use: "Anybody can sign up and get access. Whatever operating system you use, ISO or otherwise, it will generate the program for it and you can just copy and paste it into your program." The Guhro ThreadMill generator supports Siemens, HEIDENHAIN, FANUC, Mazatrol and Hurco controls.

For shops moving from tapping to thread milling, Guhring also highlights the process's inherent security. Chris Bush concludes: "If you break a thread mill, you just replace it and re-cut the thread; you don't have to worry about sparking out a tap. If you do need technical support, we've got 20 engineers on the road across the UK and Ireland and they would be happy to come in and run it in your machine shop."

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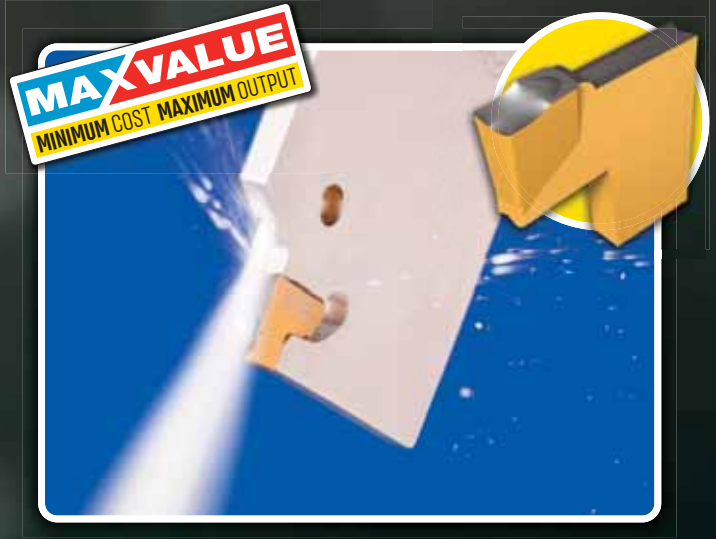

TANG-GRIP
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Thousands of holes, zero doubt

Manufacturers are focusing more than ever on stabilising processes, strengthening operational resilience and achieving consistent output in high volume production. Against this backdrop, Mikael Carlsson, product application specialist at metal cutting and manufacturing solutions expert Sandvik Coromant, demonstrates how a holistic tooling strategy made a crucial difference for direct-drive system manufacturer, Hägglunds.

Efficient drilling doesn't happen by chance: it comes from skillful engineering, strong collaboration and smart tooling choices. That was the challenge faced by Hägglunds, a Bosch Rexroth brand and manufacturer of direct drive systems, when machining cam rings from bearing steel: a notoriously difficult material for holemaking. The existing drill was neither durable nor reliable enough to deliver predictable hole quality, meaning operators needed to watch machines constantly, limiting uptime and slowing production.

"Our old tool just wasn't durable or reliable enough. We didn't trust it to deliver and couldn't leave the machine unattended like we wanted to," says Andreas Branthsson, production engineering manager at Hägglunds.

Turning interruptions into uptime

Sandvik Coromant and Hägglunds have a long standing partnership built on open dialogue and continuous improvement. The Sandvik Coromant approach goes far beyond simply supplying tools: it encompasses knowledge transfer, operator support and identifying optimisation opportunities as part of what the company calls manufacturing wellness: a mindset focused on skills, technology and process health across the operation.

To stabilise the drilling process and bring control from the first hole to the last, including enabling lights out machining without risking tool failure or part damage, engineers from Sandvik Coromant and Hägglunds pinpointed the need for a more wear resistant, repeatable solution.

The answer was the CoroDrill® DE10, Sandvik Coromant's second generation exchangeable tip drill launched in March 2025. Unlike the previous tool, the CoroDrill DE10's patented pre tension clamping interface, high clamping force and excellent centring deliver robust stability even when machining gets tough. This design enables straight holes with tight tolerances and supports a higher number of tips per drill body.

Impact on productivity

What sets the CoroDrill DE10 apart is its repeatable hole quality. During testing, thousands of holes were drilled with consistent results hole after hole. "What makes this drill stand out is the repeatable hole quality," explains Mikael Carlsson. "We drilled thousands of holes in testing and the consistency was there, hole after hole."

Its performance enables trouble free drilling at high feeds and speeds and unmatched tool life when used with the recommended cutting data. Additionally, the tool's versatile M5 tip geometry offers plug and play efficiency, is compatible with a wide range of materials and applications and requires no pilot drill or spare parts for tip changes.

With the CoroDrill DE10 in place, Hägglunds' operators can leave machines running unattended and focus on other tasks, transforming downtime into predictable, continuous machining.

"The stability of the drill lets us push the machine harder without compromising quality. We increased productivity by 18 percent and doubled the time in cut per drill tip from 40 to 80 minutes. And the drill body lasts much longer," Andreas Branthsson states.

Sandvik Coromant's tooling approach

Rather than replacing machinery, Sandvik Coromant focuses on strengthening manufacturing processes through advanced tooling and collaboration. Solutions like the CoroDrill DE10 are designed to deliver repeatable precision, extended tool life and reliable performance: enabling manufacturers to increase output, reduce interruptions and move toward more autonomous workflows without overhauling existing hardware.

Hägglunds' experience is a clear demonstration of the value of precision tooling in demanding production environments. By combining engineering expertise, deep collaboration and the right drill, Sandvik Coromant helped the company achieve reliable high volume production while reducing manual supervision. Mikael Carlsson concludes: "It's a holistic approach grounded in what we call manufacturing wellness, looking at the bigger picture of skills, knowledge and technology."

Investing in the right tooling doesn't just improve outputs: it strengthens productivity, stability and resilience. Facilities that prioritise process performance, consistency and operator support stand to gain more from their existing machines while laying a foundation for future automation and lights out manufacturing.

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TaeguTec expands tangential milling range

Responding to growing market demand for enhanced tooling versatility in high-rigidity milling operations, TaeguTec has now expanded its TANG-SFEED tangential milling insert range. Adding new corner radius options across the LPKU insert family, the expansion encompasses new radius sizes for LPK(H)U 05, LPK(H)U 09 and LPKU 14 inserts, broadening application possibilities while maintaining the remarkably smooth cutting performance.

The TANG-SFEED system employs tangential insert clamping to deliver exceptional rigidity and cutting stability across a wide range of milling applications. The optimal edge design ensures smooth material engagement and consistent chip formation, while the robust insert geometry endures demanding machining conditions. This combination enables reliable performance in both conventional and high-feed milling operations on ferrous and non-ferrous materials.

The expanded selection provides end users with enhanced flexibility to optimise machining parameters on specific application requirements. The LPK(H)U 05 insert range gains a 0.8 mm corner radius option, complementing existing square end, 0.2 and 0.4 mm radius variants. The LPK(H)U 09 series adds a 1.2 mm radius alongside the established square end, 0.4 and 1.6 mm options, while the LPKU 14 platform introduces 0.8, 1.6 and 2.4 mm radii to address larger diameter cutter applications.

Corner radius selection proves critical in balancing cutting-edge strength against surface finish requirements. The smaller radii deliver sharper cutting action and finer surface finishes but require more conservative cutting parameters, while larger radii distribute cutting forces across greater edge length, enabling more aggressive material removal rates with enhanced tool life. The expanded range enables end users to fine-tune this balance for optimal productivity in specific applications.

The tangential insert configuration delivers several operational advantages over conventional indexable milling systems. The clamping mechanism positions the insert with the cutting-edge perpendicular to the feed direction, maximising edge utilisation and enabling consistent performance throughout insert life. This reduces cutting forces and vibration, particularly beneficial in unstable machining conditions or extended overhang applications where conventional cutting tools struggle to maintain stability.

Insert availability spans multiple TaeguTec coating grades, addressing diverse material groups. The TANG-SFEED is available in TaeguTec's TT9080, TT9030, TT8080, TT8020, TT8525B, TT7080, TT7515, TT6080 and TT5525 grades. The comprehensive grade selection enables manufacturers to match insert specification precisely to workpiece material characteristics and machining parameters.

The LPHU 05-ML variant offers a specialist geometry for intricate milling operations, accommodating axial depths from 0.1 to 3.5 mm with corner radii up to 0.4 mm. This configuration addresses precision component manufacturing requirements where minimal material removal and superior surface finishes are essential.The inserts are compatible with end mill and face mill cutters from 10 to 200 mm in diameter.

TaeguTec introduces grooving CBN and PCD inserts

The TaeguTec T-Clamp parting and grooving series has been a recognised leader since its introduction. TaeguTec has now significantly expanded the line with the introduction of new CBN and PCD single-ended inserts. Designed to meet the demands of high-performance turning, grooving, and profiling operations, the new inserts will improve performance and extend tool life for end users.

The new inserts expand TaeguTec's single-ended insert line and are available in two distinct series. The TSG is a CBN grade for hard-material machining and the TSA is the PCD option for non-ferrous machining.

The CBN lineup for grooving and profiling hard materials now includes a 2 mm cutting width, broadening the range of applications that can be addressed. The TSG series is offered in both standard square-end and full-radius configurations, with the full-radius variant supporting turning, grooving and profiling. Both CBN and PCD inserts are available in cutting widths of 2, 3, 4, 5, 6 and 8 mm. The TSG series is manufactured from TaeguTec's high-performance TB2015 CBN grade and the square-end inserts incorporate a 0.2 or 0.4 mm radius to prevent edge chipping and improve performance. The inserts have a clearance width of 1.7 to 6 mm, depending on the selected insert cutting width and the TSG full-radius variant has the same clearance width.

Enhanced PCD inserts deliver outstanding machining performance and a superior surface finish in both continuous and interrupted cutting of non-ferrous metals. The TSA also series introduces TaeguTec's exceptional TD1020 PCD grade.

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NEW COMPANY NAME

NYDALOXE PRECISION

Tool Holding Without Limit

WE HAVE CHANGED OUR NAME FROM GEWEFA UK TO NYDALOXE PRECISION

It is a reflection of our evolution as a business. Since we were formed in 1991, our product portfolio has expanded enormously from Gewefa's comprehensive range of high-quality tool holders to embrace a host of additional products (see below).

We are now the sales and service agent for many other German and Swiss manufacturers of top-quality driven and static turning tool holders, precision collet chucks, heat-shrink systems, spindle tool clamping systems, angle heads, speeders, and multi-spindle heads – and we intend to add more.

Over the years, we have streamlined our working practices, invested heavily in our facilities and team, and added preventative maintenance services. It is very much business as usual going forward. We are excited to continue our relationships with valued customers and forge new ones with other machine tool suppliers, OEMs and subcontractors across Britain and Ireland.

Although our branding is different, everything else remains unchanged and our dedication to product quality and customer service is undiminished. Please take a moment to view our new website at www.nydaloxeprecision.com

CALL TODAY TO FIND OUT MORE ABOUT OUR PRODUCTS OR ARRANGE A DEMO

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New indexable insert mills from Horn

Tooling manufacturer Horn has expanded its DA milling programme for corner, face and plunge milling. Suitable for roughing or finishing, the new DA65 system uses a larger insert than the existing DA62, enabling greater axial depths of cut. The patented, six-edged, indexable insert can be used on both sides and has three axial and three radial cutting edges per side, leading to an economical cost-per-edge ratio.

The sintered, trigonal insert has a thick cross-section and, despite the negative lead angle, exhibits a positive cutting geometry, ensuring soft-machining characteristics and reduced cutting forces. The selected axial and radial rake angles result in low torsional moment and less transverse load on the spindle, allowing the system to be used on older and less powerful machines. A further advantage of the chosen axial rake angle is efficient chip evacuation, especially during helical plunging.

The cutting-edge profile generates a precise 90-degree corner angle, maximum cutting depth being 7 mm. The inserts are available with corner radii of 0.8 mm or 1.2 mm. The proven SA4B carbide substrate is an all-rounder for milling steel, stainless steel, cast iron and aluminium. The inserts are also available in grades SC6A or IG6B for machining other material groups.

The tools are available as end mills in diameters 32 mm and 40 mm with two or three inserts and as shell milling cutters having a diameter of 50 mm, 63 mm, 80 mm or 100 mm. Depending on the size, there are four, five, seven, nine or eleven inserts. All tools have provision for internal coolant supply to the cutting zone.

Horn Cutting Tools Ltd. Ringwood, is the wholly owned UK subsidiary of Horn S.A. Luxemburg, a leading European supplier of grooving tools and a leader in precision grooving technology. The company was incorporated in the UK in 2008, having previously traded as Horn UK since 1995.

The Horn group of companies is led by Paul Horn GmbH, based in Tubingen, near Stuttgart, which has been developing and producing grooving, side turning and slot milling tools since 1969. These tools occupy a leading position in the market.

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Nydaloxe Precision is the new name for Gewefa UK

Wiltshire-based tooling specialist Gewefa UK has announced a major corporate rebranding, officially changing its name to Nydaloxe Precision. Operating under the slogan "Tool Holding Without Limit," the firm has adopted a new identity that reflects the evolution in its commercial direction since it was established in 1991.

While the early focus was on delivering the comprehensive range of high-precision spindle nose tool holders manufactured by its German parent company, Gewefa GmbH, the UK firm ceased to be a subsidiary some time ago. It is now an independent entity whose product portfolio has widened considerably to cater to a more extensive spectrum of engineering applications.

Today, Nydaloxe Precision operates as a sales and service agent for a variety of top-tier German and Swiss tooling product manufacturers. The scope of the equipment supplied includes driven and static turning toolholders, precision collet chucks, heat-shrink systems, spindle tool clamping systems, angle heads, speeders and multi-spindle heads and the intention is to add to the range in the near future. The current list of principals is: EWS Tool Technologies, Fahrion, Gewefa, Kemmler, OTT-JAKOB, Pibomulti, Rineck and Wendel Tools.

Commenting on the landmark transition, director Nicole Lloyd-Foxe said: “The name change is a direct result of how our business has developed over the past three and a half decades. While we were founded as a subsidiary of Gewefa in Burladingen, southern Germany, our operation has since expanded to include a much more diverse range of standard and bespoke tooling packages.

“Over the years we have streamlined our working practices, invested heavily in our team and facilities and integrated preventative maintenance services into our offering to customers. It remains very much business as usual. We are looking forward to continuing our longstanding relationships with valued customers and are excited to forge new partnerships with more machine tool suppliers, OEMs and subcontractors across Britain and Ireland.”

Alongside the fresh branding and change of name, Nydaloxe Precision has launched a new website: ***www.nydaloxeprecision.com***. The firm continues to operate from the same address, 28B Southwick Road, North Bradley, Wiltshire, BA14 0SJ and the telephone number remains 01225 811666.

Gewefa UK has changed its name to Nydaloxe Precision and launched a new website.

