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# Young heroes in engineering

NTR's Tool Health Heroes are always looking for new recruits to join their band of engineering crusaders. With over 750 years tooling experience across the team in designing, re-engineering and repairing metal cutting tools, NTR are leaders in the tooling design sector. But what of the future?

Since NTR's acquisition in 2016, Chris Weeds has been keen to futureproof the business. After turning around several failing engineering businesses previously, with an ageing workforce, he was determined to inject youth into the team. He explains: "Many businesses can be short-sighted when it comes to training young people. When production is busy, training is seen as costly and time-consuming. In reality, the investment pays dividends very quickly and with the effort we put in over the course of the training, we end up with true engineers who have learned their skills the NTR Way."

One such engineer is Sam Wood, operations director, who has been with the company since leaving school. He states: "Having spent my youth tinkering with motorbikes, I knew that engineering was the sector I wanted to work in. After a rigorous interview and trial at NTR, I was offered a City & Guilds Engineering Apprenticeship. I jumped at it.

"I learned all the basics of real hands-on manufacturing from welding, manual machining along with autonomy in a production environment. This grounding meant that when Chris bought the business, he recognised my skillset in tooling manufacture and quite quickly promoted me to a management role. I'm now dedicated to offering other young people the same opportunities afforded to me."

Tim, 22, joined the business this year having studied engineering at a local college and is now studying for his Advanced Engineering Apprenticeship. He says: "I'm now improving my basic machining skills I learned at college and applying them in a real-world environment. I'm very much one of the team and made to feel that I'm making a big difference. I would recommend an engineering apprenticeship at NTR to anyone who doesn't fancy the academic route but wants a professional qualification."

Chris Weeds concludes: "If you would like to grab your cape and join the NTR Tool Health Heroes, or you know a young person leaving school in the Wetherby area this year, send me your CV along with a covering letter. You could be our next hero sidekick and assist us in saving the tooling world."

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# Mazak reveals twin investment in plant and digital infrastructures

Yamazaki Mazak has unveiled a major investment in its European Manufacturing Plant by fully automating its sheet metal department while also launching a new website for European customers.

The first stage of the automation project began full production in early 2025 and aims to boost sheet metal productivity in the plant in Worcester, UK while also providing a real-life showroom for the company's laser and automation systems.

Central to the upgrade has been the introduction of two new 6 kW OPTIPLEX 3015 NEO 2D fibre laser machines used to cut a variety of components for its range of UK-made machine tools. Mazak is the only UK-based machine tool manufacturer that uses its own machines during the production process.

The OPTIPLEX machines boast a range of productivity enhancing features including Mazak Beam Shaping Technology and Beam Diameter Control. They deliver substantial productivity improvements and superior cutting quality while dramatically reducing cycle-times and improving productivity by up to 40 percent. By adjusting the beam shape, operators are now able to cut material up to 50 mm with four times more stability compared to conventional cutting. Adjusting the beam shape can also improve the bevel angle by more than 80 percent versus conventional machines, significantly increasing the accuracy of the cut.

The two new machines replaced three older Hyper gear 510s and one NTX-48 $CO_2$ laser cutting machine. The new fibre lasers are tended by a Mazak CSTD Double Tower system to feed the sheet metal and a robotised Mazak Smart Manufacturing Cell for parts sorting. The double towers have sufficient storage for materials and scrap and have multiple conveying units to reduce machine waiting times and further improve productivity through unmanned operations.

The upgrade to the sheet metal cutting capability will help the plant achieve its environmental and sustainable manufacturing objectives. The introduction of the two OPTIPLEX NEO machines will reduce power consumption by 67 percent compared to the four $CO_2$ machines previously employed, ultimately helping the Worcester facility reduce its overall carbon footprint.

Richard Smith, European group managing director at Yamazaki Mazak, says the investment is further proof of Mazak's commitment to European manufacturing and sustainability: "Mazak's philosophy has always been to invest in new technology to achieve productivity improvements and reduce cost. We have replaced four machines with two while shortening cycle times, improving throughput in the factory and making our sheet metal operations much more efficient."

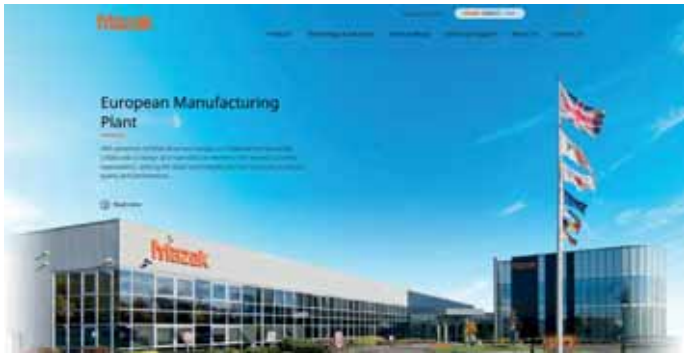
He continues: "The improvements are ultimately designed to benefit our own customers by reducing lead times on our key UK-built machines whilst also supporting our sustainability commitments and our focus on environmentally-friendly manufacturing."

## European laser event

Mazak's new sheet metal department will be open to visitors at the company's upcoming European Laser Event, which will be held at its European Manufacturing Plant in Worcester on 20th-22nd May 2025.

In addition to the two new 6 kW OPTIPLEX 3015 NEO 2D fibre laser machines, which will be live-cutting in the factory, the event will give laser customers from across Europe the opportunity to experience a demonstration of its TUBE FT-150 NEO laser processing machine. Ideally suited for automatic material loading, laser cutting, drilling and unloading, its unique U-axis provides uninterrupted high-speed, high-quality cutting of small and medium diameter tubes.

## New European website




Alongside the upgrades to its European Manufacturing Plant, Mazak has also made significant investment in its digital space following the launch of a new European website in 2025.The site boasts an enhanced user experience tailored to meet the diverse needs of its customer base, underpinned by a responsive and contemporary layout optimised for mobile, tablet and desktop.

Users benefit from simplified navigation and quick access to Mazak's most frequently accessed sections, including product catalogues, technical specifications, support services and contact information for representatives throughout the organisation's broad network.

The website also includes a dedicated support hub, providing direct access to service and maintenance resources, FAQs and regional contact points ensuring Mazak's renowned customer support is always within reach. Users also now have seamless integrated access to the Mazak I CONNECT portal, leveraging single sign-on for security and convenience.

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# New Filtermist MD targets domestic and global opportunities

*Managing director René Joppi , Filtermist Ltd.*

Filtermist Ltd, a leading UK manufacturer of LEV extraction systems, has made a high-profile appointment to help it target new opportunities at home and overseas. The company, which has been delivering cleaner, safer and more productive working environments since 1969, has welcomed René Joppi as its new managing director.

The Austrian-born business leader brings with him a wealth of international management experience and a proven track record of leading innovative businesses, having spent time covering full operations in Europe and the Middle East for various global manufacturers.

René Joppi will be responsible for the completion of a transformation project that Filtermist is currently implementing to secure significant manufacturing efficiencies, as well as developing and growing the local and global footprint of the Telford-based company.

"This is an exciting time to be joining Filtermist. The demand for our products is growing rapidly due to customers needing to comply with legislation and, more importantly, wanting to deliver the best possible work environment for their employees," explained René Joppi, who has degrees in Mechatronics and in International Business.

"We currently deliver our technology in more than 60 countries across the globe and there is strong potential to increase this number, moving our expertise into potential new territories and new applications."

He continued: "We have a great global sales team and will work closely with our partners and distributors across the world to ensure we provide all the support they need, to make 2025 a year of growth and new opportunity."

Filtermist, which is part of the Swedish-based Absolent Air Care Group, provides an extensive range of products and services designed to remove contaminants, such as oil mist, oil smoke, dust, fume and VOCs from the air in production facilities.

In the UK, the company offers a turnkey service that includes initial consultation and project planning, extraction system design, specification, equipment manufacturer and supply, installation and commissioning, as well as a wide range of aftermarket services such as servicing, maintenance and LEV testing.

End users span the entire spectrum of industry, ranging from automotive and aerospace suppliers to food and drink producers, pharmaceutical companies, machine tool shops and medical device manufacturers.

René Joppi concluded: "I'm looking forward to working with the team at Filtermist to ensure we maintain our commitment to delivering exceptional performance and value to all our customers worldwide.

"2025 will be an exciting year for both Filtermist and Absolent Air Care Group, with a strong focus on the launch of several new products and initiatives."

For further information about the products and services Filtermist offers to UK customers, visit ***www.filtermist.co.uk*** or follow the company across its social media channels.

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# Pushing the boundaries of prismatic machining accuracy on the shop floor


***Sixth-generation managing director Juergen Roeders in front of an RPT800DSH 5-axis VMC in the assembly hall at the manufacturer's factory in Soltau, Germany.***

German Vertical Machining Centre (VMC) manufacturer Roeders, whose machines are sold into the UK and Irish markets exclusively by Hurco Europe, High Wycombe, is in the process of rolling out a new range of milling platforms, with optional integral grinding capability, that can achieve extraordinarily tight tolerances on workpieces machined on the shop floor.

The RPT series of 3- and 5-axis VMCs are said to be able to achieve tolerances half those obtainable using Roeders' established RXP machines, which already achieve world-class accuracy and surface finish. The latest VMCs can be kept geometrically stable to within ±1 micron, even if the ambient temperature fluctuates as much as three degrees Celsius.

Achieving this level of precision would normally require the machine tool to be housed in an air-conditioned environment, but this would entail considerable expense both to install and to power. Roeders has concentrated instead on holistic temperature management within the machine and has transcended conventional methods with the integration of PRECITEMP technology to achieve a high level of consistency and repeatability. Three increasingly sophisticated levels of temperature compensation and sensor feedback to the CNC system may be specified by a customer, according to their requirements.

A combination of some or all of the following cooling measures can be involved: temperature control of, for the first time, the machine table and rotary axis bearings in addition to the torque motors in the trunnion-type 5-axis machines and of the air in the working area, surrounding the axis drives and in upper part of the machine guarding.

Thermal stability of the portal structure and machine bed is maintained by embedded pipework carrying chilled water. There is similar circuitry for the spindle and its surrounding sleeve to prevent growth in the Z-axis, which is monitored to sub-micron accuracy by an external, non-contact sensor. Any remaining minimal residual errors are compensated for by software algorithms derived in the course of the development process of the machines.

During milling, displacements occur orthogonally to the direction of axis travel. Although these lie in the sub-micron range, they can negatively impact surface quality when machining a workpiece using a ball nose milling cutter, for example. So to minimise even these minute movements, Roeders has adopted NANOTOL technology, whereby the carriages housing the roller bearings along the linear axes have been optimised to reduce transverse movement, significantly improving precision.

*Machining area of the RPT800DSH in which, for the first time, the machine table and rotary axis bearings, in addition to the torque motors, are thermally controlled. Spindle zero point in the Z-axis is measured to sub-micron accuracy using an external, non-contact sensor to enable growth compensation.*

The structural integrity of the RPT series has been meticulously engineered to minimise vibration. The robust machine frame, coupled with advanced damping technology, creates a stable platform on which the most intricate machining operations can be performed reliably. This foundation underpins an ability to deliver exceptional surface finish and dimensional accuracy, even at high machining speeds.

A big market for Roeders machines worldwide is the mould and die making sector, where the high surface finish obtainable minimises and sometimes eliminates the need for hand finishing. However, there is a tendency for ever higher precision to be specified on drawings in other industries as well, notably aerospace and medical, which RPT machines are well suited to achieve.

Roeders understands that precision is not just about static accuracy, but about maintaining that accuracy throughout the entire machining process, under dynamic loads and varying cutting conditions. Driving the RPT series is the manufacturer's intuitive, powerful CNC system, designed with the operator in mind. The control simplifies programming and optimises machining processes, allowing complex toolpaths and advanced machining strategies to be generated. The control system's user-friendly interface reduces setup times and increases overall productivity.

In the world of high-precision manufacturing, rapid setup and vigilant monitoring of the machining process are important, so improvements have been made to the operator's visibility and access from two sides, into the working area. The doors now open at the touch of a button for added convenience, while automation is also facilitated by the new design. Machine uptime is a critical factor, so ease of servicing has been prioritised. The modular construction and ready accessibility to interior components simplify maintenance procedures, minimising downtime and maximising availability.

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# Production times cut by 50 percent with Heckert 5-axis

Neuson Hydrotec GmbH in Linz, Austria, is a company where mechanical engineering, mechatronics and hydraulics are intertwined in many ways. With around 50 employees, contract manufacturing is the largest business unit. Walter Füreder, one of the two managing directors responsible for this division, describes it as essential for the company: "We generate around half of our turnover with our contract work. Twenty percent of this involves doing the groundwork for other business units, while we achieve the rest with leading companies in the plastics recycling, railway and mechanical engineering sectors."

Karl Kordik, sales manager for Contract Manufacturing, has known his customers and their needs for many years. Components for injection moulding machines are also part of the recurring contract work, such as shredder shafts and bearing blocks, all supplied to machine tool manufacturers. "We supply the largest proportion of our work, around 40 percent, to the plastics recycling sector," says Karl Kordik.

The services range from procuring raw material to CNC milling, grinding, lapping, honing, welding and superfinishing to pre-assembly. Karl Kordik states: "Our customers appreciate that we supply them with a complete component, including a 3D measurement report."

## Sophisticated components, powerful machines

The central topic in contract manufacturing is machining and various CNC turning and grinding machines and several machining centres with pallet pools are available for this. The highlight is the HEC 800 5X MT 5-axis machining centre purchased in May 2024. This investment was triggered by a complex component for a plastics recycling machine that requires turning and milling, and numerous holes have to be drilled at different angles. In this recycling plant, the used plastics are heated to around 400 degrees after shredding. A spindle presses the liquefied mass through a plate with tens of thousands of holes about 0.2 mm in diameter, which retains contaminants. A permanently rotating scraper disc removes these. The cleaned plastic flows to a cooling station and is cut into pellets. Neuson Hydrotec manufactures the housing

for this laser filter. It contains intricate contours and numerous channels through which the contaminated and cleaned plastic first flows. "One hole runs through the entire component and other channels meet at a certain angle," says Karl Kordik.

High precision is required for fluidic reasons where the channels must not be offset when they meet. "We manage this because we achieve a positioning accuracy per hole of less than 0.03 mm," adds Karl Kordik. "Although that doesn't sound particularly difficult, the value corresponds to only a few µm per axis if the holes are drilled at 45 degrees."

## Complete machining saves non-productive time.

Until recently, the contract manufacturers were producing this housing on a vertical turning and boring mill and a 3-axis milling machine, in seven clamping positions. When the customer ordered significantly larger quantities, Neuson Hydrotec decided to modernise production to reduce manufacturing times. The solution pursued was complete machining on a 5-axis machining centre with a turning function.

There were several reasons why the decision was made in favour of the HEC 800 5X MT. According to Karl Kordik, one crucial factor was that the HEC 800 allows the component to

be clamped vertically: "These components can only be clamped on a horizontal turning and milling centre with great difficulty. Fast,

automated workpiece replacement is even more difficult. The HEC 800 has a standard dual pallet changer, enabling setup parallel to the primary processing time."

## Bed extension for deep holes

On the HEC 800 5X, the 5th axis is located in the workpiece, not the tool. "That saves us from having to reclamp," says Karl Kordik. Ultimately, however, the decisive factor was the possibility of obtaining a bed extension along the Z-axis and an extended Y-axis. Karl Kordik concludes: "We want to clamp components with a length of 1.1 m and drill through them. The standard Z-axis path of 1.3 m is insufficient for this."

Starrag supplied the HEC 800 5X MT with travel paths of 2,050 mm along the Z-axis and 1,300 mm along the Y-axis.

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# New 5-axis machining centre from DMG MORI

A second-generation DMU 60 eVo vertical-spindle, 5-axis machining centre of swivelling rotary table design, having a thermo-symmetrical gantry configuration and optimised kinematics, has been introduced by DMG MORI. The proven machine has been developed to meet increasing demands for precision, dynamics and flexibility and utilises the manufacturer's MX concept for process integration, automation, digital transformation and green transformation.

The platform integrates various manufacturing processes including milling, turning at up to 1,200 rpm, gear skiving using a proprietary technology cycle and grinding. Inclusion of these additional metalcutting possibilities transforms the production centre into a multifunctional machining solution that can be flexibly adapted to a range of requirements and industries. Various automation alternatives maximise machine utilisation, around the clock if required.

Compared to its predecessor, the machine has a working volume 40 percent larger at 750 x 550 x 550 mm. Direct-drive ballscrews in the linear axes are standard, but linear motors are

an option offering 80 m/min rapid traverse. Table swivel range is generous at -5 / +110 degrees and maximum table load has increased by 100 kg to half a tonne. Steeply inclined, stainless steel interior surfaces and a 20 percent wider conveyor ensure optimum chip evacuation and reliable production.

The machine bed is a hybrid mineral casting combining excellent stiffness, strength, vibration damping and thermal stability. Comprehensive cooling keeps critical components at a constant temperature. The second-generation DMU 60 eVo is also available in a µPrecision version, enabling it to machine the most demanding components to accuracies measured in low single figure microns.

The spindle portfolio includes versions capable of speeds up to 40,000 rpm or a torque of 200 Nm. Tool storage with 30, 60 or 120 pockets is within the machine's nine square metre footprint, which is 20 percent smaller than before. A double-chain magazine is also available for up to 300 tools. Thanks to an innovative tool exchange shutter, chip-to-chip time has been reduced by one second to 4.5 seconds, further increasing machining efficiency.

Control options are the Siemens SINUMERIK ONE or HEIDENHAIN's TNC 7, with the DMG MORI CELOS X graphical user interface and Cloud-based software platform for data management. Automation can be provided by DMG MORI's WH Cell workpiece handling system, Robo2Go Milling or PH Cell pallet handling arrangement.

**DMG MORI UK Ltd Tel: 024 76 51 6120**
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# Subcontractor chooses 30-taper production centre to embark on 5-axis prismatic machining

Wisbech-based subcontractor Avant Manufacturing was using four 40-taper, 3-axis Vertical Machining Centres (VMCs) when, towards the end of 2024, a sharp upturn in existing and new business meant that an extra machine was needed quickly.

Dominic Roach, who founded the company in April 2021, wanted to install a 5-axis production centre to reap the benefits of fewer reclampings of parts. The advantages are principally higher speed of production and less risk of errors and damage to workpieces due to excessive manual handling. He also wanted to be able to produce more complex components, preferably in one hit. However, the space remaining on the shop floor was limited and 5-axis machines tend to be large.

The solution to the conundrum was to install a Brother Speedio U500Xd1 5-axis, swivelling-trunnion VMC with a 30-taper spindle from Whitehouse Machine Tools, sole UK agent for the Japanese manufacturer. Having a 1,560 x 2,026 mm footprint, the machine fitted neatly into the available space when it was delivered in December 2024.

Subcontractors are increasingly moving towards the 30-taper interface, especially with the BIG-Plus face and taper contact option, as it combines 40-taper rigidity with the exceptionally high speed motions of which the smaller form factor machines are capable.

Dominic Roach comments: “The Brother practically sold itself. We couldn't find a 40-taper machine that would fit, while other 30-taper equipment suppliers had a limited number of production platforms and automation possibilities in their range, which would have limited our future options.

“Additionally, I was drawn to the Brother




because it is a true 5-axis machine, not a 3-axis model with a bolt-on compound table. An added bonus is that Whitehouse offers unlimited ongoing technical support and is very quick to respond when we have a query. Someone always gets back to us within half an hour.”

As he was swapping to a smaller diameter toolholder that he had never used before, Dominic Roach was keen to satisfy himself that the Brother machine was powerful enough to remove metal quickly. Admittedly most of the material going through the shop is aluminium, with the remainder mainly plastic, but often billets are reduced to 10 percent of their original size, such as a medical robot part that is regularly produced. In one recent instance, a 72 kg block of 6082 aluminium was milled down to a weight of 4 kg, a reduction of more than 94 percent.

With a similar aluminium billet and some CERATIZIT roughing end mills, he drove 100 miles west to Whitehouse Machine Tools' showroom and technical centre in Kenilworth to put a U500Xd1 through its paces. Dominic Roach states: "I was impressed not only by the metal removal rate, but also by the size of parts that can be produced in such a small footprint.

“I would have no hesitation producing components from tougher materials either, as it's an easy matter to change the machining strategy to limit the width and depth of cut and increase the spindle speed and feed rate.”

Since there was an urgent need in Wisbech for the additional spindle, he decided to rent a U500Xd1 straight away ahead of taking delivery in April 2025 of a more capable model, a U500Xd2. Whitehouse duly supplied the rental machine and provided two days of on-site training.

The upgraded U500Xd2 has longer travels in X and Y, giving a working volume of 500 x 450 x 380 mm. Rotary axis motions are the same, as are the 16,000 rpm BIG-Plus spindle and the 28-position tool magazine, but the control is full 5-axis rather than 4+1. A high-accuracy mode option with 1000-block look-ahead has been selected, as well as 35 bar high pressure coolant and Blum probes for checking cutter length and workpiece position. Chip-to-chip time is fast at 1.4 seconds owing to simultaneous tool change and rapid traverse in the linear and rotary axes.

To indicate how much faster the U500Xd1 is,

and the U500Xd2 will be, compared to one of his 40-taper VMCs, Dominic Roach cited a scientific part produced from solid aluminium that formerly required four separate setups on 3-axis machines. The number of operations has been halved and the same component is now produced in 36 percent of the time. That is because although Op 1 is the

same, Ops 2, 3 and 4 are now completed on the 5-axis Brother in a single clamping using the rotary axes to position the part for 5-sided machining.

A job completed in January 2025, involving drilling 60 holes at eight different angles into a medical plastic block, could not have feasibly been done on the 3-axis machines. So the availability of the Brother is allowing Avant Manufacturing to gain new business that it previously had to turn down.

A difference that was noticeable immediately the U500Xd1 was installed was the better milled surface finish on components, which far surpasses any customer requirement received to date. Dimensional tolerances held are tight, down to below 10 microns, despite there being no temperature control in the factory.

Looking to the future, for obvious reasons Dominic Roach is looking to move to larger premises and has first refusal on an adjacent unit on his current industrial estate in Wisbech. He is committed to continuing the journey towards 30-taper, 5-axis machining to provide increased capacity for both large and small batch production, especially for the medical, pharmaceutical and scientific industries that he mainly serves, as well as for the control, automation and defence sectors.

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# City of Wolverhampton College invests in engineers of the future

Educating the next generation of engineers and specifically machinists is paramount to the continued success of UK PLC. City of Wolverhampton College has made a major investment in a range of machinery, ensuring local businesses have access to a pool of young talent to help grow and develop engineering facilities in this industrial heartland of the UK.

Having first purchased machines from XYZ back in 2015, which were located in the original training workshop at the Paget Road Campus, the demand for educating students and apprentices has boomed and a new £8.1 million centre has been built at the college's Wellington Road campus, in Bilston, as part of the City of Wolverhampton Council's transformational City Learning Quarter masterplan.

*City of Wolverhampton College put great emphasis on students and apprentices understanding the machining process hence the number of manual machines they have purchased.*

The Advanced Technology and Automotive Centre, which opened in September 2024, houses the existing machines and another wave of major investment in manual mills, manual lathes, CNC bed mills fitted with ProtoTRAK RMX touchscreen controls, along with a vertical machining centre and CNC lathe fitted with Siemens Sinumerik CNC controllers.

Jim Wilkins, curriculum manager for engineering at the college, explains why there is such a diverse range of machines at the college: "We think that it is important that these young people, who range from Level 1 students and go right up to HND level, understand the basics of machining.

"This starts with being able to create and understand a drawing and then continues through to gaining knowledge in basic machining principles with the setting up of a machine and learning how to manufacture parts, which is why we have a number of manual machines.

*New technology has a place at the college with the investment in ProtoTRAK controlled machines and Siemens controlled vertical machining and turning centres.*

"That said, to assist in their development and as the students continue their journey towards full time employment, they need to be exposed to CNC mills and lathes with the additional functions they have. This means they can learn about production engineering and the efficiency gains that come from using machines fitted with automatic tool changers and learn in a controlled environment the increase in performance that these types of machines have".

The funding came from the local council and the West Midlands Combined Authority who had the vision to make this funding available due to Wolverhampton and the wider West Midlands area being industry led. Now this workshop is up and running, the college are engaging with local businesses to work together to provide young people with a future in engineering.

There are currently 140 students enrolled on engineering courses, as well as over 40 engineering apprentices from local and

national companies training at the centre, gaining the skills and knowledge they need for their careers in the industry.

Jim Wilkins concludes: "The purchase of the XYZ machines has proven over several years to be the right choice for the college. This is due to the industrial build quality of the machines along with the service and support we receive from XYZ. Also having a dedicated point of contact in John Aspinall, educational sales manager, we get fantastic advice and support on our equipment and, importantly, this helps the college to achieve its goals of preparing people for employment by equipping them with the skills needed by the sector. It ensures local engineering companies are kept supplied with young talent that allows local businesses to stay productive and competitive."


*Support from John Aspinall, XYZ's educational sales manager has been fantastic according to Jim Wilkins, curriculum leader for engineering.*

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# A 'centre' of attraction in Ireland

Mills CNC will be attending this year's Manufacturing Solutions Ireland show in June.

The company, already with a strong presence in Ireland and boasting significant and growing market share of the Irish machine tool market, intends to strengthen its position there still further by showcasing one of its latest multi-axis machines on its stand.

The new DN Solutions' DVF 5000, second-generation, simultaneous 5-axis machining centre will be making its debut at the show and, amongst the machine's many impressive features and innovations, will be showcased with the new Siemens' Sinumerik One CNC control and its associated state-of-the-art Digital Twin technology.

New DVF 5000, second-generation machines will, according to Tony Dale, Mills CNC's Group CEO, "take the market by storm and make 'one-hit' machining a reality for many component manufacturers."

The new DVF 5000 machines are faster and more accurate and flexible than previous DVF 5000, Mark One, models and are equipped with directly-coupled, oil-cooled spindles, 15,000 – 20,000 rpm, strategically-located thermal compensation sensors and large 630 mm diameter rotary-tilting tables.

The machines boast fast 42 m/min rapids on their X/Y/Z-axes, generously-sized tool-changers, up to 120 tools, with fast tool changeover times, 1.3 seconds T-T-T and roller-type LM guideways too.

DVF 5000, Mark One models were launched by Mills CNC into the UK and Irish markets back in 2018 and quickly become the 5-axis machine tool of choice for many component manufacturers. Mills is confident that the new second-generation machines will prove equally as popular as their predecessors.

Sinumerik One is Siemens' latest, future-proof CNC system designed for high-productivity machine tools like the new DN Solutions' DVF 5000 second-generation 5-axis machining centres. New DVF 5000 machines can also be supplied with the latest FANUC or HEIDENHAIN controls.

Bringing together in perfect harmony the real and virtual machining worlds, the control optimises PLC and CNC performance and sets new standards in machining speeds, process efficiencies and flexibility.


Tony Dale concludes: "Ireland is an important market for Mills CNC and we are delighted to be showcasing advanced ground-breaking technologies on our stand at this year's Manufacturing Solutions, Ireland show.

"Our new DVF 5000 simultaneous 5-axis machine will, I am sure, draw in the crowds and the Sinumerik One Digital Twin technology, being presented by staff from our CNC Training Academy, will be equally well-received."

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# New online presence for West Midlands RAS

The West Midlands RAS (Robotics and Autonomous Systems) Cluster, a collaborative group founded by the Manufacturing Technology Centre (MTC) and University of Birmingham has announced the launch of the group's new online presence.

In May 2024, the MTC and University of Birmingham founded the West Midlands RAS Cluster with the aim to raise industrial productivity and competitiveness in the West Midlands region, while creating highly skilled and well-paid employment. The cluster, which now has 18 partner organisations has also appointed Cadence Industrial & Technical Communications as its dedicated press office.

Professor Mike Wilson, chief automation officer at the MTC, says: "The launch of the new online resource marks a significant milestone in making our resources, research and initiatives more accessible to stakeholders and the wider public. We are already facilitating greater collaboration between industry, academia and government, all with the aim of advancing the development and deployment of robotics and autonomous systems across the West Midlands."

RAS technologies have the power to unlock major success for UK industry. However, they require specific and purposeful investment in order to be properly utilised. The UK has 119 robots per 10,000 manufacturing employees, representing the lowest robotics adoption in the G7.

Facilitating the increased adoption of robotics technology will have huge economic benefits. The global robotics technology market is expected to reach £283 billion by 2032, presenting a pivotal opportunity for the UK to capitalise on.

By creating a collaborative group, made up of leading figures within industry and academia, the West Midlands RAS Cluster aims to not only increase the adoption of RAS technologies within the area but also create a supply chain that can serve both UK and global markets.

Cadence Industrial & Technical Communications, will manage the cluster's press office, ensuring clear, impactful communication of its initiatives, research and success stories.

Neil Fullbrook, founder and chief executive of Cadence said: "We are honoured to work with the West Midlands RAS Cluster to amplify the incredible work being carried out in robotics and automation in the region."

RAS remains committed to driving growth and innovation through strategic collaboration, ensuring that businesses of all sizes can benefit from the opportunities presented by robotics and autonomous systems.