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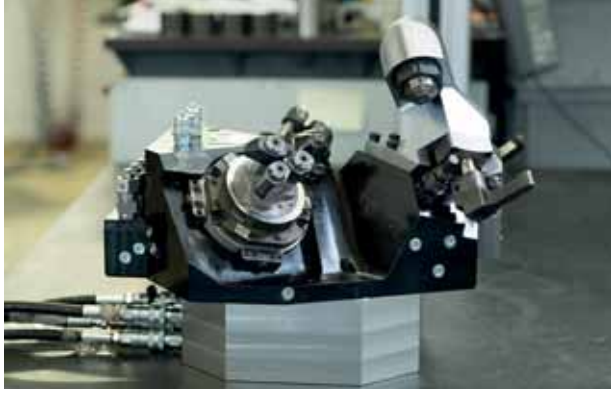
Rethinking turnkey competence



Turnkey solutions are becoming increasingly important in modern manufacturing. They constitute holistic concepts where the solution provider takes full responsibility for planning, implementing and optimising a production process.

This not only involves the supply of individual components, but also the intelligent combination of machines, tools, fixtures and digital services. A sophisticated turnkey concept offers customers maximum efficiency and minimal interfaces, representing a very secure investment especially in times of complex requirements and increasing demands on quality. As a full-service provider, MAPAL fulfils these criteria without exception.

For Stephan Köstler, senior director product & service management, the strength of MAPAL's approach lies in the fact that all important disciplines are integrated: from process analysis to tool and fixture design to simulation, programming and production support. Another distinguishing feature is MAPAL's capability to assume responsibility for entire processes. He states: "We don't just deliver components; we deliver production that runs."

The advantages for the customers are clear: less organisational complexity, lower risks and quicker production launch. Industries with high quality requirements, sophisticated components and tight tolerances profit the most: the automotive and E-Mobility, fluid power technology, mechanical engineering and aerospace industries, for example.

By assuming responsibility for processes, customers have certainty for their planning and are provided with a basis for substantiated financial decisions. MAPAL provides the relevant return-of-investment key figures to the customer: much shorter ramp-up times, stable CpK values from day one, low tool and process costs through tools and cutting data that are optimally aligned to the process and each other, and clearly documented progress through all project phases. By means of reference projects, MAPAL can also show how quickly turnkey solutions take effect and costs are recouped.

With its turnkey solutions, MAPAL offers a comprehensive service package for the development and implementation of complete machining processes, from the initial project analysis right through to series production. The aim is to optimally coordinate all process steps, thereby achieving high process reliability, maximum performance and cost-effective manufacturing processes.

Building on this, the machining process is designed using the most cost-effective machining technology, and the tools are supplied ready for use. Simulations, NC programme generation and collision checks ensure a high level of process stability even before the actual machining takes place.

As a central element of every turnkey project, MAPAL develops and manufactures the appropriate clamping fixtures. The entire implementation, from design and production through to delivery ready for use, including dimensional and functional testing, collision analysis and comprehensive technical

documentation is handled by a single source. This is underpinned by the company's in-house expertise and capacity in fixture manufacturing.

MAPAL also relies on a complete 3D simulation chain. The fixture is digitally embedded in the real machine environment and all tools and NC programmes are checked for collisions. Detailed reports, 3D visualisations and close reviews with the customer ensure a smooth production ramp-up without any surprises.

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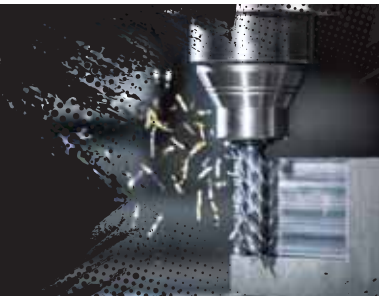
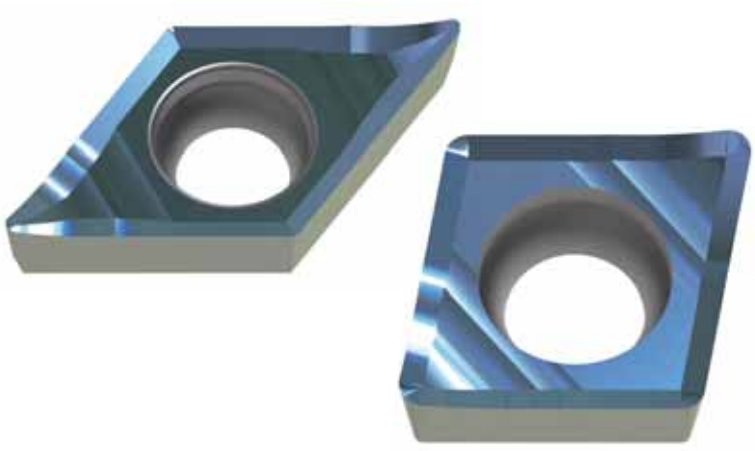
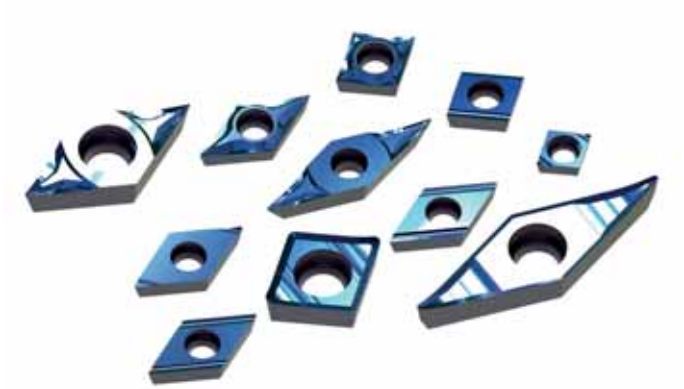


LC2005 inserts for non ferrous materials

Mitsubishi Materials has introduced the new LC2005 DLC coated grade, an advanced turning insert developed to deliver superior performance in the precision turning of non-ferrous metals, particularly aluminium alloys. Designed with a newly engineered thin hydrogen-free Diamond-Like Carbon (DLC) coating, LC2005 combines exceptional hardness with outstanding lubricity to significantly improve machining efficiency and component quality.

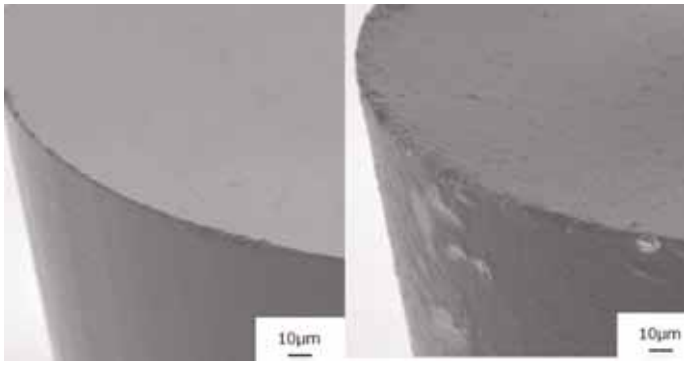
At the core of the LC2005 grade is Mitsubishi Materials' latest thin-film DLC coating technology, which provides an optimal balance between wear resistance and adhesion. Traditional hydrogen-free DLC coatings offer high hardness but can be prone to peeling due to differences in hardness between the coating and the substrate. LC2005 overcomes this challenge through an innovative thin-film structure that greatly enhances coating adhesion, ensuring stable performance even during demanding cutting operations.





Cutting edge quality

LC2005 displays a conventional uneven uniform cutting edge cutting edge.



The result is a turning insert that delivers excellent wear resistance and longer tool life, reducing tool changes and improving productivity. The high hardness of the DLC coating also minimises flank wear while maintaining a consistently sharp cutting edge, enabling reliable machining across a wide range of aluminium alloys.

LC2005 also enhances surface finish quality, an essential factor in precision component manufacturing. The combination of a smooth thinfilm coating and a sharp cemented carbide substrate edge produces superior surface finishes compared with conventional solutions, helping manufacturers achieve tighter tolerances and improved component performance.

In addition to performance benefits, the improved durability of LC2005 contributes to greater machining efficiency and sustainability. Longer tool life reduces tooling consumption and downtime, supporting more efficient production processes.

With its advanced coating technology and optimised cutting performance, the LC2005 grade provides manufacturers with a reliable solution for highprecision, high-productivity machining of nonferrous materials in industries such as automotive, aerospace and precision engineering.

It is available in the following geometries: CCET, CCGT, DCET, DCGT, VCGT and VPGT.

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Clever workholding helps one machinist operate multiple mills

Subcontract machinist and fabricator Richard Haim, owner of RPH Manufacturing, is the sole operator of 14 machine tools, including four Hurco VM-series Vertical Machining Centres (VMCs). Yet even single-handedly he still manages to ship 98 varieties of component totalling more than 45,000 items annually out of the door of his Wimborne factory. Helping him to achieve this are Chick QwikLOK twin-station clamps, manufactured in the US and supplied by sole UK sales agent 1st Machine Tool Accessories.

A twin-station Chick QwikLOK with machined soft jaws being used on a Hurco VMC to slot mill 10 securely-held components at a time.

Typically eight or 10 round components may be secured at a time using aluminium jaws machined to match the profile of the parts. Winding a single handle moves two jaws simultaneously and rapidly towards a central, fixed jaw. Opposing forces are cancelled and a reliable reference point is provided for accurate machining. Moreover, the Chick jaws create a pull-down action when they close, ensuring rigid workholding.

Richard Haim comments: "The best thing about these clamps is their repeatability of positioning to within 10 to 15 microns, better than the 20 microns that the US workholding equipment manufacturer specifies in its literature. So, every part we machine comes off perfect."

The extended cutting cycles that the Chick workholding system allows means that Richard Haim is able to walk away from a machining centre for longer to carry out other production operations on the shop floor, dramatically raising the throughput of machined parts. An added advantage of multiple part fixturing is that cycle time per component is reduced by consolidating each tool change across all of the parts, reducing ATC time by a factor equal to the number of components held in the jaws.

Two halves of a gearbox casing also benefit from being secured in soft jaws on a QwikLOK.

This manifold was held in a QwikLOK on just 3 mm of material prior to milling.

Another Chick QwikLOK being used to hold multiple round parts, this time for an RPH Parallel Lock kit.

Six years ago, Richard Haim introduced a proprietary product, Parallel Lock, to help other machinists keep parallels in position on a machine vice as it is being closed. The Chick workholding system is also employed when machining 14 of the metal and plastic components that go into each 74-piece kit.

Richard Haim continues: "Whether it is one of our own components or a contract part, say an F1 bracket, multiple fixturing in a Chick QwikLOK coupled with the Patterns feature in Hurco's MAX conversational control is a huge time saving.

"For example, at the control I can program a slot mill to machine one part and then tell it to step and repeat the same operation across all of the components, simply by creating a Pattern block to define the X,Y location of each of them on a grid."

Larger components held singly in each jaw can be retained with a high clamping force. It enables, for instance, a cylindrical manifold having a 3-degree taper to be secured on just 3 mm of material at the bottom of the part prior to machining. Every component produced in the Wimborne factory is inspected and a first article report is emailed to the customer as a PDF before the order has even been shipped, often under a consignment stocking and Kanban delivery arrangement. With such an accent placed on quality control, especially in view of RPH's specialisation in supplying the demanding motorsport and aerospace sectors, the Tier-1 subcontractor invested £70,000 in metrology equipment in 2025 alone.

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Face-and-taper toolholders evaluated for a slotting application

Using an SK40 Plan hydraulic expansion chuck from toolholder manufacturer Gewefa, a Wunschmann trochoidal milling cutter was able to demonstrate its full capability on an AXA machining centre at Gewefa's factory in Burladingen. All equipment suppliers involved are German. The sole sales agent for Gewefa products in the UK and Ireland, Wiltshire-based Nydaloxe Precision, describes the machining tests, which produced optimal results in terms of tool life, dimensional accuracy and surface quality.

In this particular application, a slot measuring 1,160 mm in length, 20 mm in width and 6.5 mm in depth had to be milled into a workpiece made of nitriding steel (34CrAlNi7), a difficult material to machine. Alloyed nitriding steel is characterised by high surface hardness and wear resistance. Typical uses for it include high-speed spindles, shafts, gauges, precision measuring equipment and cams.

The 175 ER trochoidal mill is available in cutting lengths from 18 to 70 mm and features a corner radius of between 0.25 and 0.5 mm. Its proprietary HE-S high-performance PVD coating, formulated for hard machining, is resistant to high temperatures and oxidation. The tool features five generously dimensioned, polished chip flutes and a robust core. Thanks to its variable helix angle, vibration is minimised and so tool life is extended.

At Gewefa's factory, the trochoidal mill is used on a large AXA 5-axis, travelling-column, universal machining centre, an impressive production platform featuring an X-axis travel of four metres and a powerful swivelling spindle rated at 40 kW/191 Nm. The cutter is mounted in a toolholder having face-and-taper contact in the machine spindle to prevent axial movement under heavy radial loads.

In the initial test, a 16 mm diameter cutter was clamped into a collet chuck with face-and-taper contact. The cutting speed (Vc) was 80 m/min, with a feed rate (fz) of 0.16 mm/min. The machinists were satisfied with the dimensional accuracy and surface quality, but the noise level when milling the slot was rather high. So, the decision was taken to swap the collet for a Gewefa SK40 hydraulic expansion toolholder, also with a dual-contact spindle interface, which rectified the noise issue. The holder transmits torque and cutting forces without slipping through both friction and positive locking.

The reason for the better cutting performance is that hydraulic expansion dual-contact toolholders provide more rigidity, leading to less vibration. Runout accuracy of typically less than 3 microns is normal. Additionally, hydraulic technology results in an average 75 percent reduction in setup

time compared to a shrink-fit chuck. Moreover, when using the former to enhance cutter rigidity, no heat-shrink units are required so setup can be carried out anywhere on the factory floor.

The hydraulic system ensures an exact, concentric, play-free connection for the milling tool. Hydraulic oil is contained within chambers in the tool holder. When pressure in the system is increased via an adjustment screw, the interior side walls are pressed firmly around the tool shank. Pressure distribution is identical at every point around the circumference; it is impossible to clamp a tool more evenly.

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Connect Combo
Flexible dot-peen marking with new Set & Drive software option

The Connect Combo from Technomark offers the flexibility of being a 2in1 handheld and bench system, flexible enough to handle different part sizes, easy for operators to use, and connected enough to fit into increasingly digital production environments. Combine this with Set & Drive PC-based control software, the Combo provides manufacturers with a practical and more intuitive control experience. For example, Set & Drive can be used remotely to enable preparation of marking sessions in advance, assign marking files to the appropriate machines and organise production marking in a more centralised way.

One machine, two configurations

One of the defining characteristics of the Connect Combo is its ability to switch between benchtop and portable operation in less than 10 seconds without tools.

In benchtop mode, the marking head is mounted on an adjustable column, making it suitable for smaller and medium-sized components. This configuration provides a marking setup for repeatable production work.

When larger, heavier or difficult-to-access components need to be marked, the system can be converted to portable mode. The operator can take the marking head to the component rather than moving the component to the machine. The wireless marking head can operate within a radius of up to 10 metres from the controller, providing considerably greater freedom on the production floor.

This combination makes the Combo particularly useful for manufacturers dealing with a wide variety of components or production processes where a fixed marking station alone may not be practical.

Wireless freedom for industrial marking

The portable configuration is enabled by a secure Wi-Fi connection between the marking head and controller. RFID technology can also be used to simplify pairing the two and access management.

The marking head incorporates a 22V lithium-ion NMC battery and offers three operating modes: 100 percent electric, 100 percent battery or plug-in hybrid. This allows users to choose the most appropriate power configuration for their working environment. A powerpack battery is also available to allow the complete system to operate mains free.

The result is a marking system that can move between different production requirements without requiring a separate portable machine.

Designed for different parts and applications

The Combo has a 120 × 60 mm marking window, with three marking speeds and 11 marking-force settings. It has the capability to mark alphanumeric text, sequential numbering, variable data, time and date stamps, 2D codes such as Data Matrix and QR codes, as well as logos and other graphic elements.

The system is designed to mark a broad range of materials, including steel, stainless steel, aluminium, brass, copper and cast iron, as well as plastics such as PVC, polyamide, polycarbonate, polyethylene, polypropylene and POM.

A versatile five-in-one support foot further expands its usability, providing functions for flat-part marking, magnetic positioning, non-slip support, cylindrical-part marking and positioning assistance. Custom feet can also be manufactured if required.

For manufacturers working with cylindrical components, a rotary-axis option is also available. The rotary axis is controlled by the software and can accommodate parts up to 80 mm in diameter and weighing up to 10 kg.

Set & Drive: Bringing PC Control to the marking process

The capabilities of the Combo are complemented by Set & Drive, Technomark's PC-based control software for dot-peen marking machines.

Rather than limiting machine control to the marking controller, Set & Drive allows users to control compatible machines from a PC. The software has been designed to simplify machine operation, marking-file management and production preparation. It is specifically developed for the Easy and Combo dot-peen marking machines.

Set & Drive can be used in two main ways: at the production workstation or remotely from an office. When used alongside the machine, Set & Drive gives operators a PC-based interface for controlling the marking equipment. A keyboard and mouse can make certain operations more convenient, while users can adjust settings and launch marking jobs directly from the computer. For production environments where operators perform frequent marking changes, this can provide a more comfortable and straightforward working experience.

Set & Drive can also support production preparation away from the marking station.

For example, process engineers or production teams can prepare marking files before a production run, manage controller databases and assign marking jobs to the appropriate machines. This approach can help separate production preparation from machine operation and improve organisation across a set of marking machines.

Modern traceability requirements increasingly make marking data management as important as the physical marking itself. Set & Drive is intended to help centralise this aspect of the process. The software allows users to edit and modify marking files, monitor machine status and maintenance, and distribute marking tasks across connected machines. Additional options

are available with the Combo such as a USB Production Tracker for exporting marked data for quality control purposes, Font Creator for creating custom fonts, Custom HMI for dashboard and screen customisation, and RFID-based access functionality.

This creates a more connected workflow in which marking preparation, machine control and production information can be brought closer together.

Built for connected manufacturing

The Combo controller includes Ethernet connectivity and USB ports, supporting integration into a connected production environment. The machine's software also provides features such as real-time marking information, multilingual operation, preventive maintenance functions and configurable dashboard capabilities.

For manufacturers looking toward Industry 4.0 principles, this connectivity can be particularly valuable. Instead of treating marking as an isolated operation at the end of a production process, the Combo and Set & Drive combination can form part of a wider digital manufacturing workflow.

Ergonomics and ease-of-use

Flexibility is only valuable if the equipment remains practical for operators. The Combo has been designed around this principle, with a lightweight marking head, an in-line handle and a Quick Shift function for rapid height adjustment of the column, saving valuable time.

The controller uses a 10-inch tempered-glass screen, while the machine's software is designed around an intuitive interface intended to make marking jobs straight-forward to configure and execute. These features are particularly relevant in production environments where operators may need to change between components, marking positions or job files throughout the day.

A flexible solution for modern production

The key advantage of the Connect Combo is not simply that it is a dot-peen marking machine. Its value comes from combining portable and benchtop marking in one system, wireless operation, flexible positioning, connected control and PC-based production management.

For manufacturers marking a mixture of small, medium, large or difficult-to-access components, this combination can provide a practical way to reduce the need for multiple marking setups while maintaining a consistent approach to identification and traceability.

For companies looking to modernise their marking operations while retaining the durability and permanence of dot-peen marking, the Connect Combo with Set & Drive provides a compelling combination of physical flexibility and digital control.

Universal Marking Systems are Technomark's sole partner in the UK and offer full support to help you find the best solution for your marking application. Minimal maintenance is required for the Combo system but we are always on hand and offer long-term support. Discover how this versatile system can elevate your marking process to the next level.

Universal Marking Systems
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Marking and verifying complex aerospace components

Why multi-axis matters

An aero engine disc rarely gives you a flat face to work with. Casings, blisks and turbine rings come with curves, bores, internal diameters and angled faces that a fixed marking head simply cannot reach. On a component where a misplaced or unverified mark can mean rework, concession or scrap, that's not a detail. It's a major problem that a Multi Axis Aerospace Workstation was designed and built to solve.

This article from Pryor Marking looks at why complex aerospace geometry demands a different approach to marking, how vision-guided alignment and integrated verification work together to protect mark quality and where this kind of system earns its place on an aerospace production line.

Why aerospace marking carries more risk than most

Engine components are marked because they have to be traceable for life. The mark has to sit in the right position, meet the right quality standard and match the right production data, every time. Get it wrong on a high-value casing or disc and you're not looking at a quick fix. You're looking at rework, a concession process, or in the worst case, scrapping a component that may have cost tens of thousands of pounds to machine.

That's the standard the Pryor engineers design against. Not "mark it well most of the time," but mark it right, in the right place and prove it.

Designed for complex aerospace components

The workstation is built for the part families that cause the most trouble on conventional bench-mounted or fixed marking systems: Engine casings; Engine discs; Blisks; Turbine rings; Structural rings.

These are components that are high value, awkward to handle, irregular in shape, or governed by aerospace direct part marking requirements. A fixed-head machine asks the operator to bring the part to the mark. The workstation does the opposite. It controls up to eight servo-driven axes, including horizontal, vertical and rotary movement, working alongside an adjustable turntable, so the marking head and the component can be positioned together for the access angle the job actually needs.

In practice that means external faces, internal faces, angled faces, recessed surfaces and multiple faces on the same part, all from one machine, without re-fixturing between operations. Most multi-axis marking systems in this space top out at six axes. Controlling up to eight gives Pryor engineers more freedom to set the marking head and the component to exactly the angle a feature demands, rather than the angle the machine happens to allow.

Vision-guided marking: Using the part as the reference

Manual alignment works fine until a component has more than one possible orientation, an irregular profile, or a marking position that has to be controlled relative to a machined datum, bore or slot. At that point, operator judgement becomes the weak link in an otherwise precise process.

The workstation's vision system uses the part's own features as the reference. Before marking starts, the camera identifies these features and confirms the component's position and orientation, applying machine offsets automatically rather than relying on an operator's eye. The marking operation then runs relative to where the part actually is, not where it's assumed to be.

This matters most on components with internal features or multiple valid orientations, exactly the parts where a manual setup error is easiest to make and hardest to catch.

Integrated verification: Catching problems before they leave the station

Marking and verification are two separate operations on most production lines, often happening in different places, sometimes on different shifts. Every handoff between them is an opportunity for a bad mark to travel further into the process before anyone notices.

The workstation closes that gap. It's supplied with the VeriSmart 4 vision system, which checks Data Matrix codes and human-readable marks immediately after the mark is applied, in the same station, as part of the same cycle. If something's wrong with the mark, it gets caught there and then, not three operations later.

The system supports the standards aerospace manufacturers are already working to, including AS9132, AIM-DPM, ISO/IEC 29158, JES131, RRES90003, RRES90005, PWA309, PWA310, P23TF3, P23TF10, AS478 and Spec 2000, alongside customer-specific marking specifications.

Precision dot-peen marking: Built for engineering metals

Dot-peen is the marking technology of choice across aerospace manufacturing for a straightforward reason: it produces permanent, durable marks on the metals these components are actually made from, while supporting both human-readable text and machine-readable Data Matrix codes for long-term traceability.

The marking head can be configured with a low-profile arrangement and an indexable stylus, which opens up restricted areas of a component, including internal diameter marking, that a standard head geometry would struggle to reach.

Workholding that adapts to the component, not the other way around

A robust adjustable turntable and pneumatic gripping arrangement secures the component during marking, but the detail that matters for most manufacturers is flexibility. Fixture features can include an adjustable rotary table, pneumatic gripper, internal or external diameter clamping, Delrin-faced support arms, configurable clamp peg positions, bespoke tooling for specific components and optional fixtures for blade or vane marking. The workstation is also designed to allow part loading by crane, which matters when you're handling castings and forgings too heavy or awkward to load by hand.

That range means one marking platform can serve multiple component families, with controlled loading, repeatable location and safe operator access maintained across all of them.

Software and data integration

The workstation runs on Pryor's MarkMaster 4 traceability and control software and can be configured for production data integration, including MES, reducing manual data entry and supporting controlled marking of serialised components.

Typical functions include new program creation from set templates, manual or automatic program selection, serial number and part number marking, Data Matrix marking, mark verification result capture with PDF vision reports and FAIR reports, production data import and MES integration.

Built-in operator safety

As a dedicated marking and verification station, the workstation is fully enclosed, with door safety switches, emergency stop buttons and a low-speed programming mode for setup and development work when the safety doors are open. The enclosed format protects the marking process from the variation that manual handling and inconsistent setup can introduce, as well as protecting the operator.

Where this fits on your line

The Multi Axis Aerospace Workstation is built for direct part marking, aero engine component traceability, turbine disc and ring marking, blisk marking, engine casing marking, OGV blade and vane marking, internal diameter marking, Data Matrix marking and verification, human-readable identification and high-value component serialisation.

If your current marking process relies on manual alignment, separate verification steps, or a fixed-head machine that can't reach every face your components, this is the kind of problem the workstation was designed to solve.

Pryor Marking machines and custom projects are all designed, built and programmed right in its Sheffield Head Office. You're not speaking to a third party who then has to speak to the designer, you're speaking directly to the people behind the machines.

Speak to the engineers about your component range and marking requirements or see the full specification on the Pryor Marking product page.

About Pryor Marking

Pryor Marking Technology, the trading name of Edward Pryor and Son Ltd, is a leader in the manufacture and design of both traditional and innovative marking, identification and traceability solutions. Founded in 1849 in Sheffield, UK, a hub of manufacturing and the birthplace of stainless steel, the company's success is built on providing marking and traceability solutions for all manufacturing industries. Pryor has over 175 years of innovation and marking excellence. A family-owned business up until 1978, Pryor is now proudly owned by a charitable trust. Operating from sites in the UK, USA, and France, Pryor serves an extensive customer base, supported by a comprehensive distributor network in countries across the globe. Edward Pryor & Son has grown to become a single source supplier, offering a complete portfolio of solutions for permanent part marking; ranging from a simple hand stamp through to turnkey, bespoke systems with multi-axis computer-controlled marking heads, machine vision and traceability software. Its products are split into three categories; HandTools, Marking Machines and Custom Solutions.

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Vision Engineering launches PicoZoom

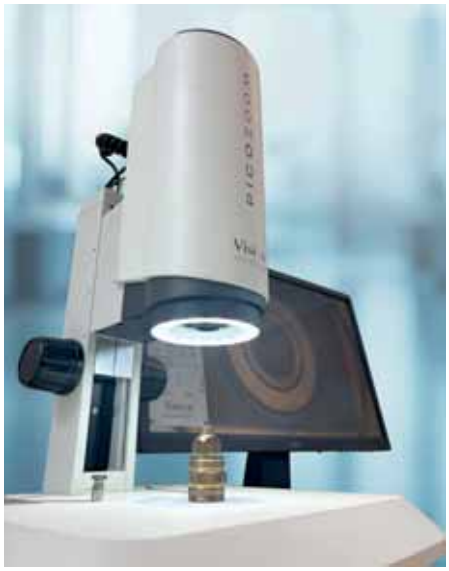
Vision Engineering, a UK-based designer and manufacturer of magnification and inspection systems, has announced the global launch of PicoZoom, a new autofocus digital inspection microscope built for electronics, component motorised zoom, one-click autofocus, focus stacking and built-in measurement and reporting tools in a single workflow. It helps inspection and quality teams achieve clearer images, faster setup and more consistent, documented results.

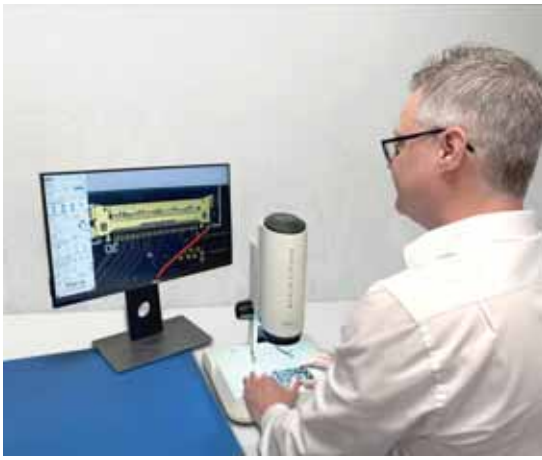
Manufacturers are under growing pressure to meet tighter quality control requirements and to document inspection results more thoroughly, without slowing down production. PicoZoom has been developed to meet that need, sitting between low-cost USB microscopes and higher-end digital inspection platforms and giving manufacturing and quality control teams access to autofocus imaging, measurement and reporting within one accessible system.

One-click autofocus and a motorised 0.7× to 4.5× optical zoom, 18.9× to 121.8× system magnification, allow operators to move between parts, surfaces and magnification levels without changing lenses or manually refocusing, reducing setup time and helping keep results consistent between operators and shifts.

Quadrant-controlled LED lighting gives operators directional control over illumination and automatic exposure, making edges, marks and surface detail easier to see on reflective or low-contrast parts.

On parts with depth, such as solder joints, stepped surfaces and threaded components, a single image often only shows one area in sharp focus. PicoZoom's focus stacking function combines images captured at different focal planes into one sharp composite, extending depth of field across the part without manual refocusing.

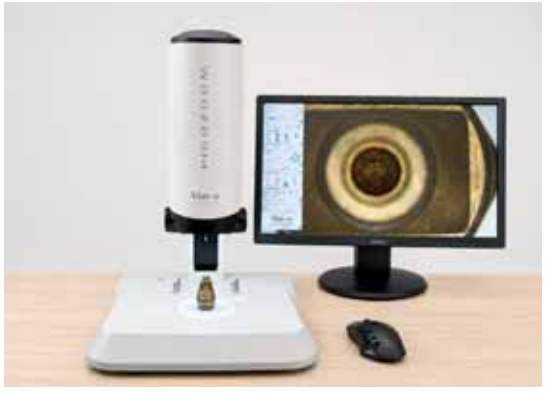




Built-in dimensioning and annotation tools, together with custom report output, let operators capture on-screen measurements and images and compile them into formatted reports without leaving the system, supporting quality control documentation and traceability.