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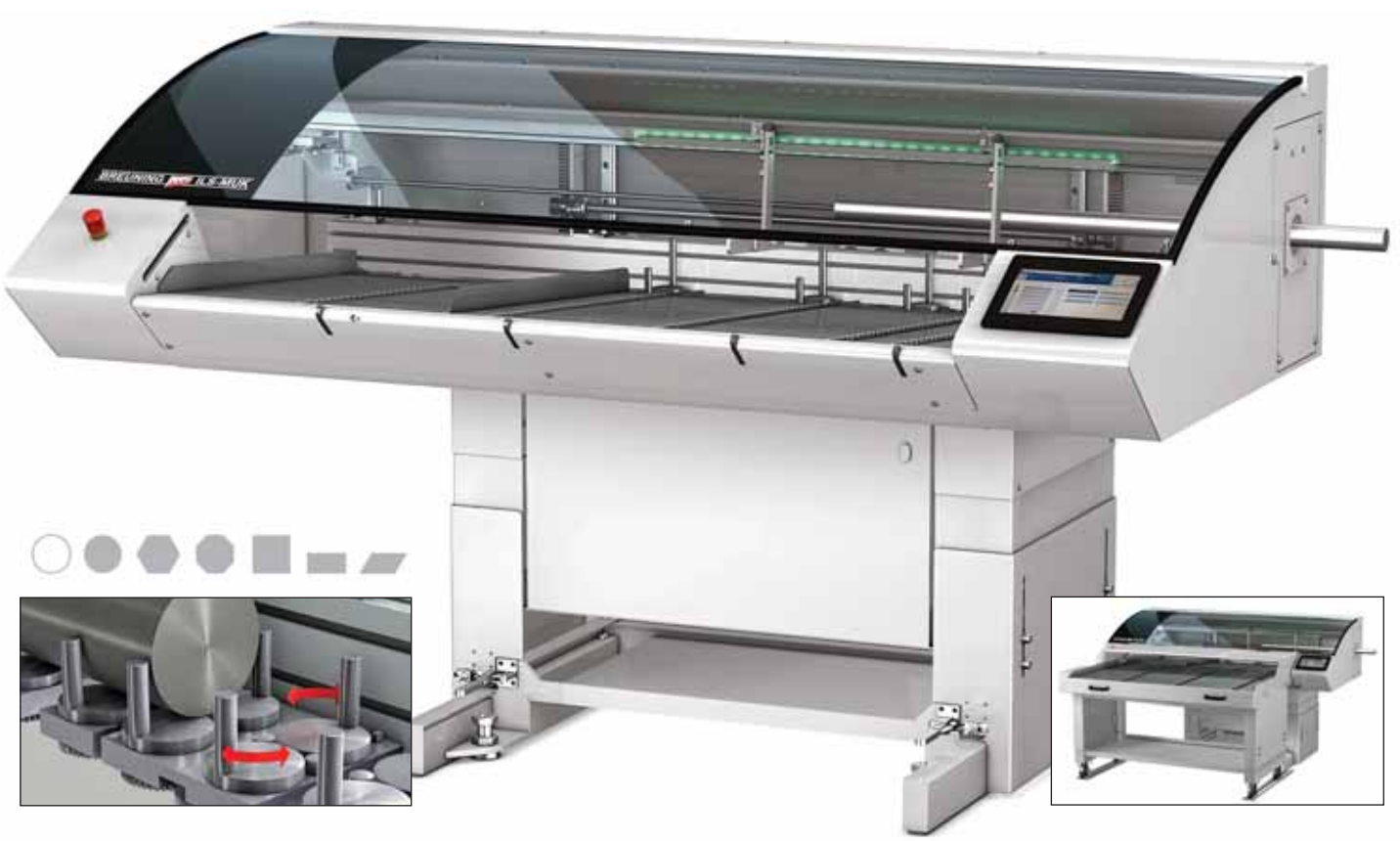

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# Atkinson equipment slashes lead-times by automating prismatic machining

A leading OEM specialising in the design and production of equipment for oil heating and diesel tank applications, as well as being a subcontract engineering firm, Atkinson Equipment has dramatically reduced lead-times following investment in a Brother Speedio U500Xd1 5-axis machining centre equipped with Tezmaksan CubeBox automation from Whitehouse Machine Tools.

Adam Walford, engineering group sales manager at Atkinson Equipment explains: "The automation solution from Whitehouse has increased our productivity dramatically. We have typically halved lead-times from 12 weeks down to six for complex subcontract parts and reduced them even further when making components for our own products, say from a month down to one week.

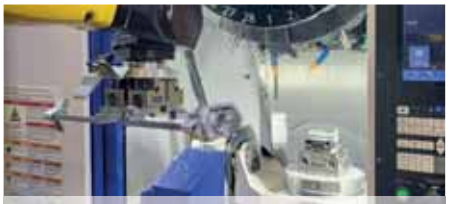
"Since automating the milling side of the business, we have also seen a reduction in the bottleneck we previously had when parts arrive from our turning section for prismatic machining. Our ability to get product out of the door to our customers is through the roof. It is helping us to win new business in the subcontract area, as well as to grow our OEM division."

Based in Westbury, Wiltshire, Atkinson Equipment is required to manufacture large volumes of parts for its own refuelling and liquid transfer products, which it has been doing for over 50 years. It also needs to produce a high mix of smaller volumes for the subcontracting division, which has been running for half that time, but which is growing rapidly. This dual role places significant demands on its manufacturing capabilities and was pivotal in the investment in the automated Brother-Tezmaksan cell.

The relationship with Whitehouse Machine Tools began in 2019 with the purchase of a Brother 5-axis CNC machining centre, a Speedio S700X1 equipped with a Lehmann rotary-swivelling compound table. This initial investment allowed the company to machine complex parts on multiple faces in a single setup, significantly improving efficiency. Having experienced the benefits, Atkinson Equipment went on to buy a Brother Speedio M200Xd1 trunnion-type 5-axis machining centre in 2023, initially to manufacture a complex aerospace part.

At first, the idea was to automate the existing S700X1 on site with the Tezmaksan CubeBox, but this would have necessitated an upgrade to the Lehmann equipment to provide pneumatic supply for automatic clamping of parts. However, a visit to the Whitehouse showroom in Kenilworth revealed the potential of automating a Brother U500Xd1 5-axis machining centre instead, as this was the configuration being demonstrated.


*The Brother Speedio U500Xd1 5-axis machining centre equipped with Tezmaksan CubeBox automation on the shop floor at Atkinson Equipment.*



*Whitehouse assisted in the cell set-up in Westbury by supplying end-of-arm tooling with double grippers for handling raw material and finished components.*

*The Atkinson Tankmaster is an OEM valve and sight gauge designed to monitor and control the oil level in a storage tank.*

Adam Walford explains: "Looking at the cost differential between just the Tezmaksan compared with the automation plus the U500Xd1, it made sense to go for the automated setup complete with the new 5-axis machine. We needed extra capacity anyway, so it made absolute sense for us, especially as it was more affordable than we anticipated."

The Brother U500Xd1's large working volume for the compact footprint, 28-tool ATC capacity and integrated rotary joint for pneumatically actuating the fixtures proved ideal for the Westbury firm's production needs. Whitehouse provided comprehensive support during the set up process, assisting with tray template design for holding raw material and finished components, as well as the end-of-arm tooling with double grippers for handling them. The automated cell's sensors create a safe working environment, without the need for traditional guarding.

Adam Walford concludes: "It was quite daunting at first taking on a completely new piece of technology like this, but we were confident with the support that we would get from Whitehouse and their ability to guide us through the process to where we are now.

"The relationship with this machine supplier is key. We're very happy with their service and support, it's really brilliant and it gives us confidence to keep buying from them."

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# Architectural products manufacturer automates materials handling and storage

Established in 1945, family-owned US firm Architectural Grille manufactures in its Brooklyn, New York City factory an extensive range of custom architectural metalwork, primarily focusing on linear bar and perforated ventilation grilles and decorative metal screens for indoor and outdoor use in residential and commercial properties. The company CNC punches, laser profiles, waterjet cuts and fabricates aluminium, brass, bronze, steel, stainless steel and other materials having various finishes to create products that meet the aesthetic and functional requirements of its customers.

With such a wide variety of sheet metals to process, Architectural Grille wanted to streamline storage of its large inventory of materials, with an eye to optimising material flow and maintaining operator safety. For a solution it turned to KASTO Inc, a subsidiary of German storage and retrieval system manufacturer, KASTO Maschinenbau, which also has a UK daughter company in Kibworth Harcourt, Leicestershire serving the British and Irish markets.

A pair of tower storage systems, UNITOWER and KASTOecostore, was deemed to be the ideal solution to alleviate the previous, inefficient, manual storage arrangement that consumed considerable space and hindered ergonomic and economical handling. Anthony Giumenta senior, along with his sons Anthony and Stephen, had encountered KASTO's storage products at a trade show, sparking their interest in an automated solution.

After an assessment of the diverse requirements in the Brooklyn factory, KASTO proposed the implementation of five tower storage systems. They comprise four 8 m tall KASTOecostore 3.0 units having a compact footprint, tailored for sheets of various sizes up to 5 × 10 ft or 5 × 13 ft, 1.5 x 3 m or 1.5 x 4 m, alongside one double-sided UNITOWER 2.0 dedicated to accommodating long stock from 6 to 21 ft, 1.8 to 6.4 m, in length.

Managing director Stephen Giumenta remarks: “With KASTO's storage solutions, our logistics processes have significantly improved, enhancing both efficiency and safety at our workstations.”

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# British manufacturer ‘wheely’ impressed with FANUC servicing

Thanks to its service agreement with FANUC, The Walsall Wheelbarrow Company is confident that it can reliably deliver the quality craftsmanship that customers have come to expect from this proud British brand. Since switching to FANUC to provide servicing for its fleet of 14 robots, the business has discovered the discernible difference that preventative maintenance and thorough servicing can make to production continuity and the ability to guarantee timely fulfilment of orders.

Britain’s most iconic name in wheelbarrow manufacturing, The Walsall Wheelbarrow Company, was founded in 1995, but its true origins date back to the 1940s, when Fred Thacker crafted his first wheelbarrow. Fred’s son, Les, modernised the design and, together with his family, established the company to ensure every wheelbarrow remained a product of British craftsmanship.

## Tradition meets technology

Today, this legacy of quality lives on through a manufacturing process that blends tradition and cutting-edge technology. Fully automated press lines, robotic welding and automated tube bending ensure every barrow is built to the highest standard. Embracing robotics and automation has been the key to keeping this proud tradition British, enabling the company to innovate and secure contracts with some of the UK’s largest garden centres, merchants and retailers.

“We are the only manufacturer to make the whole wheelbarrow here in the UK. Other companies import parts, whereas we make everything apart from the tyres and inner tubes,” says Jonathan Thacker, operations director at The Walsall Wheelbarrow Company.

FANUC robotics are a linchpin of this precision operation. The Walsall Wheelbarrow Company has 14 FANUC robots in total: 11 R-2000iA models and three ARC Mate welding robots. The 6-axis R-2000iAs combine fast cycle times with high payload capabilities, making them ideal for the pick and place tasks they perform. The ARC Mate series is designed specifically for high speed cutting and welding applications, so this was the obvious choice when it came to purchasing robots to weld wheelbarrow frames.

The Walsall Wheelbarrow Company originally had a contract with a third party company to service its robot fleet but was growing increasingly dissatisfied with the level and quality of support it was receiving.

“We were concerned that in the event of any of the machines going wrong, the support simply wasn’t there to get us back up and running quickly. We make everything on site to order, so we don’t keep stocks of parts for long periods. If one part of the process goes down this could have a massive impact on our production continuity,” says Jonathan Thacker.

The company approached FANUC to see what it could offer and was pleasantly surprised by the breadth, scope and robustness of its service contracts, which are designed around a preventative maintenance approach.

Emma Harris, customer service sales manager at FANUC UK, explains: “The goal of a successful preventative maintenance programme is to establish consistent practices that will improve the performance and safety of equipment. Moreover, planned maintenance will extend mean time between failure and avoid unplanned downtime. Underpinned by our promise to provide lifetime support on all of our products, FANUC’s preventive, predictive and corrective service packages are carefully designed to achieve all of these objectives.”

*FANUC services The Walsall Wheelbarrow Company’s fleet of 14 robots. The business has discovered the discernible difference that preventative maintenance and thorough servicing can make to production continuity and the ability to guarantee timely fulfilment of orders.*

## Superior servicing standards

The Walsall Wheelbarrow Company took out a three-year contract under which FANUC engineers perform annual checks of each system. During these visits, they carry out a thorough inspection of robot and controller condition, teach pendant cable, internal harness and robot connectors. They assess the robots for excessive noise and vibration and check cable connections, cooling fans, power supplies, transformer tappings and emergency stop operation. Also covered by the service agreement are: controller memory back-up; grease analysis and greasing; replacement of RAM and APC batteries and repeatability testing. After each visit, FANUC provides a full service report, detailing findings and making recommendations where applicable.

Since switching to FANUC, The Walsall Wheelbarrow Company has repeatedly been impressed by the meticulous and comprehensive servicing support it has experienced.

“Under this contract, our robots get a full

MOT and a thorough clean and we get an in-depth report stating what needs to be replaced or upgraded. With the company we used previously, we never got anything like this," says Jonathan Thacker.

## Delivering peace of mind

As well as benefitting from scheduled maintenance support, The Walsall Wheelbarrow Company has derived value from having access to a rapid, responsive callout service and sound engineering advice from robotics experts.

"We have complete confidence that when we call FANUC, they will send professional engineers who know what they are doing and are able to give us the advice we need to get our production going again," explains Jonathan Thacker. "Knowing we can call on FANUC and immediately access this kind of support gives us complete peace of mind.''

Having confidence in the reliability of its manufacturing operation also means The Walsall Wheelbarrow Company can plan for the future. Jonathan Thacker concludes: "Being able to guarantee exceptional service and quality workmanship is instrumental to maintaining our position as Britain's leading wheelbarrow manufacturer. It also gives us a solid foundation from which to continue evolving through innovation, ensuring that British-made products remain at the forefront of the industry."

*The 6-axis R-2000iA robots combine fast cycle times with high payload capabilities, making them ideal for the pick and place tasks they perform at The Walsall Wheelbarrow Company.*

*Under the service contract, the robots get a full MOT and a thorough clean while the client receives an in-depth report stating what needs to be replaced or upgraded.*

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# CERATIZIT's complete micro drill program

In the past, you could only drill on inclined or curved surfaces with pre-chamfering using a milling cutter. Thankfully those days are in the past, now only one tool is required: the newly developed WTX - Micropilot from CERATIZIT. It can even pull off 90° countersinks at the bore entry in a single operation, saving tool changes, time and costs.

Micromachining has rules and practices all its own. Simply put, what works well with standard tool dimensions does not necessarily hold true with small diameters. "To this end, we have revised our micro drilling program and developed a genuine time saver. The WTX - Micropilot is small in stature, but big in performance. Perfectly matched to our WTX - Micro micro drill from 8xD - 30xD, the pilot drill is used at drilling depths of up to 2.5xD," says Manuel Keller, product manager at CERATIZIT.

## Say goodbye to crooked drill holes

When faults occur in complex, micro-sized components, they quickly end up dumped in the recycling can. Truth, be told, there are a number of things that can go wrong: drills run off, drill holes get crooked or tools break including damage to the workpiece itself. "Efficient machining of small components presents its own set of challenges," says Manuel Keller. "Our customers want process reliability, the shortest possible machining times and demand extremely high-quality standards. Fortunately, our WTX - Micro series is up to the task." Thanks to its ingenious face geometry with a 160°-point angle, the tool ensures the follow-up drill can plunge in cleanly and without running. With the special Dragonskin coating, clean chip removal and a longer tool life are guaranteed.

The WTX - Micropilot is state of the art through and through, from the substrate to the geometry to the coating. It is also perfectly designed to work together with its "best buddy" WTX – Micro. This drill duo can handle the most common as well as the most demanding tasks. "One special feature of the WTX – Micropilot is that it circumvents the usual mirroring required if drilling inclined and curved surfaces with an inclination of up to 50. This eliminates one processing step, saving time and tool changes. When piloting on straight surfaces, a 90° countersink at the bore entry is also possible," reveals Manuel Keller.

## Smooth moves for maximum chip removal

What all WTX micro drills have in common is their special pointing which maximises positioning accuracy and excellent centring properties. Their lapped surfaces and the patented chip space grinding also guarantee safe and fast chip removal. Additionally, the spiral internal cooling channels of the WTX Micro drill have been optimised to ensure maximum flow of cooling lubricant, which, in turn, secures improved surface quality of the holes. Among other things, this is thanks to a power chamber, which is fitted to the micro drills from 5xD over the entire shank length, which increases the amount of coolant at the tip while maintaining uniform pressure thus improving tool life.

## Made for maximum precision

With its micro-tool portfolio, CERATIZIT covers the majority of micro-machining applications with high-quality solutions. "This also applies to the WTX - Micro product range, including the new WTX - Micropilot, which makes the impossible possible. On both inclined or curved surfaces with an inclination of up to 50°, there is no need for prior mirroring. If 90° countersinks are required at the bore entry point on straight surfaces, WTX - Micropilot can easily handle the task in a single operation, saving tool changes, time and costs without sacrificing quality." concludes Manuel Keller.