PicoZoom connects via HDMI, USB 3.0 and LAN. It uses a 2 MP CMOS sensor delivering 1080p resolution at 60 fps and occupies a compact benchtop footprint of 320 x 308.6 mm.

"Manufacturers today face increasing pressure not only to carry out inspections consistently, but also to demonstrate and document the results," explains Sam Crossley, managing director of Vision Engineering. "PicoZoom combines imaging, illumination and reporting in a single, easy-to-use system that can be deployed quickly and adopted with minimal training. By making documented, repeatable inspection more accessible, it enables a wider range of manufacturers to benefit from capabilities that have traditionally required a significantly greater investment. PicoZoom is a natural extension of our digital inspection portfolio and reflects our commitment to helping customers improve quality, traceability and efficiency."



Typical applications for PicoZoom include PCB and solder joint inspection, medical device inspection, incoming goods inspection and defect analysis, alongside broader use in component inspection and quality control across aerospace, motorsport, welding, automotive, research and education environments.

PicoZoom is available now through Vision Engineering's global network of branches and authorised distributors, with a UK list price starting at £3,250. Full technical specifications and further information are available at ***visioneng.com***

About Vision Engineering

Vision Engineering Ltd provides inspection and metrology solutions across industry, science and research, from ergonomic optical magnification to advanced digital microscopy and non-contact measurement systems. Its product range includes the Mantis and Lynx EVO ergonomic stereo microscopes, the ProteQ VISO and EVO Cam series of digital microscopes, and a range of vision measurement systems for non-contact dimensional inspection and verification. Vision Engineering is certified to ISO 9001:2015 for its quality management system.

Vision Engineering's contract manufacturing division offers comprehensive contract manufacturing, design, and commercialisation packages, giving customers access to the latest technology, as well as a team of experienced designers and engineers.

Founded in 1958 and wholly British-owned, Vision Engineering's Global HQ, design, and manufacturing facilities are based in state-of-the-art modern premises in Woking, Surrey, UK, with extensive manufacturing facilities in the UK and the US. Regional sales and tech support offices are located throughout North America, Europe and Asia, supported by a fully trained network of distributors.

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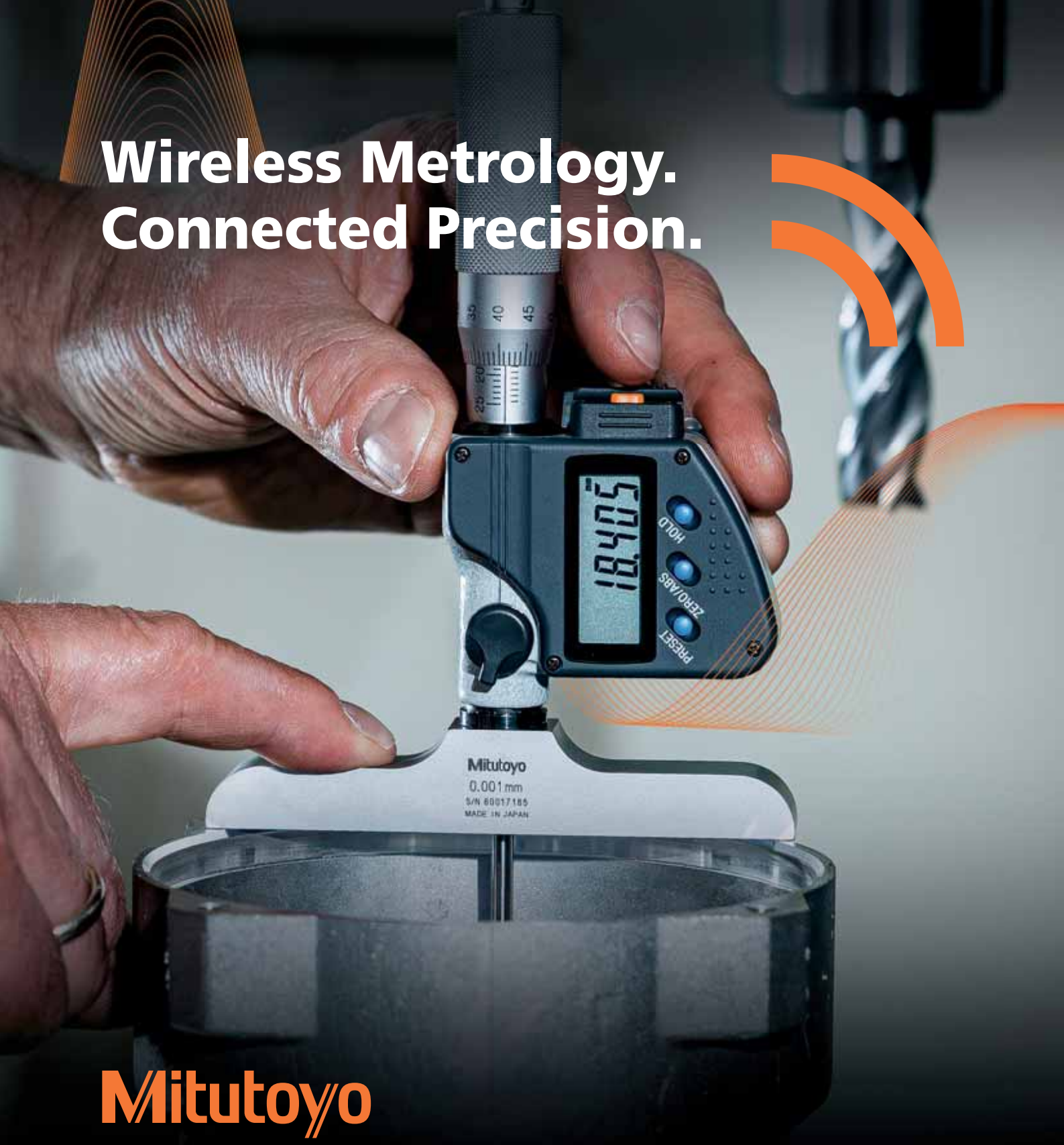

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PRECISION IS IN OUR **DNA**

Bowers Group bespoke air gauging solutions

Reliance Precision partnered with Bowers Group to implement bespoke air gauging solutions across a range of demanding applications.

For manufacturers operating at the forefront of precision engineering, maintaining absolute accuracy is critical at every stage of production. At Reliance Precision, advanced measurement technology plays a central role in ensuring components consistently meet the exacting standards required in industries where precision is essential.

To support this level of control, Reliance Precision partnered with Bowers Group to implement bespoke air gauging solutions across a range of demanding manufacturing applications. The systems have improved process stability, strengthened repeatability, and enhanced production accuracy for components used in sectors including defence, space and life sciences.

Andrew Mannion, metrology lead at Reliance Precision, says: "The gauges have significantly improved the stability and accuracy of our measurement processes, delivering consistent and reliable results across applications. Their ease of use has enabled efficient adoption within the team, minimising training requirements and supporting day-to-day productivity."

Manufacturing parts with complex geometries and extremely tight tolerances leaves little margin for error, particularly in mission-critical environments where reliability is essential. By integrating tailored air gauging technology into its inspection processes, Reliance Precision has strengthened quality control while maintaining the efficiency required for high-precision production.

Air gauging has proven especially valuable when measuring complex internal features and tight tolerances that conventional methods struggle to verify consistently. Bowers Group and Reliance have developed bespoke air gauge solutions tailored to specific applications and geometries, ensuring the stability and repeatability needed for high-performance manufacturing. The capability of these systems is demonstrated by the ability to verify bores with tolerances as small as 0.007 mm.

Beyond inspection, the air gauge systems support manufacturing processes operating at the edge of current technological capability. Reliance Precision produces highly specialised electro-mechanical and opto-mechanical assemblies, precision gears, gearboxes and advanced life science technologies such as quadrupole mass filters used in mass spectrometry. Many of these products demand exceptionally high levels of accuracy, placing

significant pressure on CNC machinery, cutting tools, and measurement systems alike.

Before implementing the air gauging solutions, Reliance faced challenges around measurement stability and capability, particularly when inspecting difficult geometries. The introduction of Bowers equipment improved reliability, increased pass rates, and reduced subjectivity within the inspection process.

The systems have also been adopted quickly across multiple departments due to their ease of use and intuitive operation.

Bowers Group
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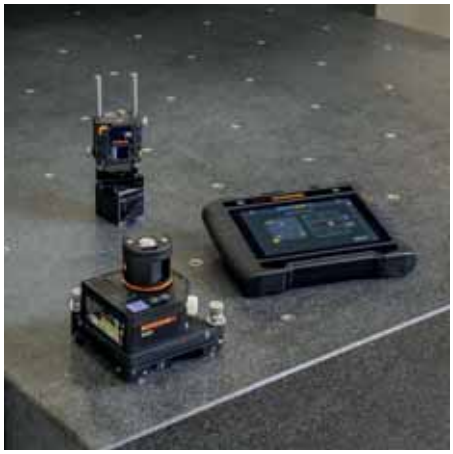
Renishaw broadens geometric measurement capabilities for its XK20 alignment laser system

Renishaw has extended the capabilities of its XK20 alignment laser by introducing flatness and level measurement functionality to its CARTO XK20 app. This gives users additional tools to measure and adjust geometric errors during machine build and alignment, adding to the XK20 alignment laser's existing measurement capabilities, which include straightness, parallelism and squareness.

The new release of the CARTO XK20 app enables users to measure surface flatness and machine level, providing deeper insight into overall machine accuracy. These measurements are critical parameters in ensuring the performance and longevity of machine tools and stages, particularly in applications where precision and repeatability are essential.

"The addition of flatness and level measurement in the CARTO XK20 app is a valuable enhancement for our customers," says



James Meaden, XK20 product expert at Renishaw. "It allows users to measure a broader range of geometric features with a single system, reducing the need for multiple tools and improving efficiency."

Designed for ease-of-use, the CARTO XK20 app guides users through the measurement process and presents clear, actionable results. This latest release reflects Renishaw's ongoing commitment to supporting customers with tools that simplify machine calibration and help improve productivity.

By extending the functionality of the XK20 alignment laser system, Renishaw allows customers to gain a more complete understanding of their machine geometry and helps them maintain optimal performance with confidence.

The updated CARTO XK20 app is available now on the Google Play Store. For more information, visit ***www.renishaw.com/xk20***

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Advanced metrology solutions enable Pentaxia to eliminate concessions and reduce production time by 50 percent

Advanced tooling and composite components manufacturer Pentaxia has transformed how it approaches the machining of complex components after introducing MSP's PerfectPart suite of CNC metrology products into its process.

This introduction generated impressive results for one project alone, reducing production time for a set of parts from 40 to 20 hours and eliminating a 100 percent concession rate, with 50 sets delivered without a single part requiring rework.

MSP PerfectPart was initially introduced during a challenging project involving the machining of composite components made from multiple materials, where variability and distortion made accurate setup difficult using conventional methods.

Previously, Pentaxia had relied on a manual setup process that required significant decision-making, along with manually shimming and clocking features on components, often taking multiple shifts to set up a single part.The company also lacked visibility of machine performance, meaning any issues were only identified after machining had taken place.

Determined to make the project a success, Pentaxia invested in a new CMS machine and introduced MSP's PerfectPart suite of products to address problems at different stages of the CNC machining process. This included NC-Checker for assessing CNC machine performance and NC-PartLocator for automating the part alignment process.

NC-Checker has proven so valuable at identifying machine issues that no part is machined unless the machine has first been assessed using the software, even if that means running it multiple times a day. Likewise, NC-PartLocator has transformed Pentaxia's part setup routine and removed many of the stressful decisions.

This faster setup procedure has reduced production time per set of parts by 50 percent, from 40 hours to 20 hours. The removal of manual error, combined with NC-Checker's machine performance assessment, has also enabled Pentaxia to eliminate concessions entirely.

While the technology was initially introduced as a 'leap of faith' to support a specific contract, its impact has extended far beyond the original requirement, influencing a broader machining strategy and fostering a more confident, controlled shopfloor culture.

Lucian Lazar, lead technical engineer at Pentaxia says: "At the end of the day, it is the natural progression for CNC manufacturing. We used to machine parts by hand, then 5-axis CNC machines were created. This is the logical next step. People don't need to be setting up parts by hand anymore when MSP can do it automatically."

MSP Ltd Tel: 01665 608193
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Optimax AURA: The first system to identify, analyse and measure defects in precision engineered components

The Optimax AURA K4D is the first instrument of its kind to integrate two leading technologies into a single, automated platform: the Kitov CORE+ and the 4D InSpec Surface Gauge.

Identify, characterise and measure

The AURA K4D's defining USP lies in its ability to identify, characterise and measure within a single automated closed-loop process, a world-first for an instrument of its kind. Once the system flags a flaw, it characterises it against prescribed tolerances. Where quantification is required, the system automatically switches to the optical precision head without operator intervention, eliminating the risk of subjective judgment.

In traditional precision manufacturing, operators often move parts manually between a visual inspection station and a metrology lab. The AURA K4D eliminates these bottlenecks as both functions now happen in one seamless, automated workflow, removing the "dead time" that slows production and introduces human error.

The Brain and Body: Kitov CORE+

The Kitov CORE+ serves as the AURA K4D's brain and body. Featuring a high-speed, 6-degree robotic arm and a rotating table, it can manipulate and inspect complex geometries up to 800 mm in diameter and 40 kg in weight. Using CAD2SCAN software, the system automatically generates inspection plans directly from CAD files or through deep learning. By combining traditional 2D and 3D machine vision with Artificial Intelligence and Deep Learning (AI/DL), the AURA K4D identifies defects that standard sensors frequently overlook, including pits and scratches, nicks and dings and machine marks and burrs.

The precision head: 4D InSpec surface gauge

Within the AURA K4D environment, the renowned 4D InSpec becomes a robotically guided precision instrument. Using dynamic interferometry, it captures all phase data in a single snapshot in milliseconds, delivering instantaneous, non-contact 3D surface measurement with micrometre-level resolution.

Unlike Structured Light systems, which are vulnerable to shop-floor vibrations, the 4D InSpec is immune to environmental noise, delivering lab-quality data directly on the production line. Whether measuring edge breaks, radii, or scratch depth, every data point is presented as a clear, colour-coded topographical map.

The measurable depth range runs from 5 µm up to 2.5 mm, 9 mm on the XL Module, with a vertical resolution of 2 µm to 2.5 µm and a field of view of 7.7 mm x 7.7 mm, capturing 60 square mms in a single snapshot in under one second. Critically, the system records the exact position of every defect, allowing rework teams to locate and address issues with zero ambiguity after the part leaves the cell.

Critically, the system records the precise coordinates of every identified defect, enabling rework teams to locate and address issues with complete accuracy once the part has left the inspection cell.

Beyond the lab: Eliminating the measurement bottleneck

For high-value sectors like automotive, medical device manufacturing and power generation, the implications are profound. The AURA K4D provides a digital, non-contact measurement in seconds and it saves hundreds of man-hours while delivering a repeatable, digital data trail for quality audit trails. From inspecting drive train components, orthopaedic implants, or fasteners to precision manifolds, the AURA K4D ensures that quality control is no longer a bottleneck, but a competitive advantage. Distributed in the UK and Ireland by Optimax Imaging and Inspection, the AURA K4D is ready to redefine your precision standards.

Optimax
Tel: 01858 436940
www.optimaxonline.com

Taking the uncertainty out of precision surface finishing

For subcontract manufacturers, achieving consistent quality is rarely just about the machining process itself. Increasingly, attention is turning to what happens after machining - particularly deburring, edge breaking and surface finishing, where manual processes can introduce variation, consume valuable production time and make repeatability difficult to achieve.

TextureJet is addressing this challenge with Electrochemical Jet Machining (ECJM), a non-contact technology that removes material using a precisely controlled jet of electrolyte and electrical current. Unlike conventional mechanical finishing methods, there is no cutting tool physically contacting the component, no heat-affected zone and no abrasive media involved.

The result is a controlled process that can remove unwanted material from complex components while maintaining the integrity of the surrounding surface.

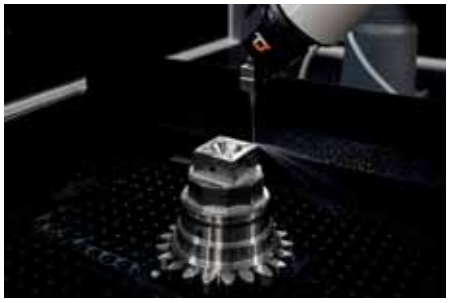
For subcontractors, this can have particular relevance where parts are produced in high-value materials or where increasingly demanding customers require consistent, repeatable results from batch to batch.

A different approach to deburring

Deburring remains one of the most common finishing operations in manufacturing, but it can also be one of the most difficult to standardise. Manual brushing, for example, relies heavily on operator technique, while mechanical processes can struggle to access complex geometries, cross-holes and difficult-to-reach features.

ECJM works differently. A focused jet is directed at the area requiring treatment, with the combination of electrolyte and electrical current removing material through an electrochemical reaction. Because the process is non-contact and athermal, it can be used to remove burrs and shape edges without introducing mechanical stresses or heat into the component.

The technology can also be used for programmable edge shaping and rounding, surface preparation, roughening, polishing and coating removal. This flexibility means the same underlying technology can address multiple



stages of surface processing, potentially reducing the need for separate processes and making it easier for manufacturers to develop a consistent approach across different components.

Putting process control at the centre

Technology alone, however, is only part of the challenge. For modern subcontract manufacturers, the ability to control, repeat and document a process is increasingly important. This is where TextureJet's software-led approach comes in.

Its STAT® platform provides digital control of the ECJM process, allowing machining parameters to be defined and then stored and recalled for repeat production. Rather than relying on an operator to reproduce a process manually, the required parameters can be digitally controlled and consistently executed.

For subcontractors producing multiple components for different customers, this provides a practical way to retain process knowledge and reproduce proven results. It also creates a foundation for further automation and optimisation as production requirements evolve.

The approach can be applied across TextureJet's range of intelligent electrochemical jet machining systems. ECJM technology can also be integrated with robotic automation, opening up opportunities for manufacturers looking to automate repetitive finishing operations without changing the underlying process.

From finishing operation to controlled manufacturing process

As manufacturers face continuing pressure to improve productivity while maintaining quality, processes that have traditionally been treated as secondary operations are coming under greater scrutiny.

For subcontractors in particular, consistency can be a competitive advantage. A finishing process that delivers the same result across operators, shifts and production batches can help reduce variability, minimise rework and provide greater confidence when manufacturing demanding components.

TextureJet's approach is therefore about more than replacing a deburring brush. By combining electrochemical processing with digital process control, the aim is to make precision surface finishing a more predictable, programmable and repeatable part of the manufacturing process.

For subcontract manufacturers looking to increase automation, improve consistency or take greater control over previously manual finishing operations, that shift could offer a new way to unlock productivity, while retaining the precision and flexibility needed for increasingly complex components.

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Leading medical device manufacturer, Enztec turns to real-time machine monitoring to drive factory efficiency

New Zealand orthopaedic instrument manufacturer uses FourJaw to replace spreadsheet reporting with real-time machine data, increasing average CNC uptime from 45 percent to 58 percent

FourJaw Manufacturing Analytics, the UK-based manufacturing technology company, is helping global manufacturers unlock hidden production capacity after supporting New Zealand orthopaedic instrument manufacturer Enztec to increase CNC uptime across its factory.

Enztec, based in Christchurch, designs and manufactures orthopaedic instruments for hip, knee and spine procedures, supplying leading global implant companies as well as producing its own in-house designed product lines. The business operates around 20 CNC machines across two shifts, including mills, lathes and EDM wire-cut machines.

Before FourJaw, Enztec relied on spreadsheet-based reporting to monitor machine utilisation and downtime. While this provided some visibility, the data was not trusted enough to support confident decision-making at leadership level. The business lacked a consistent view of true capacity by machine, shift and product family, making it difficult to separate real production losses from reporting noise.

By installing FourJaw, Enztec has established a single source of operational truth across its CNC operations. The system gives the team real-time visibility of machine uptime, utilisation, downtime reasons and shift performance, enabling production and leadership teams to identify where capacity is being lost and where improvement work will have the greatest impact.

The rollout began with a four-week pilot across five representative machines, including high-value pallet-loaded 5-axis machining centres. Operators used tablets at each machine to log downtime reasons through a simple two-click workflow, while automatic labelling was introduced for recurring events such as breaks and selected setup activities.

Following the pilot, Enztec deployed FourJaw across every CNC machine in the factory within three months. FourJaw is now installed as standard on every new CNC machine commissioned by Enztec.

Since introducing FourJaw, Enztec has increased average machine uptime from 45 percent at installation to 58 percent, with recent performance regularly exceeding 60 percent. Its best-performing machines have reached around 80 percent utilisation, while key Matsuura MX330 APC10 pallet-loaded 5-axis machining centres have achieved weekly utilisation in the high 80s to high 90s, including one week at 97 percent.

FourJaw has also helped Enztec identify setup and inspection as major causes of lost production time. On key product families, these categories previously accounted for around 27 percent of recorded downtime. Following improvement activity informed by FourJaw data, setup time now accounts for around 15 percent of downtime.

Laura Hill, COO at Enztec, says: “FourJaw gave Enztec a trusted view of machine performance, helping the team move from assumption to action. We’ve seen uptime go from 45 percent at the time FourJaw was installed to an average of 58 percent since and we are now regularly achieving more than 60 percent, which has had a massive impact on our production capacity, enabling us to deliver products to our customers faster.”

Chris Iveson, CEO at FourJaw Manufacturing Analytics, states: “Enztec is a brilliant example of how UK manufacturing technology is helping manufacturers around the world improve productivity using the assets they already have. By replacing manual reporting and assumptions with objective, real-time production data, Enztec has created a trusted view of factory performance that supports better decisions on the shop floor and at leadership level.”

Enztec is now also using FourJaw’s Planning feature to monitor machine utilisation during overtime shifts and lights-out production, giving the business clearer visibility of unattended machining and extended running periods.

About Enztec

Enztec is a Christchurch, New Zealand-based designer and manufacturer of precision orthopaedic surgical instruments for hip, knee and spine procedures. The company supplies global orthopaedic implant companies and has worked solely in orthopaedic instrumentation for over 30 years.

About FourJaw

Founded in 2020 as a spinout from the University of Sheffield’s Advanced Manufacturing Research Centre, FourJaw is a UK-based SaaS company helping manufacturers enhance productivity, reduce energy usage and grow profitably. FourJaw’s plug-and-play production monitoring platform integrates with machines of any age or brand. It is trusted by manufacturers globally in subsectors such as aerospace, automotive, energy and food production.

FourJaw backers and investors include British Business Bank, Northern Powerhouse Investment Fund, Mercia Ventures and SFC Capital.

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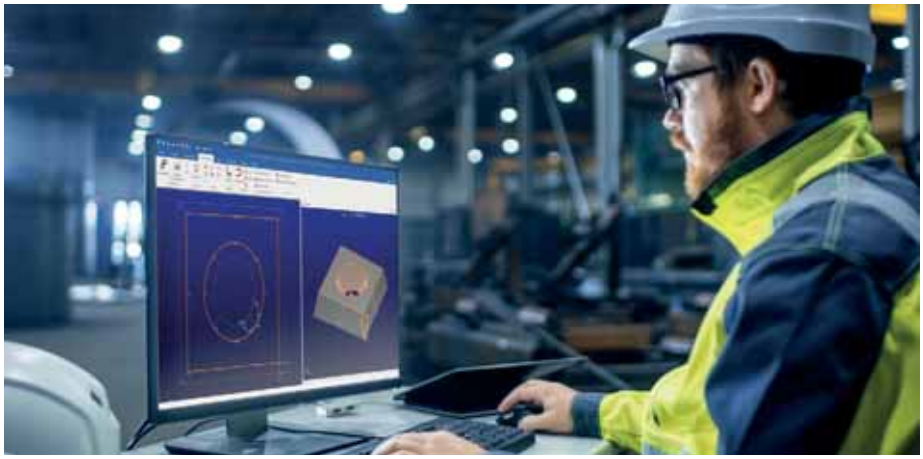
Lantek introduces two new features in Lantek Expert

Lantek, a global leader in software solutions for the sheet metal industry, has introduced two new features in version 45 of its Lantek Expert CADCAM software, aimed at simplifying the design of components with complex edge geometries and improving cutting efficiency.



The latest update to Lantek Expert introduces enhanced functionality for bevel machining in line with increasing demand for automation, flexible nesting and multi-angle processing.

The first innovation allows users to work with both standard bevels and 3D bevels on the same part from the drawing module. Previously, users had to choose between variables separately, which required simpler geometries. With this improved functionality, both bevel types can be combined within the same components, making it easier to design parts with more complex edges.

The second new feature is a shared cutting function for parts with Y bevels. This improves efficiency in Y-bevel cutting by reducing material consumption, waste and machining time. When a part with a Y-bevel is placed next to an existing component, the system will check whether both workpieces can be cut simultaneously. If possible, it will automatically adjust the distance between the parts so that both bevel edges are cut in a single operation. This new capability also extends to V joints.

Adam Ball, UK commercial director at Lantek, explains: "This new feature significantly simplifies component design. Users no longer have to choose between constant or variable bevels, but can use both strategies together, designing components with more complex edges. These enhancements are aligned with current market trends toward comprehensive automation, more flexible and reliable automatic nesting and advanced strategies for multi-angle machining.

"These two new features in Lantek Expert represent the way forward in automated, intelligent and connected manufacturing, an area in which Lantek continues to support companies in sheet metal fabrication."

Bevels are used to improve the durability of welds and increase structural strength by enlarging the contact area between two parts. In sheet metal fabrication, they eliminate the need for additional processing steps after cutting.

The new capabilities in Lantek Expert V45 reflect current developments in sheet metal manufacturing. With these additions, Lantek Expert continues expanding its CADCAM capabilities for CNC programming and complex cutting operations in sheet metal fabrication.

LANTEK partners with TECOI

Lantek has revealed its partnership with TECOI, a machinery manufacturer, to deliver a new robotic unloading and palletising system to improve manufacturing efficiency.

The new system is built on TECOI's CF modular cutting architecture for multi-head cutting processes and large-scale operations. Following cutting, a servo-automated crane equipped with liftable magnets transfers cut material to an intermediate zone, where robotic systems with adaptive gripping technology automatically collect and palletise parts according to Lantek's CADCAM instructions.

The intelligence behind this operation is managed through Lantek Expert, which organises parts based on geometry and orientation to ensure only identical parts with matching angles are stacked together. This ensures stability and full traceability throughout downstream logistics.

This solution enables palletising to take place while cutting operations continue uninterrupted, significantly reducing downtime and improving overall productivity, compared to other systems where part handling requires pauses in production.

Thanks to its collaborative robot-based architecture, additional units can be added to work in synchronisation, speeding up the unloading and palletising process without compromising precision or traceability. This flexibility allows the same technology to be adapted to both lower-demand facilities and high-throughput, large-scale operations.

For Lantek, this type of integration represents a real step forward in the development of connected, automated manufacturing environments and workshops, supporting the industry's transition towards smarter manufacturing.

Francisco Pérez, OEM channel director at Lantek, says: "The key factor here is that we don't just connect machines, we connect intelligence. This collaboration with TECOI enables the software to act as the brain of the process, instructing each robot on what to do at any given moment. It clearly demonstrates how digitalisation can optimise workshop performance without adding complexity."

This collaboration also forms part of the Sortec framework, a new project aimed at achieving full automation of production lines from sheet metal processing through to final palletising.

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Smarter investment, leaner production, stronger supply chains

Compare the market at EuroBLECH 2026
From 20th to 23rd October, the 28th EuroBLECH brings the international sheet metal working industry to Hanover. For subcontractors and precision fabricators weighing up their next investment, four days at the show reveal more of the market than any run of supplier visits.

Key technologies from around the world, side by side. At the upcoming EuroBLECH, visitors will meet leading manufacturers, specialist suppliers and technology providers from across the full sheet metal working value chain, with live machinery demonstrations, technical world premieres and hands-on product discovery offering a close-up view of the solutions shaping modern production.

Under the theme: "For a Stronger Future, Smart & Sustainable Production", EuroBLECH 2026 will focus on the technologies helping manufacturers improve productivity, reduce resource use, strengthen supply chains and make better investment decisions. Across 15 technology sectors and 8 exhibition halls, the exhibition will cover the full spectrum of sheet metal working technology, following a 2024 edition that welcomed 1,317 exhibitors and 38,946 visitors from 114 countries, with 81 percent of visitors involved in purchasing decisions.

From machinery and automation to tooling, forming, joining and surface technology, digital production and subcontracting, the halls cover every stage of the process chain. The show will showcase solutions from Adige, AIDA, Amada, ArcelorMittal, Bodor, Bystronic, EAGLE, Ermaksan, LVD, Motofil, MVD, Prima Power, Salvagnini, TRUMPF, Valk Welding, Voortman, Yamazaki Mazak and many other international suppliers.

"Manufacturers have more choices than ever, but the real challenge is understanding which solutions will deliver the greatest value for their operations," says Evelyn Warwick, exhibition director for EuroBLECH on behalf of RX.

"EuroBLECH 2026 brings the industry together so visitors can see solutions in action, compare approaches, speak directly with technical experts and make informed investment decisions based on their own production priorities."

More ways to discover, compare and connect

The new Innovation Zone|Advanced Manufacturing will spotlight technologies launched within the past 12 months, giving visitors a close-up view of some of the latest developments in machinery, automation, smart manufacturing, tooling innovation and digital production.