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# A guide to milling efficiency

## The top considerations for precise, productive milling operations

Milling is a fundamental process in the metalworking industry, shaping everything from complex aerospace components to critical automotive parts. But despite its ubiquity, successful milling hinges on some careful considerations. How can manufacturers consistently achieve high accuracy, impeccable surface finishes and cost-effective results? Barry Cahoon, product solution specialist at Sandvik Coromant, offers his advice.

Achieving optimal milling results necessitates selecting cutting tools specifically engineered to meet precise machining requirements. This must take into account factors such as cutting geometry, material hardness and machining strategies. Whether the task involves high-precision shoulder milling, high-speed face milling or complex multi-axis contouring, the performance of the milling tool directly influences the efficiency and accuracy of the entire process.

### What defines successful milling?

For any milling operation to be considered successful, precision is paramount. Achieving tight dimensional tolerances and geometric accuracy is essential for parts to function as intended.

Surface finish is another critical factor. A smooth, clean finish is not just an aesthetic requirement but often a functional one. In industries such as aerospace, where components such as turbine blades or compressor casings must meet stringent performance standards, even slight deviations in surface quality can lead to major problems. Efficiency also comes into play. Milling processes need to maximise material removal rates while keeping machining time to a minimum, all without compromising quality.

Then there's the question of tool life. Manufacturers are constantly seeking ways to extend tool life, which in turn reduces tool changes, minimises downtime and ultimately cuts costs. However, tool life is closely linked to factors like chip control and cutting forces. Poor chip evacuation or excessive forces can cause rapid tool wear, leading to reduced efficiency and suboptimal results.

### Tool selection is the key to milling success

With so many variables at play, selecting the right tool is often the biggest challenge. Different operations, such as shoulder milling, face milling or even high-feed milling, demand tools with specific geometries and cutting capabilities.

Accuracy and precision are the foundation of every milling process. From creating flat surfaces to machining 90-degree shoulders or complex contours, precision is non-negotiable. Proper tool path control, optimised cutting parameters and stable machine dynamics are all essential to ensure that dimensional tolerances are met. Tools like CoroMill® MS60 deliver reliable performance, particularly for shoulder milling, thanks to their true 90-degree shoulder capability.

Efficiency and cost-effectiveness are key considerations in any manufacturing environment. Time saved on machining processes translates directly to reduced costs, making it essential to minimise cycle times without sacrificing quality. In this regard, CoroMill MH20, specifically designed for lightweight milling, offers excellent performance in operations where high-speed material removal is required. Its unique insert design reduces cutting forces, allowing for faster feed rates while maintaining tool stability, particularly in deep

cavity and pocketing applications. This not only increases machining speed but also extends tool life.

Chip control and cutting forces are often underestimated but have a profound impact on the milling process. Efficient chip evacuation is crucial for preventing heat buildup and ensuring a clean cut, which is especially important in applications involving deep cavities or pockets. Insufficient chip control can cause chips to re-cut, leading to poor surface finish and faster tool wear. Modern tool geometries, like those found in high-performance milling solutions, are designed to optimise chip flow, reducing the risk of clogging and improving overall tool longevity. CoroMill MF80 offers smooth chip flow and minimised cutting forces, making it highly reliable for both roughing and finishing operations.

Finally, when selecting tools for demanding materials such as ISO M and ISO S, precision and reliability are non-negotiable. CoroMill MS20, Sandvik Coromant's new 90 xdegree shoulder milling solution, delivers exceptional edge-line security and dimensional accuracy. This ensures high productivity and consistent results, even in challenging applications such as aerospace and oil and gas.

Successful milling hinges on a deep understanding of the interplay between tool design, material properties and machining parameters. By carefully selecting tools that are purpose-built for the task at hand, manufacturers can achieve their goals of improved productivity, lower costs and exceptional part quality. The balance between precision, efficiency, tool life and chip control is what ultimately defines a successful milling operation.

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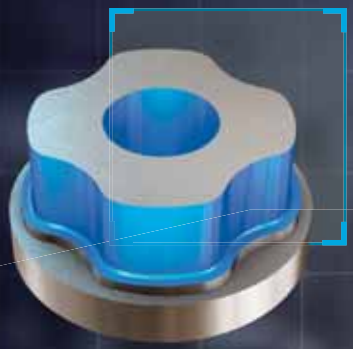

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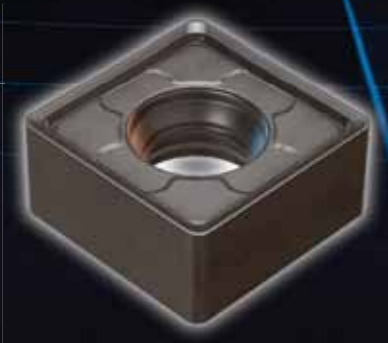

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# A technically sophisticated combination brake housing for self-driving cars

Combined brake housing unites main brake cylinder, brake booster and ABS/ESP in a single part. This component smooths the way for self-driving cars and saves weight. When it comes to machining complex aluminium workpieces, MAPAL's solution expertise is very much in demand.

While self-driving cars are already permitted in various countries, the legal framework for them is still not in place in Europe, where only partial driving automation is permitted. The combined break housing, which unites the main brake cylinder, the brake booster and ABS/ESP in a single part, supports all levels of automated driving. Brake-by-wire is closely related to this, whereby the brake signal is no longer sent hydraulically but rather electrically.

While the combined brake housing is a prerequisite for automated driving, it also has further advantages. Because they are applied electronically, the brakes can be operated more quickly, which results in considerably shorter braking distances in an emergency.

While the first automotive suppliers have already presented all-electric braking systems, vehicles only use a precursor today in the form of the so-called wet-dry system. This hybrid form uses a hydraulic brake at the front and an all-electric system at the rear axle. This redundancy is made possible by a sophisticated central component that combines both worlds in the tiniest of spaces.

## Defined chip breaking for short aluminium chips

Aluminium with a low silicon content of less than one percent is the material of choice for the combined brake housing. To save costs, extruded profiles are used for the most part. Long chips are created during machining due to the grain flow and the low silicon content. To ensure excellent chip breaking when boring and reaming aluminium with low silicon content using PCD blades, MAPAL makes use of application-specific chip-breaking geometries. Their special topology, which was developed with the help of 3D simulations, ensures defined chip breaking and thus short chips, even at low feed rates and machining allowances. This enables maximum performance and process reliability.

With its many bores, the part then looks like Swiss cheese. Each bore has tight tolerance requirements, calling for precision in the IT6 to IT7 range. Because liquid flows through the combined housing, there are high demands on the surface finish. The surface must be free of scoring which can be formed by chips or vibration during machining. Some bores are subsequently anodised to provide more resistance to wear. Rawness of Rz 1 is required to hold this coating.

MAPAL provides customised tools to machine the combined brake housing. These include a special carbide step drill for pre-machining the motor bore. Afterwards, PCD tools with many cutting edges are usually used to achieve the desired surface quality. The different contours of the valve bores are created with a circular milling cutter featuring very high contour accuracy. Various deep bores are also drilled in the aluminium block, which overlap inside the component. Twisted tools with machining depths of up to 30xD ensure chips are removed reliably, so the liquids can later flow unhindered. The deep drilling alone takes up about 20 percent of the cycle time of approximately 15 minutes. Economical bore machining solutions thus have a considerable effect on overall cost efficiency.

Up to five million of the combined brake housing units are produced each year. They are predominantly produced in multi-spindle machines in two clamping setups. A four-spindle machine is preferred due to its high productivity. As a technology partner, MAPAL works with its customers to develop application-specific machining processes and tool packages for these aluminium parts.

**MAPAL Ltd**
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**https://mapal.com**

# New quick-change system for static turning tools

A system for exchanging static turning tools quickly and easily in the turret of a fixed-head turning centre has been introduced by German manufacturer EWS Weigele GmbH, whose products are sold in Britain exclusively by GEWEFA UK. The new Varia.VXT quick-change system joins the Varia.VX range introduced a few years ago for the rapid exchange of driven tools in lathes. Existing users of the latter toolholders can utilise a special VXT interchangeable insert to allow fast static tool change to be incorporated cost-effectively into the same turn-mill centres and multi-tasking lathes.

Designed specifically for repeatability, precision and stability during turning operations, the VXT mechanism is particularly compact, enabling machining to take place very close to the turret, allowing extra flexibility when programming cutting cycles. The holder also exhibits extreme rigidity, which is so important when cutting with the component rotating to prevent deflection of the tool tip and to discourage chatter, leading to a superior surface finish on the workpiece.

At the heart of the toolholding innovation is a double-cone flex system with widely spaced support points. Elasticity designed into the second cone in the rear part of the adapter, combined with additional clamping screws in the shank area, gives the system outstanding damping properties, minimising vibration and maximising tool life. The dual face and taper fit of the toolholder in the EWS interface, which is mounted in the turret, ensures not only high torque transmission but also precise orientation of the tool tip.

Repeatability of tool positioning is ± 2 µm and transmissible torque is up to 160 Nm with the VXT3 interface, or 200 Nm with the larger VXT4, although these figures are likely to be revised upwards following current, ongoing tests. Maximum through-tool coolant pressure is 80 bar. VDI and BMT tool holders are available for star turrets.

Quick-change capability, whether of static or driven tools, drastically reduces tool changeover times, raising productivity. The modular nature of the Varia range helps to make this advantage affordable and is especially well suited to factories where a diverse range of workpieces is produced, which is the case in most subcontract machining shops.

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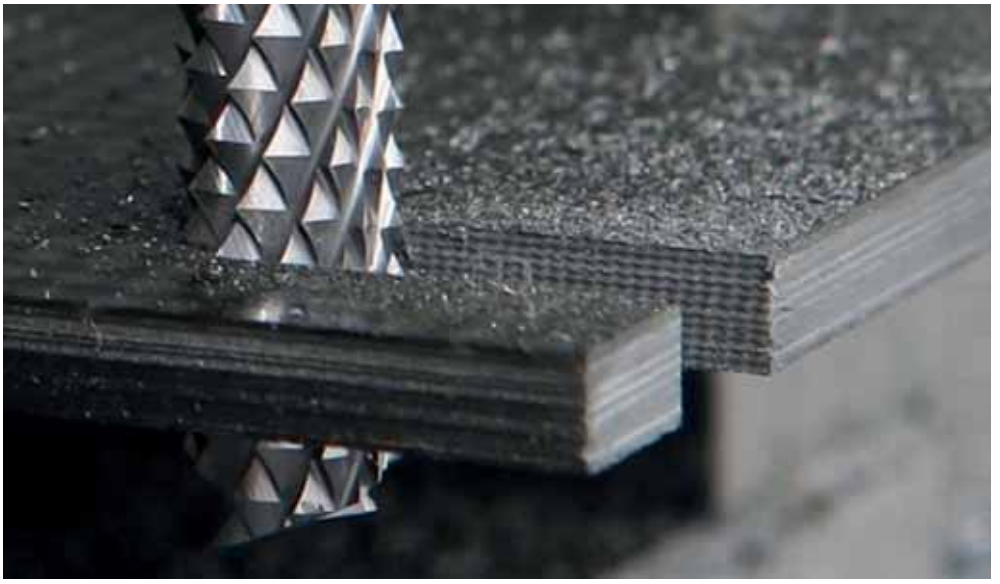
# TaeguTec's diamond tool revolution

## As a leader in cutting tools, TaeguTec has made substantial investments in diamond coating technology to create tools that enhance machining performance across various industries, including aerospace, automotive and defence



TaeguTec introduced its diamond-coated tools eight years ago, initially focusing on solid carbide drills and end mills. Over time, the company expanded its offerings to include indexable inserts for milling and turning applications. Unlike most cutting tool manufacturers that outsource the diamond coating process, TaeguTec has developed an in-house process. This enables greater process control, which in turn drives quality and innovation. Jin Cheon, TaeguTec's round tool product manager, says: "We were one of the first companies to bring diamond coating in-house. This move gave us a competitive edge because we can fine-tune the process to match our customers' needs."

To maximise tool life and performance through reduced tool wear and improved heat resistance, TaeguTec primarily utilises two types of diamond coatings. The Korean manufacturers' micro-crystalline diamond coating is specifically designed for machining highly abrasive materials, such as graphite and ceramics. This micro-crystalline is selected for its exceptional wear resistance. In contrast, TaeguTec also offers a nano-crystalline diamond coating that is ideal for machining composite materials, such as Carbon Fibre Reinforced Plastic (CFRP) and Glass Fiber Reinforced Plastic (GFRP), as it provides smoother surface finishes and reduces the potential for delamination and uncut fibres during machining.

To ensure complete process control and provide the company with scope for development, TaeguTec invested in the HF-CVD diamond coating technology from one of the most advanced diamond coating equipment companies. After rigorous testing and due diligence in the marketplace, the technology was chosen for its superior optimisation for cutting tools.

One major innovation attained via the HF-CVD diamond coating system is the ability to customise the thickness and grain structure of the diamond coating. This enables TaeguTec to optimise wear resistance and cutting-edge sharpness. TaeguTec fine-tunes these parameters to maximise tool life, developing tools from the molecular structural phase.

Of course, the coating is only as good as the coating process, adhesion and tool composition. TaeguTec recognises this and the company has made crucial advancements in cobalt leaching to improve coating adhesion. Cobalt serves as a binder in tungsten carbide substrates, making it a crucial element in carbide cutting tools. Cobalt can interfere with the diamond adhesion process; therefore, TaeguTec removes surface cobalt through an in-house specialist acid treatment process to enhance the bond between the substrate and the diamond coating. Cobalt can act as a barrier between the carbide and the diamond coating.

Additionally, application-specific geometry adjustments play a vital role. TaeguTec designs tool geometries tailored to applications specific to the aerospace, automotive and semiconductor industries, among others. This ensures that the sharpness of cutting edges is maintained while guaranteeing sufficient coating thickness for durability.

TaeguTec's diamond-coated tools also provide significant cost savings in these high-performance industries. Their extended tool life reduces downtime and the frequency of tool replacement, thereby increasing production efficiency.

Another significant benefit is the superior heat resistance of diamond coatings. Compared to conventional carbide tools, diamond-coated tools maintain their integrity at significantly higher temperatures, making them ideal for high-speed machining applications. Heat buildup is a significant issue in precision machining. "We can eliminate most of that issue with diamond-coated tools, allowing for more aggressive cutting speeds without compromising tool performance," Jin Cheon notes.

### Industry solutions

TaeguTec's diamond-coated tools have been widely adopted in industries requiring precision machining. In aerospace, CFRP components in aircraft wings and structural parts require smooth cutting to avoid fibre delamination. TaeguTec's nano-crystalline coatings offer superior edge retention and reduced tool wear.

In the automotive industry, there is a shift from steel to lightweight materials, such as high-silicon-content aluminium alloys. Diamond tools provide the necessary wear resistance and precision. In the defence industry, applications benefit from the arrival of diamond-coated tools, especially in machining radar components and missile guidance systems, which demand extreme precision.

To cater to the diverse demands of the

marketplace, TaeguTec's diamond-coated end mills are available in four different types. The RRFE Series eliminates delamination when machining CFRP while minimising vibration and cutting forces via its innovative geometry, making this range perfect for rough machining applications that demand unprecedented productivity levels. This is complemented by the RCFE range, a geometry applied to multi-flute routers. With six to 12 flutes and a 15-degree helix angle, the RCFE is part of the renowned DiaMill Series from TaeguTec.

For finishing applications, the RCOM range of diamond-coated end mills, available in diameters ranging from 6 to 12 mm, incorporates a left- and right-hand helix, commonly referred to as 'up-down' cutters in some sectors. The RCOM eradicates delamination with its unique geometry design.

TaeguTec has added the new RCDE multi-flute router to the DiaMill range, enhancing capabilities for drilling and slotting. Excellent for rough to semi-finish machining of carbon fibre components, the RCDE presents a geometry that excels at drilling CFRP and shoulder milling operations. All these DiaMill designations have been developed using TaeguTec's TTD610 advanced nano diamond coating grade, which enhances machining stability and tool life while delivering excellent wear resistance with hardness exceeding Hv 8000. This gives all five end mills the highest possible thermal conductivity, impact resistance and stability. Additionally, TaeguTec's innovations in indexable diamond-coated inserts are expected to drive further cost savings. The arrival of diamond-coated indexable inserts eliminates the tradition of only coating solid carbide end mills and drills.

## The future of diamond tools

TaeguTec is continuously improving its diamond coating processes. Ongoing research focuses on enhancing coating adhesion and developing multi-layer coatings to increase bonding strength between the substrate and the diamond layer. The company is also expanding its product lines, introducing diamond-coated indexable inserts for milling and turning applications.

Despite entering the market with diamond-coated tooling just eight years ago, TaeguTec's extensive investment in in-house diamond coating technology and relentless innovation and development culture has positioned it as a leader in precision cutting tools. By leveraging advanced coatings, optimising geometries, refining its adhesion processes and then combining this with its decades of expertise in R&D, the company continues to push the boundaries of tool performance.

As industries evolve, TaeguTec's commitment to innovation ensures that its diamond-coated tools will remain at the forefront of machining excellence.

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# Walter expands its Thrill·tec TC645 Supreme range

Following the successful launch of the Thrill·tec™ TC645 Supreme orbital drill/thread mills for sizes ranging from M4 to M12, Walter is now broadening its offering to include extra metric sizes from M14 to M20 along with their imperial equivalents.

The new arrivals boast the same technical properties as the established versions most importantly, the ability to carry out drilling, chamfering and thread milling with just one tool. But for the first time, users can also benefit from the exceptional efficiency of this 3-in-1 function for larger thread dimensions. For instance, the longer paths of the machining program, which are common for large components, now only have to be travelled once instead of three times. For the end user, this reduces non-productive time by two-thirds.

Like all Thrill·tec™ orbital drill/thread mills, the new versions are also ultra-rigid, suitable for universal use in all ISO materials P, M, K, N and S up to 48HRc and boast integrated internal coolant. This enables reliable chip removal, especially with a high feed per tooth. The new additions extend tool life and ensure that blind and through holes are machined with precision and process reliability. The combination of short machining times and long tool life reduces the cost per thread.

The result is a tool that benefits both mass producers and users with smaller batch-size production. Walter offers special dimensions for delivery with a reduced delivery time of three weeks via its Walter Xpress service. In addition to the exceptional versatility, users from a wide range of industries, such as mechanical engineering, aerospace, automotive and even construction, can benefit from the rapid availability of the tools.

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

# Horn introduces PCD milling cutters for aluminium

Horn has expanded its DM range of Polycrystalline Diamond (PCD) cutting tools by adding a range of mills specifically aimed at manufacturers looking to machine aluminium efficiently. The cutting geometries of a variety of tools, from simple end mills to complex and modular combination tools, have been optimised to meet the challenges of machining aluminium, taking into account factors like chip formation, cutting forces and surface finish.

The tensile strength, elongation, hardness and yield strength of aluminium can be influenced by alloying elements such as silicon, magnesium, copper, zinc and manganese. The material can become soft during machining due to the development of heat, causing it to adhere to and even destroy the tool. It is therefore important that the cutting feed rate and spindle speed, as well as the type and quantity of coolant, are properly matched to the material. Horn's experienced engineers can provide expert advice on selecting the correct machining parameters for specific aluminium alloys.

The DM range from Horn is also suitable for processing other non-ferrous metals and

technical plastics. The PCD grade consists of an advanced mixture of diamond grains of different sizes. As the volume percentage of diamond increases, so do the effective hardness, toughness and edge quality. Strict quality standards are in place in the Tübingen factory in southern Germany to ensure that the tools, with their precision-lasered cutting edges, deliver a high level of performance and long service life.

## Interchangeable-head milling system

Cutting tool manufacturer Horn has introduced a new, modular, interchangeable-head milling system. The DG range has a stable interface between the solid carbide, monobloc cutting head and the shank, allowing accurate changeover to within microns. The shank is either solid carbide or steel and has an internal coolant supply.

The economical, resource-saving tool solution achieves high precision through the use of a guide pin, a trapezoidal thread and a face-and-taper contact. The design reduces the cost of manufacture and shortens setup times for the user. Modularity ensures rapid changeover to a different cutting head, either standard or custom.

Horn stocks the milling system in standard diameters of 10, 12, 16, 20 and 25 mm. Numerous cutter shapes for the most common machining tasks are also available from stock. The user can choose an interchangeable head with a cutting edge length of either 0.5 x diameter or 1 x diameter to suit the application. Horn offers the cutting heads in new carbide grade, RC4P, for productively and economically machining material groups P (steels) and K (cast irons).

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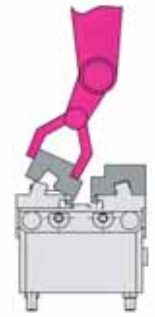
# Centric vices for restricted spaces

A new range of four double-acting, self-centring, centric, vices of particularly compact design for demanding clamping applications in restricted working areas, often found in milling, drilling, grinding, electric discharge machining and fixture building, has been introduced by Roemheld (UK).



The H 4.400 Power Clamp is available in two sizes of base, 64 or 100 mm², which is contoured below the jaws to provide good accessibility to all five sides of a clamped component and promote free chip evacuation during machining. Jaw actuation is either hydraulic or pneumatic. The small and large hydraulic versions deliver 4.8 and 20.3 kN of clamping force respectively, while the pneumatic variants are rated at 4.0 kN and 14.0 kN.

The double-acting piston with backlash-free transmission of force to the two base jaws means that all models are suitable for internal or external workholding. The jaws move synchronously and concentrically, enabling precise workpiece positioning to within five microns. The high rigidity of the vices and their hardened surfaces ensure long-term wear resistance, minimising the need for maintenance.

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# Meet the Tooling Surgeon

**When you send out the S.O.S to NTR's Tool Health Heroes, you can be sure you'll receive the skills and help of all the medics. From the refurbishment of metal cutting tools by the Tool Dentist, the repair and servicing of live tooling by the Driven Tool Doctor, the famous eco credentials of Nurse N. Viro, to the highly regarded skills of the Tooling Surgeon - the team is all set to assist.**

Founded 47 years ago, NTR Ltd has gone from strength to strength since its acquisition by investors in July 2016 and is now thriving under an Employee Ownership Trust. Based in Wetherby, West Yorkshire, the business serves the UK and 14 countries across Europe and boasts an enviable blue-chip customer list in designing and manufacturing new tooling.

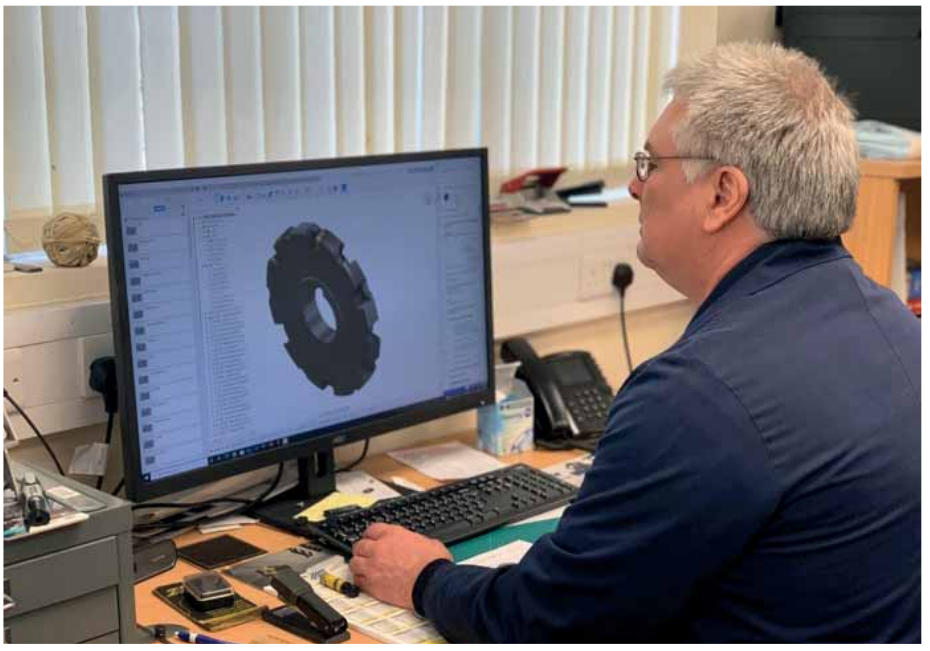
Managing director, Chris Weeds, explains, "At NTR, we sometimes forget how talented our team is and take our in-house skills for granted. However, we have an incredible 468 years of tooling experience in our team, so when we came up with the name 'Tool Health Heroes' it was a true celebration of the talents that customers call on every single day. Some would argue that our most talented hero is the very skilled Tooling Surgeon!"

Like all medics at the top of their game, the Tooling Surgeon, who designs and creates metal cutting tools from scratch, is known for her proficiency, unflappable skills and the ability to bring tooling back to life. Her team feel privileged to have both a varied and a high-end customer list including numerous household names.

## In the operating theatre

By harnessing the team's many years of expertise, Chris Weeds and operations director, Sam Wood, have built a surgery team of which they are rightly proud. Metal cutting tools have always been at the heart of NTR, the refurbishment of very complex tooling is their bread and butter, but their ability to design new tooling, re-engineer existing ones and resurrect discontinued tools, is where their expertise really shines.

Chris Weeds gushes, "I'm an engineer at heart, but the complex geometry that the team work with is just mind-blowing. One day they might be re-engineering a discontinued porcupine cutter with 32 pockets and carbide inserts for a customer in Italy, the next they might be prototyping an end-mill cutter for a leading UK aerospace company."



## The procedure

When the call from a customer comes in and NTR's version of the bat-symbol goes up, the first line team jump into action:

1. A reply is sent via phone or email within 24 hours.
2. The on-call surgeon is notified.
3. Info is gathered by photo, call or meeting - a quote is generated.
4. Requirements are grouped into:
   - New tooling
   - Re-engineered tooling
   - Discontinued tooling
5. A CADCAM drawing and render is created and signed off.
6. A prototype is created if required.
7. The new tooling goes into production.
8. Tooling is sent out for specialised coating/ heat treatment.
9. Inserts may be ordered as the tool enters final inspection.
10. Finished cutting tool is sent out via 24 hour, insured courier.

## Diagnosis

Like an A&E emergency, a tooling request will often come in with some urgency. The team act quickly to understand the customer requirement and the issues causing their workflow. The requests are triaged into the following types – for one-off specials or batches:

**New tooling:** A new project that requires a well-designed tool to enhance production and manufacturing capabilities.

**Re-engineered tooling:** Metal cutting tools that are not fit for purpose that may need issues designing out.

**Discontinued tooling:** If the Tool Dentist can refurbish an existing tool while the Surgeon recreates a new one, then production can continue unabated.

Sam Wood happily makes business "home

visits" too, to discuss specific. He explains, "A production or a toolroom manager will share their frustrations of down-time, but quite often it's a machinist who will have a clear insight into cutting performance, failure modes and issues caused during production."

He continues, "I learned my skills as an apprentice on the shopfloor, specifically milling and grinding in our repair centre. The machinists who taught me, have an incredible ability to use all their senses when working. I like to tap into a machinist's knowledge when redesigning tooling, because they know the tool intimately, and appreciate the foibles of the machine it sits on. This approach is part of the Tooling Surgeon's success."

## Sectors

Working in the sectors that they do, means the NTR Team work to tolerances as low as .005 µm. Customers in nuclear, automotive, aerospace and defence rely on the Tooling Surgeon for true precision engineering capabilities, but this is only half the story.

Engineering manager, Mick Sykes has over 40 years' experience alone, in everything from designing new tooling through to dies and punches, and fixtures and jigs. It is Mick's can-do attitude that makes him a key member of the NTR Tool Health Heroes, "Like most engineers, I was very hands-on when I started out. As technology developed, I saw that CAD systems were the way forward. Being able to show customers a 3D render of the finished tooling, was a game-changer for NTR and now our CADCAM capability is paramount to our success in sectors notorious for exacting standards."

Mick Sykes elaborates, "Thanks to our decades in the field, we also have a network of trusted partners for specific materials, unusual coatings and the supply of OEM parts. No matter how precise we manufacture the tooling, without the skill of these experts specialising in hardening, tempering, and treating, we could not meet the standards required."

## Student doctors

One of Sam Wood's tasks is to recruit more heroes to join the team. As a one-time

apprentice of NTR, he is a believer in bringing young people into the business. "I completed my apprenticeship with NTR in 2012 and I've worked on so many amazing projects. Within my first year of earning my superhero cape, I had tackled tooling projects in electronics, transport and defence. If you had told me the day I left school, which customers I would be working with now, I would never have believed it!"

Mick Sykes agrees, "Last year I worked on a very special die project working in sheet silver of all things. I never imagined I'd be creating the punch and dies for a set of luxury photo frames, but here we are. I recently visited a famous London department store and there the frames were! At NTR, our capabilities are huge – I'd recommend an NTR Apprenticeship to any young person to join our band of heroes."

## Working with the Tool Dentist

NTR is a true one-stop toolroom and the teams often work in collaboration. A recent customer was in urgent need of a batch of new porcupine cutters discontinued by the OEM. Suddenly, factory output had stalled, and the company was about to miss significant deadlines.

In such cases, the Tool Dentist can often intervene, while the designing happens in the operating room. Charlie, manufacturing manager says, "As manufacturers ourselves, we know what down-time means, so if we can save you from any such failures and keep you going, we will 100 percent do that. As Tool Health Heroes, we regularly work with the Tool Surgeon, repairing and refurbishing your damaged tooling, with a short lead-time to keep production running."

## The final check-up

After any surgery, the patient will need a final inspection before being discharged - metal cutting tools are no different. Throughout the production procedure the team measure, check and verify at various stages to ensure the new tooling is measuring up to standards.

Heat treatments, finishing and coatings can cause changes to the tooling, so final inspection involves a rigorous system of checks using the Royal camera to check geometry and the Trimos digital vertical gauge to measure height as part of the wider metrology. As soon as your new tooling has passed this thorough final inspection, the 'patient' is signed off, discharged and expedited out to you.

## And finally...

Chris Weeds concludes, "I'm very proud of the NTR team and the standard of work from the Tooling Surgeon and the rest of our Tool Health Heroes. If you have a project coming up that requires the design and manufacture of precision metal cutting tools, then get in touch, we really are here to save the day."

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# Ultimate 2-in-1 Dot Peen Marking Station


The Connect Series Combo offers a benchtop and handheld marking system in one, seamlessly switching between bench and handheld modes in seconds and no tools are needed. It allows you to mark both small parts on a bench and large components on the go.

Mark anything from alphanumeric text, incrementing numbers, date codes to logos and datamatrix\QR codes with ease. Templates with fixed and variable data fields can easily be set up and saved for future use. Enjoy wireless freedom with a secure 10 metre Wi-Fi range and a long-lasting 22V lithium-ion battery when using in handheld mode. Effortlessly handle uneven surfaces with the patented IDI feature that adjusts to component surface height differences of up to 8 mm enabling consistent quality marking across the whole mark.

The column has a quick shift function for very fast height adjustment of the column when changing to different sized parts. The Combo has a marking window of 120 x 60 mm and the column can mark parts up to 290 mm tall as standard with an optional 150 mm column extension.