New specialist areas, including the Job Shop & Subcontractors Market, Tooling & Forming Solutions Spotlight and Laser, CNC & Cutting Solutions Spotlight, will help visitors quickly find subcontracting partners, tooling and forming expertise and laser, CNC and cutting technologies.

Visitors can also book new guided tours through the online ticket shop, with expert-led routes covering priority topics and sectors including "Smart Manufacturing and Resource-Efficient Production" and "Market Opportunities: Electronics, HVAC, Aerospace and Defence".

The EuroBLECH Awards and Award Trails recognise technical excellence in smart and sustainable sheet metal working, helping visitors discover outstanding innovations across the show floor.

On Friday 23rd October, careers day will give students, apprentices and young professionals free admission and a dedicated opportunity to explore career paths and meet hiring companies directly.

New expert-led sessions for 2026

For the first time, EuroBLECH 2026 will feature a dedicated conference-style programme on the NextGen Technology Stage, with access to all sessions included in the exhibition ticket. Sessions cover the technologies and pressures reshaping sheet metal working, from AI, automation and smart manufacturing to sustainability, energy efficiency, circular production and workforce development. Tickets, exhibitor directory and conference agenda are available at ***www.euroblech.com***

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Salvagnini at EuroBLECH 2026

At EuroBLECH 2026, Salvagnini is presenting the Flexible Smart Line S4+P4 and the Flexible Smart Job Shop: two complementary production architectures that coordinate technologies, automation and software according to different logics, making production more adaptable, autonomous and predictable.

Flexible Smart Line S4+P4

Born from the integration of an S4 punching-shearing machine and a P4 panel bender, the Flexible Smart Line automatically produces different parts in sequence, without WIP, manual setup or sheet metal handling by operators. The MD single sheet store-tower feeds the S4, while the MCU Cartesian device unloads, stacks and transfers the parts, feeds the P4 and balances the various operations, acting as a buffer when necessary.

The most relevant new feature is FLOW, the MOM software developed by Salvagnini to manage the line. FLOW connects devices, coordinates the production behavior and is used to select the most suitable strategy, job by job: Inline, Stack and Load in the standard Line configuration; Smart Buffering and Smart Reordering in the optional Smartline level. In the office, FLOW-Office makes available a digital twin of the system, used to compare job queues and production scenarios before launching production.

The S4 punching machine maintains distinctive Salvagnini architecture with the multi-press head with die-structure and integrated shear. It can house up to 117 thick turret tools, always available over the whole sheet and is equipped with advanced hybrid actuators that reduce average consumption by up to 20 percent compared to electric actuators. The shear, with two independent and orthogonal blades, separates the parts without eroding the material while minimising scrap.

The line is completed with a P4-3126 panel bender, with maximum bending height of 260 mm. The universal bending tools and ABA automatic blankholder eliminate manual

retooling. The configuration on display further extends the application range.

Flexible Smart Job Shop

The Flexible Smart Job Shop combines stand-alone technologies that can work independently or collaborate on convergent productions. The system consists of a L3.G4 laser in a fully automated configuration with an LTWS store-tower and MCU automatic sorting device, internal logistics with autonomous mobile robots and P-Robot, integrating a P2-2520HG panel bender, robot and B3.ATA press brake. The STREAM, STORE, NEXUS, MOVE and RVS software coordinate programming, nesting, store management, sorting and cell autonomy.

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Hall 11 - Stand D94

MSS Group at EuroBLECH

MSS Group Ltd is looking forward to the forthcoming EuroBLECH 2026 show as its most important European exhibition event this year. The company will showcase the following machine exhibits on its generous 85 m² stand:

MSS NitroCube ECO:- Nitrogen Generation System.

The UK & US leader in on-site, high pressure nitrogen generation system for laser cutting applications. The MSS NitroCubeTM ECO combines the highest quality components housed in our unique cube enclosure with sophisticated MSS intelligent monitoring and controls. All NitroCube ECO systems provide 300 bar nitrogen and 99.5- 99.999 percent gas purity as standard, a huge range of flow rates and storage capacities are available to suit most applications. The new MSS Nitrocube ECO offers class leading efficiency backed with MSS unrivalled pedigree and ove 22 years' experience of supplying high purity, high-quality nitrogen for laser cutting applications.

NEW MSS Nitro+

Designed to be operated together with NitroCube ECO or other nitrogen supplies, the MSS Nitro+ offers super high nitrogen purities of up to 99.9999 percent (Grade 6.0) at incredible efficiency rates, typically 50 percent lower than its standard generations systems. The MSS Nitro+ delivers extremely low cost, high purity nitrogen at flow rates to match its NitroCube ECO range. When combined with the NitroCube ECO system, nitrogen production rates are as low as €0.05/m3, using this system with other nitrogen supplies can boost supply flow and purity by up to 50 percent.

MSS Combimix

This innovative product features the well proven MSS NitrO2 laser gas mixer system and MSS OxyBoost liquid oxygen pressure booster conveniently combined in a single compact package.

MSS NitrO2 is the well proven gas mixing system for variable nitrogen and oxygen laser cutting gas supply; designed for high flow, high pressure and controlled adjustable gas mix content requirements. The system allows for various oxygen content percentage in order to optimise laser cutting speed and edge quality. The system allows for increased fibre laser cutting speeds and reduced dross/burr compared to high purity nitrogen cutting.

MSS Oxyboost has been designed to boost liquid oxygen supply pressures for laser cutting operations where higher-pressure oxygen gas supply is needed for use with cutting gas mixer systems. This allows the use of existing liquid gas installations avoiding expensive upgrades and inconvenient cylinder oxygen cylinder pack use.

MSS Nitr02: Innovative gas mixing system

MSS Nitr02 gas mixer system has been specially developed by MSS for use with high power fibre laser cutting systems. The Nitr02 is the only system available on the market today that allows on-line variable gas mixing technology with fully integrated CNC controls to allow the laser operator to select the precise nitrogen/oxygen gas mix required directly from the laser HMI control. Extremely compact, the system can be installed with minimum floor space without the need for any large storage tanks, simply connect existing nitrogen and oxygen lines into this unit and you will have the same outputs plus a variable 'mixed gas option' to optimise your laser cutting quality. This clever technology allows significant increases in fibre laser cutting speed and quality and give higher quality cutting results on lower quality plate material.

Oxyboost: Liquid Oxygen line pressure boost system for laser gas mixing

MSS Oxyboost is an important development for laser users wishing to use their existing liquid oxygen supply for laser gas mixing applications. A standard liquid oxygen gas line supply doesn't provide adequate pressure for laser gas mixing systems to function correctly so MSS have developed this new system to overcome this issue. MSS Oxyboost may be installed on all liquid oxygen lines in conjunction with the MSS NitrO2 gas mixing unit for a complete package solution to suit all laser operations.

MSS Flowbox: Gas use measuring & monitoring

MSS Flowbox measures and monitors high pressure Nitrogen gas flow into the laser cutting system allowing the operator to exactly measure the amount of gas used on a daily basis and even scrutinise the volume of gas used per product/sheet being cut to understand overhead costs more accurately. The Flowbox can also be used for leak detection and may be installed on any laser cutting system.

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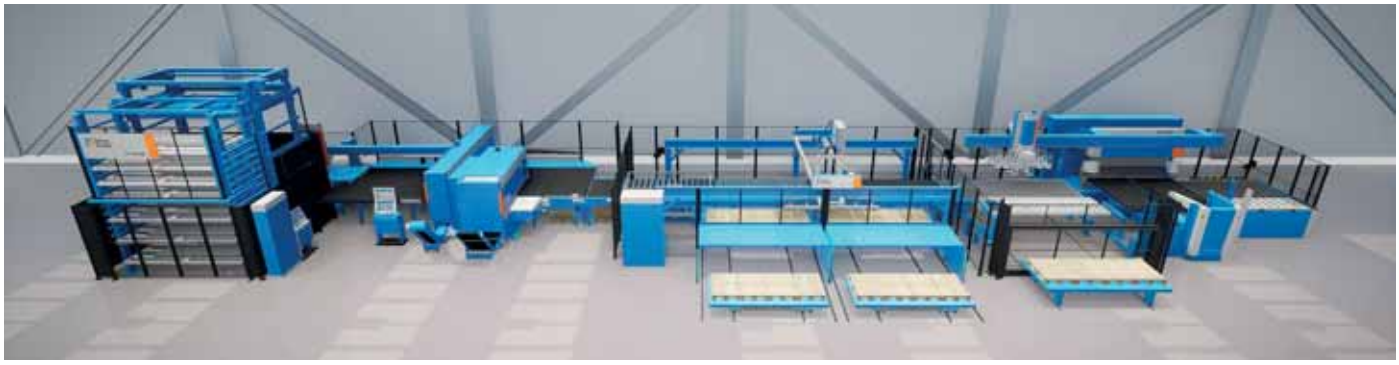
Hall 12 - Stand B123



Full integration, no compromise

At EuroBLECH 2026, Prima Power will present two new flexible manufacturing systems showcasing its latest developments in integrated sheet metal production, including world premieres in automation, bending and software, reinforcing its strategy of Evolve by integration.

The Group will present two flexible manufacturing systems combining multiple technologies, automation and digital solutions for dynamic sheet metal production environments, where productivity, adaptability and operational continuity are key. The lines will feature several key innovations and first-time showcases, highlighting scalable solutions that evolve with market needs. Different automation architectures, from material flow to unloading and transfer, will demonstrate how systems can be configured for a wide range of strategies, from small batches to unattended high-volume production.

The first manufacturing line will focus on laser processing integrated with a new bending solution, as well as advanced automation and material flow systems, featuring three world premieres. Among them, Prima Power will preview a new concept in bending technology designed to make panel bending more accessible while preserving the performance, reliability and integration capabilities that define Prima Power's approach to manufacturing. The launch builds on more than 40 years of panel bending expertise developed at Prima Power's Product Unit Bending in Cologna Veneta, Italy. The manufacturing line will also introduce new approaches to automation and material handling, together with advanced solutions for autonomous material transfer and logistics.

Its second manufacturing line will demonstrate a highly automated production flow integrating punching, shearing, buffering and bending into a single, connected process. Designed to streamline operations from raw material to finished components, the system highlights how integrated solutions can minimise manual handling, improve efficiency and ensure consistent output quality. New features and enhancements further support extended autonomous operation, improving process stability and enabling longer periods of unattended production. Advanced material handling, intelligent buffering and optimised process coordination contribute to a more controlled and reliable production flow, helping manufacturers maximise machine utilisation while maintaining flexibility across different production scenarios, from high-mix production to continuous, high-volume output.

Software will play a central role in the exhibition. Prima Power will present its All-in-One software platform, a unified environment designed to manage and control the entire production process through the integrated modules for all-day work steps Plan, Program, Run, Control and Trust. Particular attention will be given to the Trust module, with the introduction of a new AI-driven predictive maintenance service that analyses machine data to anticipate issues, enhancing service responsiveness with proactive alerts to technicians and reducing unplanned downtime through preventive intervention.

Prima Power's industrial DNA is rooted in the integration of two pioneering companies, Prima Industrie (Italy, 1977) and Finn-Power (Finland, 1969). Since their integration in 2008, the Group has built on a shared legacy of customer focus, a fully integrated technological approach and a strong drive to progress automation in sheet metal manufacturing. With its EuroBLECH 2026 showcase, Prima Power demonstrates how this legacy continues to evolve, raising the technological bar while staying true to what matters most to customers: higher productivity, greater manufacturing agility, integrated workflows, full production visibility and control and a future-ready investment.

Prima Power provides advanced integrated solutions for sheet metal manufacturing, helping businesses of all sizes enhance productivity and profitability. Its offering combines high-performance machines, automation, software and services to respond to increasingly demanding production challenges and support future growth, in line with its "Evolve by integration" strategy.

Prima Power operates with nearly 60 years of expertise, stemming from the strategic integration of Prima Industrie (1977) and Finn-Power (1969), two pioneering companies both renowned for their excellence in integrating innovative solutions into customers' processes. This unique combination has enabled Prima Power to deliver one of the most integrated technology offers in the sector.

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Stands: 12-B146, 12-B130,12-B174

LVD powers bespoke vehicles

A new LVD Puma laser and two new Easy-Form press brakes are boosting capacity and capability at an Irish manufacturer of specialist vehicles

Based in Athenry, in County Galway, Quinn Vehicles is a family business specialising in high-specification bespoke vehicles, in particular, emergency response vehicles, specialist refrigerated trucks and mobile cold storage units.

For example, it manufactures ambulances for services across the UK, the USA, Australia and the Middle East including customers such as the London Ambulance Service.

Founded over 200 years ago by a blacksmith, John Quinn, the company is today run by the fifth generation of his descendants, brothers Michael and Seamus Quinn. The company today is at the forefront of technology, employing advanced manufacturing equipment and is a specialist in the use of composite materials with everything designed, developed and manufactured in-house.

As Michael Quinn explains: "Everything is based around composites. That is our USP and it allows us to offer a superior product. A composite-based ambulance offers significant advantages over traditional metal-based vehicles. Not only is it a more modern, lighter vehicle, but it also offers significant improvements in temperature control and patient comfort.

"A lot of our ambulances are destined for customers in hot climates, such as parts of the USA, Australia and the Middle East. A traditional ambulance is very difficult and expensive to keep cool in these conditions, whereas ours is effectively an insulated box so it is much more comfortable for the patient."

There is still a lot of metal in a composite ambulance though.

Michael Quinn states: "It's a combination of composites and sheet metal and sheet metal is a huge part of our business. A lot of components, access doors, frames, brackets and so on are sheet metal and that's why we have upgraded our sheet metal manufacturing capacity with the new laser and press brakes from LVD."

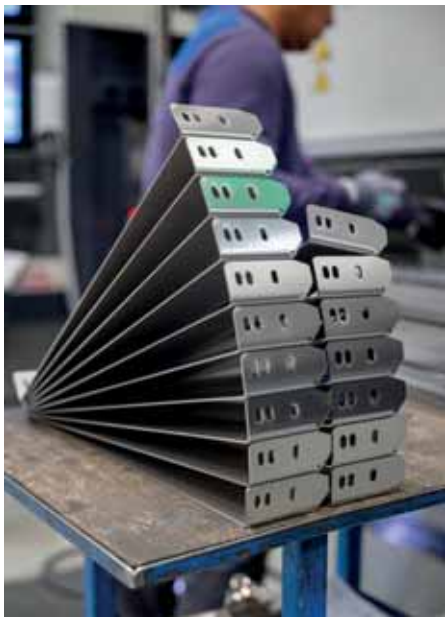
He says that the nature of the business means that the emphasis is on high precision, low to medium volume, custom fabrication rather than assembly-line products.

Michael Quinn continues: "It's low volume, high repeatability. Our run rate is seven ambulances a week, two trucks a week and three cold stores a week. We aren't like a big trailer manufacturer that might be producing 500 reefers, refrigerated trucks, a day. We are a much nimbler business and the LVD machines and software allow us to turn products around quickly for our customers. We can turn round a development project for a customer in 10 to 12 weeks rather than them having to wait six months and that is thanks to the LVD CADMAN and SDI software.

"What we make is a combination of newly designed elements and repeating elements. Ambulances may all look roughly similar, but in reality, no two regions' ambulances are the same. So, we take a basic standard design and adjust that to suit the customer's needs."

All the sheet metal parts are designed and built up in SOLIDWORKS. They are then imported to the CADMAN software, flattened and sent to the machines.

Michael Quinn says: "I think the phrase I've seen used by LVD is 'Art to Part'. Well, it really is. From the design concept to flat pattern to the folded part. We have to design, maybe nine or ten parts a day and I can guarantee that nine



would be spot on and the tenth might need a little tweak. It is very good and it's not just a sales pitch, it actually works. Because programming is so much faster, we can get through the work much faster."

The new machine investments were on one hand about increasing capacity, but in the case of the press brakes it was also about increased accuracy and an element of deskilling. The LVD Puma 3015 6 kW fibre laser, with a 3 m by 1.5 m sheet capacity, replaced an older LVD Lynx machine.

"We changed the laser primarily because of capacity," explains Michael Quinn. "As our volume of work grew the Lynx just couldn't provide the capacity we needed. We work a four-day, 10-hour a day compressed week from Monday to Thursday. On top of that we were having to run the laser on late shifts and all day Friday. Sometimes we had to run it on Saturday too just to meet demand. Even if you are only running one machine, you still need a supervisor, the lights on and the compressor running. It is just inefficient.

"We ran the numbers and worked out it was more cost-effective for us to buy a faster machine with more capacity. The new Puma is now running about six or seven hours a day. It's not running flat out four days a week, so we have capacity to ramp up as the business grows. The new laser has given us an extra 30 percent capacity."

The two new LVD Easy Form press brakes also replaced older machines.

"There were two reasons why we purchased the new press brakes," adds Michael Quinn. "The first was that the CADMAN software really removes an element of skill from the job and we have really struggled to find skilled press brake operators.

"As we got busier and busier we also needed to modernise the equipment to keep pace with demand. The new machines are much faster than the old ones, particularly with the LaserSafe optical guarding system and they are so accurate that the amount of rework required is much lower."

He adds that the machine controls are very intuitive, allowing the operators to be able to be up and running with the machines after only a couple of hours of training. The press brakes also have a couple of refinements. Hydraulic clamping speeds up tool changeover between jobs and a sheet follower axis on one of the machines improves part quality on large, thin components.

Michael Quinn explains that the sheet followers reduce the skill required to fold large parts. The blank for a typical aluminium panel can be just 2 or 3 mm thick, but 2 m long and 700 mm wide. If not handled correctly it can buckle during bending and get damaged during forming: "If the operator is not skilful enough you can get corner dents where they are not following the part. The sheet follower axis supports the part through the bend, allowing one person to handle it more easily and helping to prevent damage."

The company's relationship with LVD has been close and enduring. Michael Quinn says that they bought their first LVD machine in 2006 and that he has been a firm supporter of their equipment ever since. "When we had an idea that we were going to change the laser and the two press brakes, we looked at the equipment and it all made sense for us. There was no hard sell, the LVD equipment sells itself."

The fact that, like Quinn Vehicles, LVD is also a family-business also strikes a chord. Michael Quinn concludes: "The approach is relaxed and the company still feels very family-oriented, which appeals to me. As a fifth-generation family business those values matter to us. That shared family ethos is one reason our relationship with LVD works so well."

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Ultimate guide to cutting aluminum with abrasive waterjet

Aluminum is one of the most widely used metals in modern manufacturing, appearing across aerospace, marine, transportation, energy and general fabrication applications. Despite its popularity, aluminum is also one of the easiest materials to misapply cutting technology. Its softness, thermal sensitivity and broad range of alloys mean that selecting the wrong cutting process can lead to warped parts, inconsistent edges, excess secondary work and higher total cost.

At OMAX, this challenge shows up daily across job shops, production floors and high-mix manufacturing environments. Abrasive waterjet cutting is often the best solution for aluminum when material integrity, edge quality and thickness flexibility matter. The right cutting process depends on the application and on how the part will be used after it is cut.

This guide explains how aluminum behaves during cutting, where OMAX abrasive waterjet systems perform best, where thermal processes such as plasma cutting are the better fit, and how manufacturers can evaluate tradeoffs using application-driven criteria rather than assumptions. OMAX also provides additional background comparing waterjet to other cutting technologies for shops evaluating multiple processes.

Why aluminum requires a thoughtful cutting approach

Aluminum behaves very differently from steel. It conducts heat rapidly, melts at a lower temperature and is far more prone to distortion when exposed to localised thermal energy. These characteristics do not make aluminum difficult to cut, but they do make process selection critical.

Thermal cutting methods, including plasma and laser, introduce concentrated heat into the material. In some aluminum applications, that heat is acceptable and even beneficial. In others, it results in warped parts, loss of flatness, heat-affected zones that alter alloy properties, oxidised or hardened cut edges and additional secondary operations such as grinding or straightening.

OMAX abrasive waterjet cutting avoids these issues entirely. By cutting aluminum mechanically using a high-pressure stream of water mixed with abrasive, waterjet introduces no heat into the material. There is no heat-affected zone, no recast layer and no change to the aluminum's temper or mechanical properties. For many aluminum applications, especially those with tight tolerances or downstream processing requirements, this distinction directly affects part performance and repeatability.

Understanding aluminum alloys and manufacturing variability

One reason aluminum can be challenging to process consistently is the wide variation between alloys. Softer alloys such as 5052 and 1100 behave very differently from high-strength, heat-treated alloys like 6061-T6 or 7075.

With thermal cutting processes, changes in alloy composition often require adjustments to parameters, consumables, or cutting strategy. Abrasive waterjet cutting behaves consistently across nearly all aluminum grades. While cutting speed may vary depending on hardness and thickness, the underlying process remains stable and predictable.

For shops that regularly process multiple aluminum alloys in a single workflow, this consistency reduces setup time, minimises scrap risk and helps maintain repeatable part quality without constant parameter changes.

What makes abrasive waterjet ideal for aluminum

Cold cutting and preservation of material properties

Abrasive waterjet cutting is a true cold cutting process. Heat-treated aluminum alloys retain their mechanical properties because no thermal energy is introduced during cutting. This is especially important in aerospace, marine and structural applications where predictable strength, fatigue resistance and weld behaviour matter.

Cold cutting also minimises residual stress, thin aluminum sheets remain flat and thick aluminum plates maintain dimensional stability throughout the cut, even on longer or more complex toolpaths.

Edge quality without secondary processing

Waterjet-cut aluminum edges are smooth, square and burr-free. In many applications, parts come off the table ready for assembly, anodising or welding without the need for

grinding, sanding or manual deburring. Although abrasive waterjet cutting eliminating secondary edge-finishing operations often reduces total job time and labour cost. For many shops, this is where waterjet delivers its biggest economic advantage.

Thickness capability without process changes

OMAX abrasive waterjet systems routinely cut aluminum from thin sheet to very thick plate, often exceeding 12 inches in thickness. Material thickness affects cutting speed but does not change feasibility or quality.

Unlike thermal processes, waterjet cutting does not require changing gases or cutting strategies as thickness increases. This allows a single machine to support a wide range of aluminum work without reconfiguration, making waterjet particularly well suited to high-mix and job shop environments.

Complex geometry and precision features

Waterjet cutting excels at producing complex geometries, tight inside radii and intricate internal features. Because no heat is introduced, dimensional accuracy is maintained even in thin webs and narrow profiles that would otherwise be prone to distortion. 5-axis waterjet systems can also cut bevels, chamfers, countersinks and weld-prep features directly, reducing or eliminating secondary machining operations.

Mixed materials and stacked cutting

One of the most significant advantages of abrasive waterjet cutting is its ability to process mixed materials in a single operation. Aluminum can be cut alongside stainless steel, plastics, rubber, composites, laminates and other materials without requiring tooling change or compromising cut quality.

This capability is especially valuable in aerospace, marine and energy applications where aluminum is often part of a multi-material assembly. Thermal cutting processes generally cannot accommodate these combinations without splitting operations and increasing handling time.

Common aluminum applications for abrasive waterjet

OMAX abrasive waterjet systems are commonly used for aerospace brackets, marine structures, thick aluminum tooling plates, composite-aluminum hybrid assemblies and weld preparation where distortion must be avoided. In these applications, eliminating heat input often outweighs the advantages of faster thermal cutting methods.

Frequently asked questions:

Does waterjet cutting affect aluminum temper or strength?

No, abrasive waterjet cutting introduces no heat, so the mechanical and metallurgical properties of aluminum alloys remain unchanged.

Can a waterjet cut bevelled or angled aluminum edges?

Yes, 5-axis waterjet systems can cut bevels, chamfers and weld-prep features directly into aluminum parts.

Is abrasive waterjet suitable for production environments?

Abrasive waterjet excels in low-to-medium volume production, high-mix operations and applications where accuracy, flexibility and material integrity matter more than raw cutting speed.

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Flow's NX Pro redefines waterjet cutting

Fully automated abrasive recycling cuts single-use garnet consumption by half

Flow Europe GmbH has introduced the NX Pro Waterjet Cutting System to the European market further reinforcing its position as a technology leader. Designed with advanced technologies new to the market, it delivers capabilities that improve efficiency, optimise operations and reduce overall costs.

The integrated abrasive recycling system reduces garnet consumption by up to 50 percent and up to 75 percent in comparison to the industry-standard 4,000 bar cutting process. This lowers disposal requirements, operating expenses and cost per part at the same time.

Productivity and ease of use are further enhanced through an energy-efficient pump that auto-adapts to demand, the machine has a four-sided enclosure and an improved software suite.

Recycling and abrasive use

The NX Pro is the world's first waterjet system with fully automated abrasive recycling. Used abrasive is extracted from the catcher tank and separated through a proprietary filtration system. Reusable garnet is then mixed with new abrasive and fed to the cutting head.

Ethan Romanoff, director of high-pressure engineering at Shape Technologies Group, says: "The NX Pro system integrates patented technologies in a fully connected recycling process. Used abrasive is processed directly from the catcher tank and routed through an intelligent metering and control system that ensures consistent, high-performance recycled abrasive is available on demand. The precisely controlled recycled abrasive mixture is then delivered to a specialised cutting head powered by a new energy-optimising pump, delivering higher cutting performance, reduced waste and lower cost per inch."

The entire recycling process runs fully automatically during cutting operations and requires no manual user intervention. This increases system availability, improves process reliability and increases uptime. The new recycling system, based on exclusive Flow technology, operates with high energy efficiency, generating considerable cost savings compared to conventional waterjets working with single-use abrasive.

System technology and configurations

The NX Pro is equipped with adaptive NX pump technology and operates at working pressures of 6,500 or 4,150 bar. An integrated variable frequency drive adjusts power consumption based on demand, enabling significant energy savings.

A four-sided machine enclosure reduces noise and splash emissions while improving overall system safety. A mobile control console with a 24-inch touchscreen, together with FlowXpert Infinity CAD and new FlowCut NX software, enhances usability through optimised cutting paths, improved material utilisation, higher production rates and taper control using Dynamic Waterjet.

The NX Pro is available with work envelopes ranging from 2 m x 2 m up to 4 m x 4 m.

About Flow

With more than 50 years of experience and over 15,000 installed systems worldwide, Flow is a leader in the development, engineering and sales of ultra-high-pressure pumps and complete waterjet and abrasive waterjet cutting systems for processing a wide range of materials.

Headquartered in Darmstadt, Germany, Flow Europe GmbH is a wholly owned subsidiary of Flow International Corporation, USA and part of the Shape Technologies Group. The company maintains branch offices in the United Kingdom, Italy, Spain, France and the Czech Republic, supporting customers throughout Europe, the Middle East and Africa (EMEA). Flow Europe's technology and innovation centre is located near Lille, France.

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Waterjet technology gains momentum in defence manufacturing

Waterjet cutting technology is continuing to advance across modern manufacturing and its role in the defence sector is becoming increasingly significant, particularly as manufacturers face growing demands for precision, performance and material integrity.

Supporting high-integrity defence applications

Waterjet cutting uses a high-pressure stream of water, often combined with abrasive media, to deliver a flexible and highly accurate cold cutting process. Unlike thermal methods, this ensures that material properties remain unchanged, a critical factor in defence applications where structural integrity cannot be compromised.

For manufacturers involved in armoured vehicle production, this enables the precise cutting of thick steel plates without affecting ballistic performance. Maintaining protection against projectiles and shrapnel is essential and waterjet technology provides a reliable method to achieve this without introducing heat-affected zones.

Enabling advanced aerospace and defence systems

Beyond armoured vehicles, waterjet cutting is playing an increasingly important role in the production of components for drones, fighter aircraft and satellite systems where advanced materials such as composites and specialist alloys are used. These materials can be highly sensitive to heat, making traditional cutting methods risky. Waterjet technology eliminates this concern, reducing the likelihood of delamination, microcracks, or structural weaknesses.

Precision without risk in complex systems

In the development of advanced weapon systems, precision is everything. From control systems to sensors and other high-spec components, the absence of heat and sparks during waterjet cutting significantly reduces the risk of damage, not only to the material itself but also to surrounding parts.

For manufacturers operating in high-value, low-volume production environments, this level of control can help improve yield, reduce rework and support compliance with demanding defence specifications.

Flexibility for modern production environments

Another key advantage is versatility. A single waterjet system can process a wide range of materials, from metals to composites and plastics, without extensive tool changes. This flexibility aligns well with the evolving needs of defence manufacturing, where shorter production runs, rapid prototyping and agile supply chains are becoming the norm. The ability to switch between materials quickly and efficiently can provide a significant operational advantage.

Opportunity for UK manufacturers

Although the upcoming exhibitions are based in Europe, they offer valuable insight for UK businesses looking to stay competitive in a fast-moving global defence landscape. Visitors will have the opportunity to engage directly with waterjet specialists, explore real-world applications and discuss how the technology can be integrated into both new and existing production processes, whether the focus is on evaluating new materials or optimising current workflows.

Water Jet Sweden develops, manufactures and markets advanced solutions for waterjet cutting and provides a quality aftermarket offer with service and parts. Since 1993 it strives to be the first choice for customers worldwide who seek solutions in waterjet cutting of high quality and high technical content.

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Efficient sawing of cast aluminum billets

ST Extruded Products Group (STEP-G), part of the global Sankyo Tateyama Group, is one of the world's leading manufacturers of aluminium extrusion profiles and lightweight solutions.

The Hettstedt site operates an aluminum recycling foundry and supplies customers from sectors including automotive and rail vehicle construction, mechanical and plant engineering, the defence industry and various other fields with cast products. Around 70 employees work at the Hettstedt facility, where plant manager Oleg Hoffmann is responsible for local processes and operational excellence.

The challenge

At the Hettstedt plant, aluminum billets in various alloys, diameters and lengths are produced and then cut precisely to size. Any deviation in the sawing process results in additional work, scrap or increased energy consumption during subsequent homogenisation. "Sawing accuracy, saw cut quality and the productivity of the systems are key features of our process," emphasises Oleg Hoffmann.