The T base slots allow for easy fixing including the optional heavy duty rotary axis for marking around the diameter of cylindrical parts. Parts up to 10 kg can be marked with a max diameter of 80 mm. Parts can be gripped from either the inside or outside chuck jaws. If you are nameplate marking, an optional nameplate holder is also available for easy positioning and marking of nameplates.

One of the strengths of the Combo is its new data management capabilities. A growing number of customers need a marking system

to communicate with their ERP systems to both import marking data and to export production data after marking for quality purposes.

CSV files can be imported directly to the controller and configured for marking be it a single job or scheduling a day's marking. A barcode reader can be used to read and populate the data from a datamatrix or QR code into the controller and can also be used to open a file offering versatile and powerful data management. Ethernet connectivity comes as standard as well as USB.

The Connect dot peen series from Technomark has redefined the boundaries of permanent marking to give you complete marking freedom and access to data. When used in handheld mode, the ergonomically designed marking head provides a completely wireless system that is lightweight and easy to use and orientate in any position.

This design focuses on mobility and convenience with a large, intuitive, 10" colour touch screen controller, with easy to use software so anyone can use the marking system in a matter of minutes.

The latest lithium battery technology can give hundreds of marks to manage high

volumes of marking before a recharge is required. The built-in battery monitoring system will indicate when battery power is down to 10 percent at which point a power cable can be plugged in to allow hybrid use so there is no interruption to marking.

When in handheld mode the marking foot has 4 magnets for secure locating of the head when marking. The multifunctional non-slip support foot also features a V shaped foot to allow marking on curved surfaces as well as an optional support guide ideal for marking on the edge of sheet metal or plate. Deep marking is easily achieved ideal for applications which are painted or galvanised after marking.

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 the company 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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# Traceability marking for motorbikes and bicycles


Motorbike and bicycle owners prioritise safety gear and responsible riding and rightly so. However, traceability marking is a critical yet underappreciated aspect of ownership. In this article, Pryor marking delves into the importance of traceability and its impact on theft prevention, accident investigations and overall vehicle security.

## What is traceability marking?

Sometimes referred to as security marking, Traceability marking involves the application of unique identifiers, such as serial numbers or 2D codes, to various components of a motorcycle or bicycle. These security markings can be dot peen marked, etched, stamped, or laser-engraved onto frames, engines, or other key parts. By incorporating these markings, manufacturers and law enforcement agencies can track the provenance of a vehicle, making it easier to identify stolen bikes, recover lost property and investigate accidents.

## Why is traceability marking important?

Traceability marking can enhance the safety and security of two-wheeled transportation. It's a small step that can have a significant impact on the lives of riders and cyclists. Two key areas where security marking can have a big impact include theft prevention and accident investigation.

## Theft prevention

**Deterrence:** Visible markings can deter potential thieves, as it makes it harder to sell or dismantle a stolen bike.
**Identification:** Unique identifiers help law enforcement quickly identify stolen vehicles and return them to their rightful owners.
**Lowering insurance premiums:** Because security is a major influencer of insurance

prices, adding an extra layer of security to your motorbike can have a significant effect on the cost to insure the bike.

## Accident investigation

**Vehicle identification:** In the event of an accident, traceability markings can help identify the make, model and year of the vehicle, aiding in accident reconstruction and insurance claims.
**Product recall:** If a safety issue is discovered, manufacturers can use traceability information to quickly identify and recall affected vehicles.

## How can you promote traceability marking?

**Consumer awareness:** Educate consumers about the importance of traceability marking and encourage them to look for unique identifiers when purchasing a new or used motorcycle or bicycle.
**Industry standards:** Support the development and adoption of industry standards for traceability marking, ensuring consistency across the industry.
**Law enforcement collaboration:** Work with law enforcement agencies to raise awareness about the benefits of traceability marking and to develop effective strategies for using this information in investigations.

## Why Dot Peen markers are popular for VIN marking

Dot peen markers are a popular choice for Vehicle Identification Number (VIN) marking due to several key advantages.

Firstly, they offer high precision and durability. The impact of the marking needle creates permanent indentations on the metal surface, resistant to wear and tear, abrasion and harsh environmental conditions. This ensures the VIN remains legible throughout the vehicle's lifespan. Secondly, dot peen marking is versatile and can be used on a wide range of materials, including metals of varying hardness and thickness.

Thirdly, the process is relatively fast and efficient, allowing for high-volume production lines. Finally, dot peen markers are relatively affordable compared to other marking methods, making them cost-effective for manufacturers. These factors contribute to the widespread adoption of dot peen markers as one of the preferred method for VIN marking in the automotive industry.

## How can you mark hard to reach places on a bike?

The PortaDot 60-30 has an optional mask designed for just this purpose. The special mask allows the stylus to reach otherwise hard to reach areas on bikes and motorcycles to permanently mark them with a serial or VIN. The PortaDot 60-30's versatility and portability makes it the ideal machine for security marking motorbikes and bicycles.

## Conclusion

In conclusion, traceability marking is a vital but often overlooked aspect of two-wheeled vehicle safety. By embracing this simple yet effective measure, we can significantly enhance the security of our motorcycles and bicycles, deter theft and improve the efficiency of accident investigations. It is crucial for manufacturers, consumers and law enforcement agencies to work together to promote the adoption and effective use of traceability marking, ultimately creating a safer and more secure environment for all two-wheeled riders.

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# TLM Laser enhances job shop services with new digital access point for UK subcontractors

TLM Laser, a trusted supplier of industrial laser systems across the UK and Ireland, has announced the launch of a newly redeveloped website and a brand-new laser marking job shop section with a streamlined enquiry process designed with engineering subcontracting customers in mind.

The move follows increasing demand from UK manufacturers for high-precision laser marking and engraving services that offer both speed and compliance. With many businesses needing batch or prototype marking without investing in a full in-house system, TLM Laser's Job Shop has become an essential route to high-quality, application-specific laser processing.

"Our goal has always been to support British and Irish manufacturing with the right laser technology at the right time," says Andy Toms, director at TLM Laser. "For those in need of subcontractor services, flexibility and turnaround are key. With our new website and dedicated job shop section, customers can quickly understand what we offer, how the process works, and submit an enquiry to tell us about their project in a matter of minutes."

Behind the scenes, the process is designed for speed and simplicity. From initial enquiry to final delivery, customers are supported by laser specialists who advise on material compatibility, file preparation, and optimal marking parameters. Once approved, parts are processed using advanced systems from FOBA, part of TLM's partner network.

At the heart of TLM's Laser Job Shop are two precision-engineered FOBA workstations each configured to deliver the quality, accuracy and repeatability expected by component manufacturers. The FOBA M1000 system, fitted with a Y-Series Y.0300 30-watt pulsed fibre laser, is ideal for marking small to medium-sized batches of metal and plastic components. Its compact, Class 1 benchtop enclosure ensures safe, ergonomic operation and rapid part turnaround, particularly for prototyping or short-run production.

For larger components or higher throughput needs, the FOBA M3000 workstation houses a Y-Series Y.0200 20-watt laser, offering increased working area and programmable multi-axis movement.

Both systems are equipped with FOBA's vision-assisted Holistic Enhanced Laser Process (HELP) technology and capable of high-contrast, permanent laser marking whether for data matrix codes, UDI-compliant identifiers, or brand logos. The systems support a broad range of materials, including stainless steel, aluminium, titanium and industrial-grade plastics. These capabilities ensure customers receive the same high-end marking performance expected from fully integrated production lines, without the capital investment.

"We know that manufacturers can't afford a bottleneck, especially when a marked component is holding up an assembly or dispatch," Andy Toms explains. "That's why we built the new Job Shop section with full transparency around capabilities, file formats and turnaround expectations so customers aren't left guessing."

The newly launched online enquiry form allows customers to upload part details and specify batch sizes. From there, a TLM engineer reviews the job and responds with guidance, pricing, and realistic lead times.

As UK industry continues to push for greater traceability, compliance and brand visibility, laser marking has shifted from a niche capability to a vital step in modern manufacturing. TLM Laser's Job Shop fills the gap for engineers and smaller manufacturers who need top-tier laser results without capital investment. The brand new TLM Laser website now makes that process a seamless experience.

For more information or to submit a job, visit:
***www.tlm-laser.com/jobshop***

**TLM Laser Tel: 01527 959 099**
**Email: sales@tlm-laser.com www.tlm-laser.com**

# From scrap to sustainability

## Waste Mission marks 40 years of waste management made simple

In 1985, Philip Newman took a decisive step that would shape the next four decades. Leaving behind a career in retail, he took over a small metal recycling firm and renamed it Alchemy Metals. What began with a clear focus on scrap metal in Hertfordshire has become Waste Mission, a trusted national partner for sustainable waste management. Now celebrating 40 years in business, the Stevenage-based, family-run company has built a reputation on practical service, straight-talking advice and long-term relationships. Its journey from specialist metal merchant to full-service waste management provider mirrors the evolving needs of British manufacturers and reflects a growing demand for smarter, more sustainable solutions. Today, Waste Mission operates nationwide, supporting some of the UK's most advanced manufacturing sites with tailored, end-to-end waste services.

### A strong foundation in metal

Metal recycling has always been the backbone of the business and remains central to Waste Mission's work today.

In the early days as Alchemy Metals, the company built its name on fair pricing, reliable service and hard work. That simple approach has consistently earned trust and the business has steadily expanded from a single yard to a thriving nationwide operation.

Philip Newman and his team became known not just for volume, but for integrity. Alchemy Metals even played a key role in shaping legislation, helping to support the introduction of the Scrap Metal Dealers Act 2013.

"When material comes into us as scrap, it leaves us as product," says Philip Newman. "That's been our approach since day one and it still is."

Today, Waste Mission continues to work closely with UK foundries, championing a local-first approach that strengthens British manufacturing. Metal remains a core offering, handled with the same care, knowledge and precision that has defined the company from the outset. For example, precision engineering clients have benefited from bespoke metal containment systems and upgraded segregation methods that have maximised both recovery and financial return, turning what was once a waste stream into a profitable asset.


### Evolving to meet new needs

The shift from Alchemy Metals to Waste Mission was a natural extension of their expertise in metal, building on that strong foundation to meet a broader range of customer needs. Building on decades of trust and expertise was about meeting growing customer demand.

"As long-term clients began asking whether the company could take on general waste, plastics, or packaging, the answer was increasingly: yes", says Philip Newman, "We were already supporting some customers with their wider waste needs, it was a natural next step to do more."

The rebrand to Waste Mission, launched in 2024, reflected that evolution. The name may have changed, but the people, the principles and the performance remain the same. Waste Mission now offers a single point of contact for all waste streams, while continuing to lead in scrap metal recovery.

"When you walk into a factory as Alchemy Metals, people assume you only deal with metal," Philip Newman explains. "Now, as Waste Mission, we open the door to conversations about all waste. But metal will always be part of who we are."

### Built by people

At the heart of Waste Mission's success is a

loyal and experienced team. Some employees have been with the business for over 30 years and their knowledge, consistency and commitment make the service so dependable. "The company runs itself these days and that's down to the staff," states Philip Newman. "They make it happen."

Support goes both ways. From regular bonuses and pay rises to cost-of-living support and supermarket vouchers, Waste Mission looks after its people, recognising that strong performance starts with strong relationships.

This people-first culture has created a work environment where individuals feel valued, trusted and empowered to deliver. Whether in the yard or the office, team members take pride in their work, which shows in Waste Mission's lasting relationships with clients.


## Turning waste into value

Waste Mission sees waste as a resource. Whether it's scrap metal, circuit boards or mixed recyclables, the goal is to recover value wherever possible. For metals, that means upgrading materials and ensuring they're sold to the best end users. For other waste streams, it's about finding local reuse options or recycling routes that align with the company's principles.

In sectors like food manufacturing, the team has delivered innovative ways to handle complex waste streams, ranging from packaging contaminated with organic material to raw meat waste, ensuring complete diversion from landfill for clients and compliance with circular economy goals.

The business has also expanded its capabilities in areas such as WEEE and precious metal recovery and its recently launched customer portal makes compliance and reporting easier for clients. With one login, customers can monitor recycling rates, download compliance documents and track service history across all sites.

"Sustainability isn't just about landfill," says Philip Newman. "It's about how you work, who you work with and how you add value at every stage."

## Trusted by UK manufacturers

Waste Mission supports a wide range of manufacturers across the UK, including long-standing partners such as Trouw Nutrition, SRD Engineering and Inspired Pet Nutrition. These relationships are built on reliability, results and a clear understanding of what businesses need from a waste partner.


For many clients, the partnership began with metals and grew over time. The ability to scale service and adapt solutions keeps customers coming back, whether streamlining how swarf is handled in a precision engineering environment or ensuring that a food manufacturer can meet ambitious ESG targets through full waste traceability and 100 percent diversion from landfill.

## Built for the future

The Stevenage site has steadily expanded over the years, with neighbouring units added to accommodate growth. A northern hub is next on the roadmap and plans are in motion to support long-standing clients across their European operations.

The newly launched customer portal is a game-changer for clients looking to simplify data capture and compliance. Beyond current functionality, there are ambitions to integrate further analytics and service reporting, making it an even more valuable tool as customer needs evolve.

There's also ongoing investment in infrastructure and site layout, designed to improve the flow of materials through the site, increase efficiency and support future growth.

## Ready for 2025 and beyond

The year ahead brings fresh challenges. Simpler recycling legislation will place new requirements on waste separation. Landfill costs are rising and businesses are under more pressure than ever to prove their environmental performance.

Waste Mission is ready. With four decades of practical experience, a growing team and a clear point of contact model, it offers manufacturers a reliable, transparent way to meet their waste responsibilities and find value along the way.

## Looking ahead

As Waste Mission marks 40 years in business, it does so with confidence, clarity and continuity. The name has changed and the capabilities have expanded, but the commitment to service, trust and getting the job done remains the same.

Metal recycling is where it started and it remains a driving force. Today, with 40 years behind it and sustainability at the forefront, Waste Mission continues to turn waste into value, every step of the way.

One team. Together. On one Waste Mission.

**Waste Mission**
**Tel: 01438 745307**
**https://wastemission.com/**

# Precision and efficiency redefined

## Introducing the New FORMTRACER AVANT Model FTA-H3000

**Bringing next-generation surface & contour measurement to industries with unmatched accuracy, efficiency and adaptability**

Precision measurement reaches new heights with the launch of the FTA-H3000, a groundbreaking device that streamlines the measurement of surface roughness and contours in a single operation. Mitutoyo's Formtracer AVANT series now welcomes the FTA-H3000, a model that seamlessly integrates surface roughness and contour measurement into a single drive unit. This addition completes a robust lineup, which includes the FTA-S3000 for surface roughness, the FTA-C3000 and FTA-C4000 for contour analysis and the FTA-D3000 and FTA-D4000 featuring dual drive units. With the Formtracer AVANT series, Mitutoyo offers a versatile and comprehensive range to meet the demands of precision measurement.

Traditionally, measuring surface roughness and contour required two separate devices or drive units. The FTA-H3000 enables both measurements in just one operation, significantly reducing user error while maximising productivity. Designed for manufacturers and professionals who demand high efficiency without compromising precision, this cutting-edge advancement streamlines processes like never before.

One of the defining features of the FTA-H3000 is its exceptional Z1 axis measuring range of 16 mm, a 3.2-fold increase compared to the previous model. This enhancement allows the device to measure workpieces with large height differences effortlessly, offering unparalleled versatility for diverse applications. Whether dealing with intricate components or larger structures, the FTA-H3000 enables precise, high-quality results.