Until recently, STEP-G relied on two circular saws for this purpose. However, these had reached their limits in terms of cutting precision and productivity. At the same time, the flexibility of the system was restricted, as only billets with lengths of up to 18 feet and a maximum diameter of less than 20 inches could be processed. In addition, the kerf width of the circular saws ranged from 0.3 inch to 0.5 inch, resulting in large quantities of chips. These not only increased the energy required for remelting but also had a negative impact on overall process performance.

"This had a negative impact on our portfolio and, consequently, on our competitiveness," says Oleg Hoffmann. "The market is demanding significantly larger dimensions, both in length and in diameter."

Task and selection of the partner

The objective of the investment was clearly defined. The new sawing solution was to completely replace the two circular saws while simultaneously improving productivity, flexibility and cut quality. A higher degree of automation was also a key requirement.

Oleg Hoffmann explains: "We wanted to take a major step into the future and install a more powerful, safe and sustainable system. In selecting the supplier, we placed great importance on extensive experience in precision, accuracy, level of automation and availability."

In addition to these technical criteria, the positive experience gained with a Behringer installation at the STEP-G site in Bonn also played a decisive role in the final decision.

Solution

With the installation of the Behringer aluminum band saw HBM720ALU-Z in autumn 2025, an automated process was implemented that consistently maps the entire workflow from casting to the finished cut section. The aluminum ingots are first lifted vertically out of the moulds by crane, placed using a tilting device and then transferred to the infeed magazine. From this point, the process runs automatically: cross conveyors transport the ingots individually onto a central roller conveyor, where a feed gripper takes them over and positions them precisely in the saw. On the outfeed side, several discharge zones are available, including two container boxes for trim cuts and remnants as well as two chain conveyors for sections up to a length of 2.5 m.

Fully automatic aluminum billet saw HBM720ALU-Z

The newly developed HBM720ALU-Z combines centrically arranged V-rollers, a double clamping vice system and an extensive sensor system with light barriers into a highly stable and process-reliable overall system. The increased inclination of the band wheels reduces the alternating bending stress on the saw band while simultaneously enabling significantly higher band speeds. With cutting speeds of up to 3,000 m/min, the machine achieves system throughput at the level of modern circular saws. To further reduce cycle time, the saw band retracts into the table after the cut, allowing offcuts and residual pieces to be removed immediately and without delay.

A precision measuring system ensures exact length determination, while two marking units, one for short and one for long billets, apply the job data directly onto the billets. The entire

material flow has been streamlined and integrated seamlessly into the existing production process.

Oleg Hoffmann emphasises: "We can transfer the billets directly from the casting line to the saw and remove both billet ends. This saves time and energy during homogenisation."

A new approach was also implemented for the machine enclosure and extraction system. The enclosures are fully sealed, and the airflow through the saw frame and machine base has been designed to ensure that chips are extracted particularly efficiently and directly.

The reduced kerf of the band saw results in a significantly lower volume of chips, thereby minimising material loss and substantially reducing the associated production costs. The chips collected directly are continuously extracted and returned to the melting process, further optimising the material cycle.

Result

The impact of the new sawing line is clearly measurable. "We have been able to triple our throughput and reduce the volume of chips by a factor of five, helping us to counteract the significantly increased production costs of recent years," Oleg Hoffmann states. The high level of automation provides considerable relief for personnel, as manual and physically demanding tasks have largely been eliminated and operator intervention has been reduced to a minimum. At the same time, automated material flows improve ergonomics and enhance workplace safety by reducing manual material handling. In addition, the precise sawing technology ensures excellent squareness as well as consistently tight cutting tolerances.

The sawing performance is also reflected in the production figures. Whereas previously around 3,500 cuts per month were possible, the figure has now increased to more than 10,000 cuts per month. The diameter range now extends from 203 to 690 mm, with an infeed length of 8.5 m.

The progress is particularly evident in energy consumption. In view of the high energy costs at the German site, a significant reduction was essential in order to maintain economically viable production. Through optimised process design and more efficient sawing technology, the energy demand has been systematically reduced.

The project execution was also rated as highly satisfactory. Oleg Hoffmann concludes: "We consistently felt well supported by the competent and goal-oriented collaboration and successfully completed the project on time, to the required quality and within budget. Our sincere thanks go to the Behringer team."

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KASTO introduces new control for sawing machines

The dashboard of the new KASTO saw control provides a clear overview of machine status, job orders, runtimes and downtimes.

German sawing machine and storage system manufacturer KASTO has introduced a new generation of controls for its saws. It combines modern operating principles with practical features, allowing both experienced operators and first-time users to operate the machines quickly, safely and productively. The new control is being implemented in the KASTOwin bandsaw series first and will later be extended to other saw models. The optimised software architecture provides significantly shorter program loading times, quicker response to inputs and increased machine availability.

The core element of the new control system is a well-structured dashboard that visually presents key metrics, including runtimes, downtimes, current job orders and machine status. Operators can quickly see which jobs are currently running, flexibly rearrange job orders, and toggle between different views during cutting. The interface includes function windows that can be viewed simultaneously, along with context-sensitive help to reduce the number of clicks needed and significantly speed up operations.

A key feature of the new control system is Simple Mode. It simplifies the display to focus only on essential information and guides novice users safely through the sawing process. Different user roles ensure that operators, supervisors and maintenance personnel receive only the information relevant to their specific tasks. Additionally, users can customise individual settings, such as language, units of measurement and preferred analytics, which greatly simplifies initial training.

A preloaded material library matches various material profiles with cutting feed and speed and users can retrieve previously entered material data at any time, helping to reduce entry times for job orders. A cutting plan facilitates quick, intuitive creation of multiple sawing jobs, accommodating various cut lengths and order complexity. Each cutting plan is assigned to a specific order, ensuring clear organisation and traceability throughout production.

Additionally, individual process parameters can be set for each job, allowing precise customisation to meet specific requirements and maximise efficiency. When used in conjunction with the Optisaw Light software module, the cutting plan reaches its full potential. The solution automatically assigns all orders to the available bars, taking into account the required cut lengths while optimising the sequence and placement of cuts. This intelligent optimisation minimises waste and maximises material usage, resulting in lower material costs and promoting more sustainable and resource-efficient production.

The software package now includes a new cycle stop feature, allowing jobs to be paused at specific points and resumed exactly where they left off. Interruptions are clearly displayed and users can continue from the pause point without needing to re-enter any data.

The control allows precise fault diagnosis in the event of a malfunction. It clearly identifies whether the issue is mechanical or electrical and whether it originates from the machine itself or its material input/output system, greatly speeding troubleshooting. Additionally, comprehensive analysis functions offer transparency regarding runtimes, downtimes and the condition of the saw band, information that is crucial for effective shift planning and reliable unattended operation.

A material library and cutting plans reduce setup times and enable the automated processing of repeat job orders.

Integrated diagnostic and analysis functions offer clear information regarding runtimes, maintenance conditions and the cause of malfunctions.

Simple Mode simplifies the display to show only essential functions and supports safe operation of the saw by novice users.

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Tackling coolant mist in CNC machining

Effective Local Exhaust Ventilation (LEV) can help CNC machining facilities maintain cleaner, safer and more productive working environments

Cleaner air for CNC machining

Maintaining clean, safe and productive workspaces are essential features in the day-to-day operations of modern manufacturing facilities. CNC machining can generate oil and coolant mist which, if not effectively controlled, can affect the working environment, machine cleanliness and operator health.

Leicester Precision Components (LPC) supplies the Clarion range of Local Exhaust Ventilation (LEV) systems, specifically designed for enclosed CNC machine tools. The systems extract contaminated air directly from the machine enclosure, filter the coolant mist and return clean air to the workshop.

Effective LEV can help businesses control exposure to airborne contaminants and support their health and safety responsibilities.

Four models for CNC applications

The Clarion range consists of four models for CNC machines with different enclosure sizes and airflow requirements. The units are designed for reliable, quiet and vibration-free operation in a compact robust design.

Clarion LEVs are fitted with HEPA filtration as standard that are designed to remove fine contaminants down to 0.3 µm with an efficiency of 99.97 percent. The range is covered by a two-year warranty against defects, excluding filters.

Clarion LEV multiple installations on XYZ machines.

Smart monitoring and automation

LPC can supply Clarion LEVs with optional airflow monitoring technology. The sensor provides a visual indication of airflow performance and can alert operators when attention or filter replacement may be required.

Clarion LEVs can also be integrated with CNC machine controls, either via M-codes or by connecting directly to the machine's coolant pump. This allows the LEV to operate automatically only when coolant is being used, helping to avoid unnecessary running time and potentially reducing energy consumption.

Installation, testing, automation, certification and service are carried out by LPC's P601-trained engineers, providing support from specification through to commissioning and ongoing maintenance.

A practical approach to coolant mist control

For CNC machining operations, reliability, servicing, replacement filters and technical support can be just as important as the initial equipment specification.

LPC holds first-line Clarion filters and spare parts in stock, helping customers obtain essential consumables quickly and minimise potential downtime. Servicing, testing and recertification of your Clarion LEV is just a call away.

Customer experience – CGP Engineering

One of LPCs' many customers using Clarion LEVs include CGP Engineering Ltd in Leicestershire, (***www.cgp-engineering.com***) a prestigious manufacturer of injection mould tools used in a variety of high value markets. Managing director Richard Parker contacted LPC to discuss his LEV requirements for his Hurco VMX42HSi CNC machining centres.

CGP Engineering already had LEV equipment from another manufacturer in operation and was looking for an alternative LEV system that could compete and improve on what he already had installed. LPC evaluated and recommended a suitable Clarion LEV and provided a quotation covering the equipment, installation, integration, testing and certification.

Richard also wanted access to ongoing technical support and replacement filters on demand, an important consideration in his decision-making process. LPC discussed the project in detail and satisfied Richards conditions

Clarion LEV installed on a Hurco VMX42HSi at CGP Engineering.

demonstrating LPCs ability to hold first-line spares and filters in stock together with LPCs ability to provide comprehensive service. LPC engineers installed the first Clarion LEV on site and integrated it with the machine's coolant pump. The installation was tested and the appropriate LEV certification provided.

Richard was very happy with the process from start to end. His thoughts and kind words can be read in his testimonial review on our webpage. Richard noted an immediate reduction of mist around the CNC machine with a large reduction in oil settling on surfaces around the facility. Furthermore, Richard noticed the Clarion LEV was quieter in operation when compared to another make in his facility. Based on his good experiences, Richard has ordered his second Clarion LEV.

Customers specifying multiple Clarion LEV units in their workshops are a testament to the quality, robustness and competitiveness of the Clarion LEV systems as well as to LPCs professional ability to supply and service Clarion LEVs.

Complete LEV Support

- LEV application assessment and specification
- Supply, installation and commissioning
- Integration to CNC control or coolant pump
- P601-trained engineers certify you Clarion LEV
- Planned servicing and maintenance
- Replacement filters and first-line spares
- Airflow monitoring and automation

Choosing an LEV system is about more than simply extracting coolant mist. The system needs to be appropriate for the machine, reliable in daily production, straightforward to maintain and supported by a supplier that understands the manufacturing environment. That's LPC.

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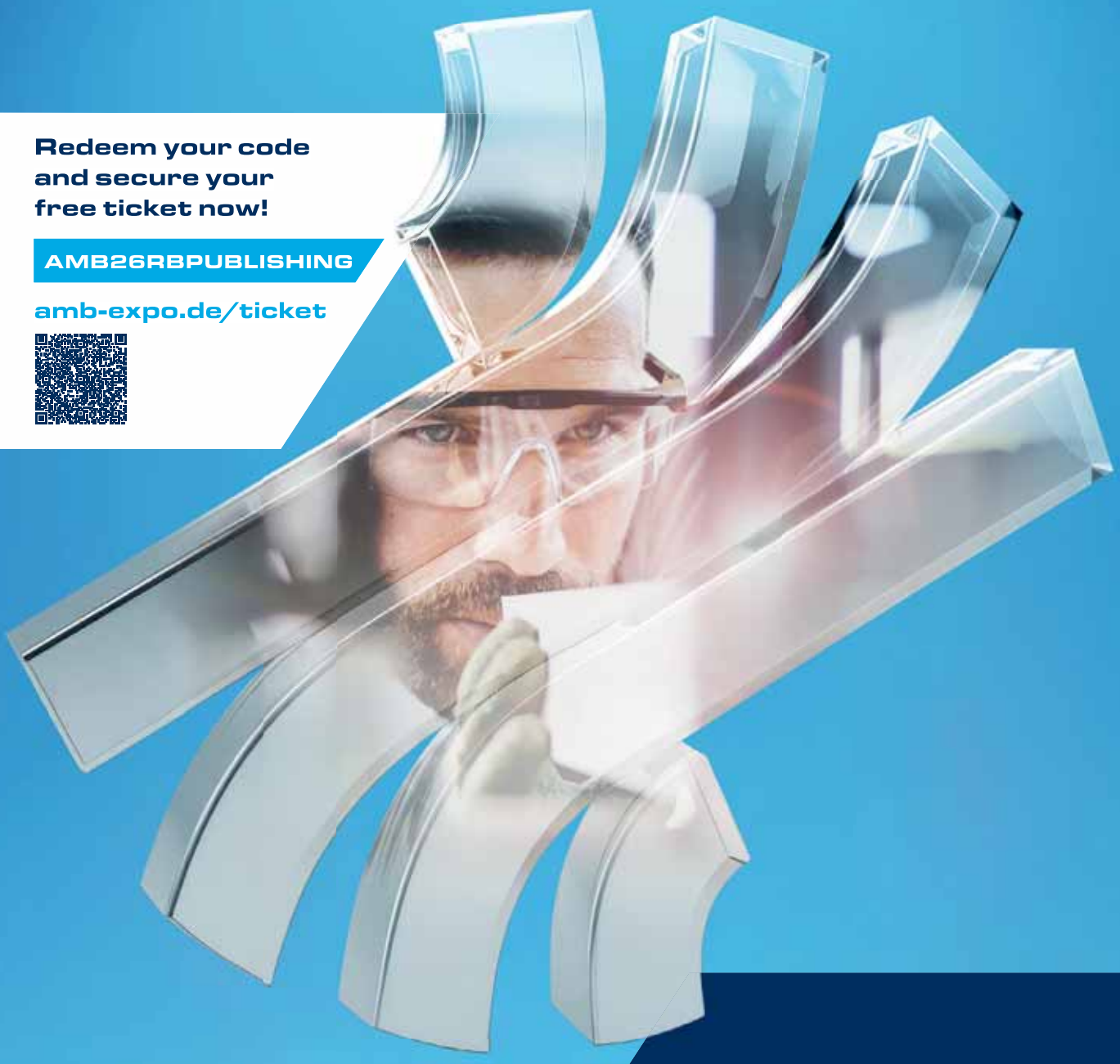

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