Accuracy lies at the heart of the FTA-H3000. With a remarkable Z1 accuracy of (0.5+0.02H) µm and exceptionally low straightness noise, users can have complete confidence in their measurement data. The system is compliant with ISO 21920 and other industry standards, ensuring reliable and consistent performance. Additionally, its stylus attachment and removal mechanism allows for effortless inter-changeability, offering a range of styli with different geometries to meet various measurement needs.

A key advantage of the FTA-H3000 is its seamless retrofit capability, providing existing Avant customers with a simple and cost-effective upgrade path. The "Hot Swap" function enables users to replace their drive units quickly and effortlessly using a tool-free rotary clamp system, ensuring minimal downtime and uninterrupted workflow. This retrofit option extends the lifespan of existing equipment while integrating the latest advancements in measurement technology.

Mitutoyo is a global leader in the field of precision measuring equipment. As a comprehensive manufacturer of precision measurement instruments, the Mitutoyo name is known around the world. Its products have a leading market share both in Japan and overseas and continue to be the choice across industries and nations. Major companies all over the world put their trust in the company.

### Pocket-size precision for easy on-site use

The brand-new SJ-220 Surface Roughness Tester is a breakthrough in precision measurement technology, designed with unmatched user-friendliness, versatile functionality and seamless compatibility. Built to deliver accurate, reliable measurements, the SJ-220 combines portability with an intuitive interface, making it ideal for beginners and professionals, who require both precision and convenience in a single, adaptable tool.

The SJ-220 combines sophisticated technology with user-friendly design, starting with a 2.8-inch colour LCD touchscreen that's easy to navigate. This responsive display allows users to swipe through menus effortlessly, while the one-touch measurement functionality simplifies the testing process for faster results. Compact and battery-powered, the SJ-220 is highly portable, making it perfect for on-the-go use. Plus, it's built to be globally accessible, offering support in 25 languages and full compliance, among many others, with the latest ISO 21920 standard, ensuring accurate, standard-compliant results worldwide.

Designed for ultimate compatibility, the SJ-220 increases measurement efficiency with its bi-directional communication capabilities. This feature allows users to make real-time adjustments and transfer data instantly, streamlining the entire process. By connecting it with the "Wireless Unit for Measuring Instrument U-WAVE-TIB," the need for cables is eliminated, ensuring a more efficient and flexible workflow. Whether in the lab or on the production floor, the SJ-220 integrates smoothly with existing systems, making it an ideal choice for professionals who need fast, uninterrupted measurement results.

Mitutoyo's free "SJ Communication Tool" software increases measurement flexibility by providing robust data analysis, reporting and storage on a PC. It also supports detailed post-measurement evaluation, which is essential for quality control.

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# Smarter, faster, together

## The Deltron and Optivu Cobot metrology revolution

In the heart of a bustling factory floor, where the hum of machinery blends with the rhythm of production, a quiet revolution in metrology is unfolding. The Deltron 370/520 Coordinate Measuring Machine (CMM), a marvel of engineering, stands shoulder-to-shoulder with the sleek, agile Optivu Cobot; a collaborative robot designed to redefine tactile measurement. Together, they form an alliance that transcends traditional inspection processes, merging human ingenuity with robotic precision to create a future where quality control is faster, smarter and effortlessly integrated into the workflow.


The Deltron 370/520 CMM is no ordinary measuring device. Compact enough to nestle into the tightest shop floor corners, it defies its modest footprint with capabilities that rival larger, bulkier systems. Its granite table, robust and unyielding, supports components weighing up to 200 kg, while its delta mechanism glides with silent precision, capturing measurements down to a staggering 0.1 µm resolution. What truly sets it apart, however, is its resilience. Built for environments where temperature swings and dust are the norm, the Deltron thrives where others falter. Embedded thermal sensors whisper real-time adjustments to the machine, compensating for ambient fluctuations without missing a beat. This is tactile metrology unshackled from climate-controlled labs, a CMM that works as hard as the production line itself.

Enter the Optivu Cobot, a collaborative robot that dances around the Deltron with the grace of a seasoned partner. Unlike traditional industrial robots confined to cages, the Cobot operates freely alongside human technicians, its collision detection sensors ensuring safety without sacrificing speed. Armed with Force Torque Sensors (FTS), it handles delicate components with the finesse of a skilled inspector, positioning them on the Deltron's stage with micrometre-level accuracy. But this is no one-trick automaton. When not engaged in measurement tasks, the Cobot pivots seamlessly to machine tending, assembly, or even packaging. It is a versatile multitasker that amplifies productivity across the factory.

Together, the Deltron and Optivu Cobot weave a seamless narrative of efficiency. Picture this: a machined component, fresh from the Computer Numerical Control (CNC), plucked by the Cobot's gripper and guided to the Deltron's granite table. The CMM's probe sweeps across the part, mapping dimensions with surgical precision, while the Cobot anticipates the next move, ready to rotate or reposition the piece as needed. ViTouch3D software, the brain behind the operation, translates raw data into actionable insights, generating reports with GD&T tolerances and pass/fail statuses in moments.


What makes this partnership extraordinary is its adaptability. In a world where production lines evolve daily, the Deltron and Optivu Cobot are built to grow. The Deltron's modular design allows for future upgrades, while the Cobot's AI-driven software learns and adjusts to new workflows. Whether measuring intricate aerospace components or bulky automotive parts, the duo scales effortlessly, ensuring that today's investment remains tomorrow's competitive edge.

In a landscape where precision and speed are paramount, the Deltron 370/520 CMM and Optivu Cobot are more than tools they are partners in progress. They represent a leap toward smarter manufacturing, where quality control is no longer a bottleneck but a catalyst. To see them in action is to glimpse the future of metrology, a future where human and machine collaborate not as rivals, but as allies.

For manufacturers seeking a glimpse of this future, Optimax Metrology UK stands as the gatekeeper. Its demos are not mere presentations but immersive experiences offering a chance to witness the Deltron's thermal-compensated accuracy and the Cobot's fluid motion in real time. Optimax's experts, steeped in the nuances of automated metrology, tailor solutions to unique challenges, proving that this technology isn't just for industry giants but for any operation hungry for efficiency.

Don't let this vision remain abstract. Contact Optimax Metrology UK and let it guide you through a demo that could redefine your approach to measurement. The revolution isn't coming, it's here waiting for you to take the first step.

# Simple edge break measurement system launched

Is your chamfer/Edge break right? Is it deep enough? Is it aligned to the sides? Are the angles correct? To determine all of this quickly and easily is challenging, unless you are measuring surfaces in three dimensions. Measuring the planes of left and right sides, with the plane of the chamfer between means you have 3D certainty on the geometries of the part. New to the UK, the handheld 4D InSpec from Optimax provides this certainty.

The 4D InSpec Surface Gauge is a pioneering handheld instrument for non-contact measurement of surface features and defects. It offers micrometre-level resolution, portability and affordability, bringing high-resolution 3D measurement to factory floors and machine shops. It is a vibration-immune 3D surface geometry gauge, and can be used to measure chamfers, rounding and radius on manufactured parts. Because of its speed and precision, it can be used on a robot arm and measure multiple part locations in a rapid routine.

This device also quantifies various surface imperfections, such as pits, scratches and dents, up to 2.5 mm deep or tall. It surpasses visual comparison techniques in accuracy and repeatability, making it a valuable tool for quality control. The 4D InSpec can be used handheld to access tight corners or large surfaces and an optional fold mirror allows it to function like a borescope for accessing blind holes.

With its rugged design and versatility, the 4D InSpec is suitable for a wide range of part geometries in challenging environments. It includes user-friendly software that automatically analyses defects and generates detailed 2D and 3D visualisations. The system can be configured for workstation use or mounted on a robotic manipulator for automated measurements, supporting easy data transfer for rapid pass-fail analysis.

4D InSpec is available now in the UK and Ireland from Optimax.

**Optimax**
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**www.optimaxonline.com**

# Bowers Group transitions to sustainable packaging

Bowers Group is proud to announce a major step forward in its sustainability journey with the introduction of new eco-friendly and fully recyclable packaging cases for its range of Bowers branded products. This marks a significant step forward in the company's ongoing commitment to reducing its environmental footprint and achieving net zero emissions.

Martin Hawkins, managing director at Bowers Group, comments on the transition to more sustainable packaging: "Bowers Group has always been a pioneer in delivering high-quality metrology solutions and this shift to sustainable packaging is a natural extension of the company's ethos of striving for excellence. By choosing to move into more sustainable packing cases, we are setting a standard in the precision measurement industry and encouraging environmentally conscious practices throughout our processes. It's a project that I am particularly proud of and thank the team for their hard work in getting us here."

The move to the new, sustainable cases is a key part of Bowers Group's broader sustainability strategy and journey to net zero. Made from a composite material containing approximately 70 percent renewable resources, including glucose, natural waxes, minerals and fibres, these cases significantly reduce dependence on fossil fuels and promote circular material cycles through full recyclability. By adopting this eco-conscious packaging, the company is strengthening its commitment to lowering carbon emissions, reducing waste and contributing to a more sustainable manufacturing industry.

In addition to its eco-friendly packaging, Bowers Group is reducing paper waste by replacing printed documentation with QR code access on box labels. This allows customers to instantly view QuickStart instructions and product information digitally.

As part of Bowers Group's long-term plan to achieve net zero by 2050, every aspect of the business is being evaluated for opportunities to minimise environmental impact. The shift to sustainable packaging represents a key action point within the company's green strategy, aligning packaging solutions with sustainable practices while maintaining high standards for product protection and customer satisfaction. Bowers Group is delighted to introduce its new Mobile Metrology Showroom, delivering precision measurement demonstrations directly to businesses across the UK and the Republic of Ireland. Designed to provide an on-site and direct experience, the brand-new facility gives customers the opportunity to explore industry-leading precision measurement solutions within their own working environment.

## Bowers Group unveils next-generation mobile metrology showroom

Martin Hawkins, managing director at Bowers Group, says: "We are proud to introduce our all-new Mobile Metrology Showroom, bringing precision measurement solutions directly to businesses across the UK. Following a brief hiatus after retiring our previous vehicle, we're excited to be back on the road, delivering on-site demonstrations once again. With a wide range of innovative metrology equipment onboard, we encourage anyone considering an upgrade to their quality or inspection processes to book a visit."

Leading this exciting initiative, Ryan Clark has joined Bowers Group team as demonstration manager, bringing his expertise and passion for metrology to businesses across the UK. He will be on the road, delivering in-depth demonstrations of Bowers' metrology solutions, including connected measurement technology, bore gauges, vision systems and more.

The Mobile Metrology Showroom is part of Bowers Group's drive to providing accessible, practical, and expert-led demonstrations, ensuring customers can see, in-person, how the latest innovations can enhance their inspection processes.

To arrange a visit from the Mobile Metrology Showroom and experience Bowers Group's innovative connected metrology solutions first-hand, contact **rclark@bowersgroup.co.uk** today.

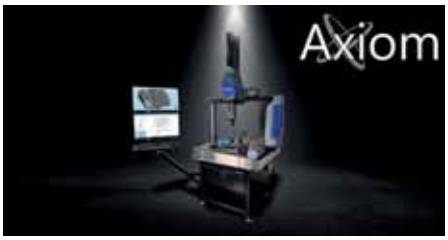
**Bowers Group**
**Tel: 01276 469866**
**Email: sales@bowersgroup.co.uk**
**www.bowersgroup.co.uk**

# Aberlink unveils the Next evolution of the Axiom CMM

Aberlink, a pioneering force in Coordinate Measuring Machines (CMMs), has announced the launch of the third-generation Axiom CMM. Building on a legacy that began in 1995 with the groundbreaking launch of the original Axiom, the first fully error-mapped CMM sold at a fraction of the cost of competitors, Aberlink continues to redefine precision, performance and value.

The Axiom too, introduced in 2004, quickly became Aberlink's most popular CMM, thanks to its relentless design evolution and unmatched capabilities. However, as Aberlink's product range expanded with sleek, modern machines like the Horizon, Halo and Extol, the Axiom too's aesthetic began to show its age. Now, Aberlink has seamlessly blended the Axiom's proven reliability with cutting-edge innovation and a fresh, contemporary design.

The new Axiom CMM is a testament to Aberlink's commitment to in-house design and manufacturing, a philosophy that has driven the company's success from its base in the picturesque Cotswold hills of Gloucestershire. This latest iteration features:




- **Enhanced stiffness:** A brand-new right-hand-side bridge assembly with increased Y-axis air-bearing separation delivers greater accuracy.
- **Faster measurements:** Improved drive assemblies enable the new Axiom to measure parts up to 25 percent faster than its predecessor.
- **Shop-floor durability:** The latest linear encoders significantly improve dirt immunity, ensuring reliable performance in demanding environments.
- **Modern aesthetic:** The new Axiom now matches the sleek, contemporary look of Aberlink's Halo and Horizon CNC CMMs, bringing it in line with the rest of the range.

Marcus Eales, proprietor of Aberlink Ltd, comments: "The Axiom has always been at the heart of our product range and this latest iteration embodies everything we've learned over nearly three decades of innovation. By combining our proven design principles with the latest advancements, we've created a machine that not only meets the needs of today's manufacturers but also sets a new standard for value and performance."

At the core of the new Axiom CMM is Aberlink's proprietary 3D inspection and CAD software, continuously developed in-house and updated throughout the year. Aberlink customers benefit from free software upgrades and no annual maintenance fees, with the latest versions available for download directly from the Aberlink website.

Additionally, if customers need help measuring their parts, they enjoy free-of-charge technical support via phone, email, or direct remote connection to their CMM.

**Aberlink Ltd**
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**www.aberlink.com**

# The ideal press brake to meet all production requirements

Automatic tool change and setup are the two most evident strengths of the B3.AU-TO Salvagnini press brake. Designed by combining the features and benefits of both electric and hydraulic solutions, the B3.AU-TO significantly increases the availability, autonomy and flexibility of the press brake regardless of batch size, bending geometry, or operator experience.

All manual press brakes are affected by setup and tooling times, as well as downtimes related to sheet metal supply, programming, handling and part inspection. The B3.AU-TO from Salvagnini, available in three models, with bending length of 4 metres and maximum force of 170, 220 or 320 tons, is the definitive solution for companies wanting to overcome these limits and respond to a dynamic market that increasingly demands small batches, kit production, or single parts with very short lead times. The AU-TO automatic tool changer and ATA automatic tool adjuster, which adjusts station lengths, significantly reduce setup time, boosting autonomy and productivity while shortening lead times.


*Scalable-automation press brakes: In addition to the AU-TO, ATA, ATA.L and MVM configurations, Salvagnini also offers a wide range of standard press brakes. The Salvagnini B3 press brake is available in 20 models, from 2 to 6 m in length and from 80 to 400 tonnes in bending force.*


## Maximum flexibility, minimum footprint

The patented Salvagnini automatic upper and lower tool change system is the true distinguishing feature of the B3.AU-TO. AU-TO reduces setup time and increases the availability of the B3. Operations are fast and take place in-cycle, even in masked time, contributing to the overall efficiency of the press brake.

The tool magazine is enclosed and located in the rear section of the B3. It can hold up to 24 metres of tools, each up to 1,000 mm long, without requiring segmentation, making this press brake the smallest-footprint solution on the market. AU-TO does not exclude the functionalities of ATA, the automatic tool setup system that changes and adjusts the length of upper and lower bending tools automatically, saving time and increasing production efficiency. AU-TO and ATA are patented and exclusive devices. As for tooling, flexibility is complete, since the press brake allows mixed setups: after the automatic tool change and setup, standard WILA or special tools such as flattening tools can be manually added to the bending line.

## An intelligent system that enhances press brake performance

Improving the tool change and setup phases doesn't mean sacrificing precision. All B3 press brakes are equipped with MAC3.0, a set of integrated adaptive technologies that make the system intelligent, eliminating scrap and corrections. S-Crowning is the adaptive mechanical crowning system that ensures constant angle bends across the entire bending length as parameters such as material, thickness, length and required bending force change, the actual deflection of the lower beam is detected and compensated

in real time, without operator intervention. TFC2, or Total Frame Control, prevents deviations in the bending angle using an algorithm derived from FEM analysis of each model. It compensates any deformation of the press brake frame in-cycle as part features change. AMS is the laser angle measurement system, which detects and corrects bending angle variations due to sheet metal springback. Regardless of the length of the press brake or part, the angle is always measured at a single point. This approach reduces cycle time without compromising precision.

Finally, the proprietary software ecosystem, STREAM, OPS and LINKS, maximises the press brake's performance by connecting it with other systems and departments involved in the production flow.

STREAMFORMER automatically creates the bending sequences, setup configurations and bending stations, integrating perfectly with the AU-TO and ATA devices and enhancing their performance. OPS, the modular production management software, includes a function that automatically optimises the production sequence to minimise overall setup times. LINKS is Salvagnini's IoT solution for monitoring system performance. It enables access to production data and parameter monitoring, increasing overall plant efficiency.

All these features make the B3.AU-TO the ideal press brake for companies with a high daily item turnover. The AU-TO and ATA devices reduce cycle time, making it predictable, controllable and schedulable. Integrating B3.AU-TO into your production cycle directly results in higher process efficiency and reactivity, leading to greater daily productivity and profitability.


*The home of the press brake: Salvagnini Robotica is the Salvagnini Group division dedicated to the development and production of B3 press brakes and P-Robot robotic applications. This modern facility, covering over 4,000 m² and inaugurated in 2017, is located just 8 km from Salvagnini Italia's headquarters and employs 40 people.*

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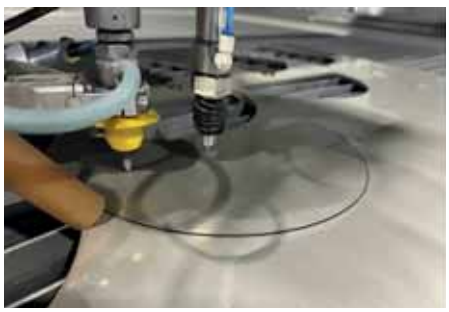
# How Flow Waterjet technology transformed Instinct Hardware's business

For over three decades, Instinct Hardware has been a cornerstone of British architectural ironmongery, renowned for its bespoke B2B designs and commitment to quality. With craftsmanship and bespoke styles at the heart of its business, Instinct place importance on innovation and blending modern technology with traditional working methods. Instinct took delivery of a Flow Waterjet Mach200 in 2023, a move which has allowed it to cut lead times and further enhance its product offering.

## State-of-the-art

The Flow waterjet offers state-of-the-art technology, making use of high-pressure water and abrasive to cut and shape a wide range of materials, including the T316 stainless steel upon which Instinct made its name. Nil Chohan, technical and production director for Instinct, expands on this further:

"Adding a waterjet to our arsenal of machinery has meant we are able to offer ever more intricate designs. We chose a waterjet with a dynamic, pivoting head, allowing us to not only add the kind of finite detail that would only be possible with a waterjet, but to also bevel edges and get square edges, even on thick material. This reduces the need for multiple machining set ups and means we have less processes needed later.



"One of the other main advantages for us is that the waterjet maintains the integrity of the material, thanks to the lack of heat. As we're offering a premium quality product, it's hugely important that the material is not deformed as this can cause problems further down the line."

## Using technology to craft

A huge percentage of Instinct's business is linked to bespoke manufacturing and the ability to turn customer ideas into reality. Its in-house design team use the latest CAD and

rendering software to provide iterative design services, ensuring each product meets exacting requirements. Integrating the Flow waterjet with their design systems has allowed the creative team to push boundaries further, by allowing rapid prototyping and production of custom components with minimal lead times.

One such design that was undertaken by the business was a fully bespoke pad handle for Red Bull's London HQ featuring the famous bull and golden ring. This distinctive handle was designed and crafted fully in-house. Using CAD technology, the designs were then programmed remotely onto the Flow machine using FlowXpert, leaving no room for error.

The machine effortlessly cut through the 10 mm thick 316 stainless steel, leaving behind a smoothly cut, intricate design. Using the waterjet meant minimal polishing work was needed before the handle was finished in Instinct's on-site powder coating plant.

## A wider range

The Flow waterjet has also allowed Instinct to work with a wider range of materials. Alongside its traditional stainless steel, brass and timber, it has undertaken projects with new materials such as marble and cork.

Nil Chohan continues: "We've relished the challenge of working with new materials. Recently we worked with a creative design agency to produce some sustainable wine awards made entirely from cork. Obviously, this not only fits in perfectly with the subject, but cork is also a hugely sustainable material. This would never have been possible for us without the waterjet."

## Into the future

Thanks to its enhanced offer and ability to offer end-to-end fabrication, Instinct have launched a separate subcon division under its Creative Manufacturing brand. Thanks to investments made over the last few years, this area of the business can offer waterjet cutting, CNC machining, metal finishing and powder coating as well as assembly and dispatch of parts. As this business continues to innovate and collaborate, Instinct's Flow waterjet helps to create truly bespoke, spectacular items.
***www.instincthardware.co.uk***

Flow Waterjet is very proud to be associated with Instinct Hardware and its utilisation of the Mach200 System for specialised and bespoke projects is inspirational. During the selection and procurement process, it was clear that Nil Chohan and his team required a high level of capability. Following this joint project work, it was decided that the Mach200-4020 System , 5 Axis Pivot+™ wrist with automatic taper and jetlag compensation and Energy efficient HyPlex® Pump was the ideal solution for Instinct Hardware.

Flow International Corporation is a leading developer and manufacturer of ultra high-pressure waterjet cutting systems with Flow UK providing locally based technical and customer service to a wide range of industries.

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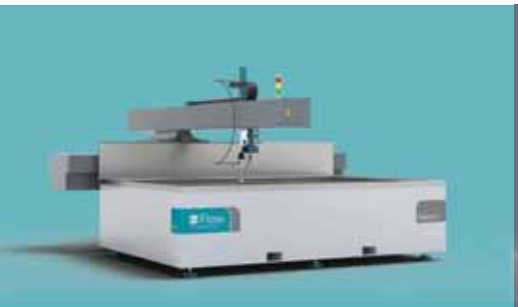

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# Powering the future of defence manufacturing with OMAX waterjet cutting

Engineered to meet the demands of defence manufacturing, OMAX waterjets go beyond expectations. Its waterjets cut stainless steel, ballistic glass and much more with the flexibility and precision required for the defence industry. Designed to meet and exceed industry demands, OMAX provides a cutting-edge solution for defence manufacturing.

## Booming defence market

Global defence spending is surging, with an estimated $2.4 trillion allocated worldwide. In the UK alone, the 2025 defence budget is projected at £59.8 billion, up from £53.9 billion in 2024. As AI, autonomous systems and next-generation technologies advance, manufacturers have more opportunities than ever to enter the defence sector. OMAX waterjet technology plays a key role in this growth, particularly in the production of mission-critical components.

## Unmatched flexibility and precision

OMAX waterjets process a wide range of materials without creating Heat-Affected Zones (HAZ), preserving the integrity of the material. Unlike other cutting methods, OMAX waterjets also eliminate thermal distortion, making them ideal for high-precision defence applications. Their capabilities include:

- Cutting external geometries for Near Net Shape (NNS) production
- Processing round parts like a lathe and square parts like a milling machine
- Cutting intricate designs like an EDM and precise slots like a broach
- With five advanced product lines, OMAX offers a solution for any defence manufacturing requirement.

## Driving profitability & efficiency

Unlike traditional machining methods, OMAX waterjet cutting tools do not wear out. This eliminates tool replacement costs and downtime, allowing manufacturers to maximise production and reduce expenses. Defence manufacturers often work with challenging-to-machine materials that are costly and wear down conventional tools.

OMAX waterjets provide an efficient, cost-effective solution, especially for NNS processing, producing component blanks ready for further machining with minimal material waste.

## Innovating for the future of defence

The defence industry is constantly evolving and OMAX waterjet technology is at the forefront of innovation. With advanced control software, OMAX supports Industry 4.0 integration, cybersecurity, robotics and data analytics delivering cutting-edge solutions to meet tomorrow's challenges.

## What waterjet software should I use?

Unlike other cutting technologies that rely on solid tools with fixed shapes, abrasive waterjets cut through materials using a high-pressure stream. Think of it as liquid sandpaper that constantly adapts to changes in geometry, thickness and material density. To get the best possible cut, the right software is absolutely essential.

That's where OMAX's IntelliMAX software suite comes in. It was designed to mirror the performance of the hardware and give full control over every aspect of the cut. Instead of simply pushing for maximum speed, like most other waterjet systems, OMAX's approach centres on cut quality. The software selects the ideal feed rates and speeds to match the desired outcome, using a patented method that generates thousands of instructions per inch along the cutting path. Even now, this level of control is unmatched in the abrasive waterjet industry.

In the early versions, OMAX's cutting algorithms were great for straight-line cuts but took a cautious approach with corners. Since the jet stream tends to lag, meaning the top part of the stream reaches a corner before the bottom, keeping the same speed can lead to inaccuracies. To solve this, the software would slow the cutting speed at corners, ensuring the stream stayed perpendicular. At the time, this was a sensible and safe way to maintain cut quality.

As the software matured, we found smarter ways to manage cutting speed and geometry. Rather than taking a sharp right-angle turn at a corner, the updated software passes slightly beyond it, then doubles back to change direction. This is what we now call the "corner passing" technique. Today, this is an automatic feature in OMAX's waterjet systems.

Ongoing investment in software has transformed productivity. For example, the very first generation of OMAX software could cut 26 inches of a gear-shaped path with eight teeth out of 1" stainless steel in 30 minutes. By the third generation, that same time allowed for 29 inches on a 9-toothed gear. Now, with the fourth generation, the system can manage 64 inches of a 20-toothed gear in just half an hour using the same pump and garnet rate as before.

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# Ushering in a new era in waterjet and ultrahigh-pressure innovation

Shape Technologies Group, a leader in waterjet technology, robotic automation and Ultra High-Pressure (UHP) manufacturing process solutions, has announced that KMT Waterjet, H20 Jet and McCartney Engineering will extend its global collaboration as part of the newly formed KMT Group. The KMT Group will leverage the unique strengths of these historic brands.

KMT Waterjet offers a wide range of pump models, including 55,000 PSI/3.800 bar direct-drive pumps, 60,000 PSI/4.100 bar intensifier pumps and the PRO 90,000 PSI/6.200 bar ultrahigh-pressure pumps. With this extensive lineup and partnership with 180+ global OEM's, KMT offers the broadest range of waterjet systems for all industries around the world.

The H2O Jet brand is globally known for designing precision high-pressure parts and components. Its team of engineers have extensive high-pressure experience and through customer collaboration, are taking the technology to a new level of innovative products.

Since its founding in 1946, McCartney Engineering has been a leader in high-pressure systems for the LDPE industry, pioneering the invention of waterjet cutting technology in 1971, sold under KMT Waterjet brand. McCartney engineers' ability to do precision machining was a perfect match for high pressure production equipment used in low density polyurethane production.

"We are excited to better serve our customers by combining resources to better drive innovation and deliver the best tailored solutions, whether through industry-standard waterjet and LDPE systems or innovative, custom-designed high-pressure systems that have yet to be introduced to the market," says Brendan Shackelford, global president of KMT Group. "This move represents an exciting development for our team and our customers."

"Aligning our KMT, H2O and McCartney brands under the KMT Group opens up a global opportunity to enhance innovation and efficiency in the UHP pump and component market," says Nino LaDuca, CEO of Shape Technologies Group. "This global collaboration will drive synergies that significantly increase customer value and strengthen our position in the industry."

With today's launch of the global brand, KMT Group also unveils its new logo and looks forward to sharing updated brand materials, including a new unified website for its product brands, later this year.

KMT Group would like to extend its gratitude to customers, partners and employees for their support and contributions to the company's success. This is a significant step forward in the company's mission to enable customers, suppliers and employees to succeed and grow by offering innovative and reliable manufacturing solutions.

Shape Technologies Group, Inc. ("SHAPE") is a leading developer and provider of ultrahigh-pressure process solutions for advanced manufacturing and materials processing applications.

KMT Group, Inc. is a leading provider of ultrahigh-pressure process solutions for advanced manufacturing. KMT Group companies deliver innovative product solutions to customers spanning 100 countries and a broad array of industries.

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# Coming soon to the UK market

## Starrett's new S1106NG-F1 Portable Bandsaw

Starrett is set to introduce the new S1106NG-F1 Portable Bandsaw Machine to the UK market. This compact, lightweight machine is designed for professional users, hobbyists, and small workshops looking for reliable performance in a portable format.

Starrett's name has stood for specialists in cutting and measuring since 1880. With over 140 years of manufacturing expertise, the company continues to provide tools that meet the demands of today's fabricators, engineers, and builders.

The S1106NG-F1 will soon be available through Starrett UK, with full support and demonstrations from its UK technical team.

### What sets the S1106NG-F1 apart?

This is not just another portable saw. It's built for practical, everyday use on the shop floor or out on site.

Let's break down the key features:

• **Variable speed control**
You can fine-tune the cutting speed between 30 to 80 metres per minute. Just turn the dial. This flexibility helps tackle a range of material types while extending blade life.

• **Precision cutting with guided support**
The machine includes fixed and movable blade guides fitted with bearings. This keeps your cuts straight, clean and repeatable whether you're cutting solid bar, tube, or profile.

• **Easy mitre cuts up to 60°**
The bow adjusts to make angled cuts to the right, ideal for frames, brackets and custom-fabricated parts.

• **Secure clamping system**
The built-in vice keeps your workpiece stable. You don't have to fight the machine to get the cut right.

• **Two operating modes**
Choose between manual or automatic operation depending on your workload and material type.

• **Safety-first design**
The limit switch automatically stops the machine at the end of a cut. Combined with electrical compliance to EN 60745-1 standards, you can work with confidence.

Technical highlights
• Motor Power: 850W
• Weight: 23.3kg
• Blade Size: 1, 440 mm x 13 mm
• Cutting Capacity:
  o 0°: 125 mm
  o 45°: 85 mm
  o 60°: 50 mm

Whether you're cutting square tube, angle iron, or solid bar, the S1106NG-F1 handles it without fuss.

### Built with purpose

Starrett understands the demands of metalworking environments. That's why this machine was designed to reduce downtime, speed up cutting and deliver repeatable results.

You don't need a large workshop or heavy fixed machinery to get accurate cuts. This machine brings capability to your bench or van.

### See it for yourself

Starrett's Nottingham Weld Centre is home to its UK & IRE based bandsaw sales and technical support team. In the near future, professionals will be able to come for live product demonstrations, technical training, and application advice.

If you're thinking about upgrading your metal cutting capability, schedule a visit from Starrett's technical team. You'll get hands-on time with the S1106NG-F1 and see what it can do in real working conditions.

### Who should take a look?

• Fabricators handling short production runs

• Maintenance engineers and on-site installers

• Trade professionals looking for portable cutting options

• Schools, colleges, and training centres building technical skills

Are you still relying on hacksaws, grinders, or static saws that limit your workflow?

The S1106NG-F1 offers a more consistent, cleaner and safer way to cut and it's coming to the UK market real soon.

Make sure you're ready when it lands.

Visit ***www.starrett.co.uk*** or contact your local distributor for updates.

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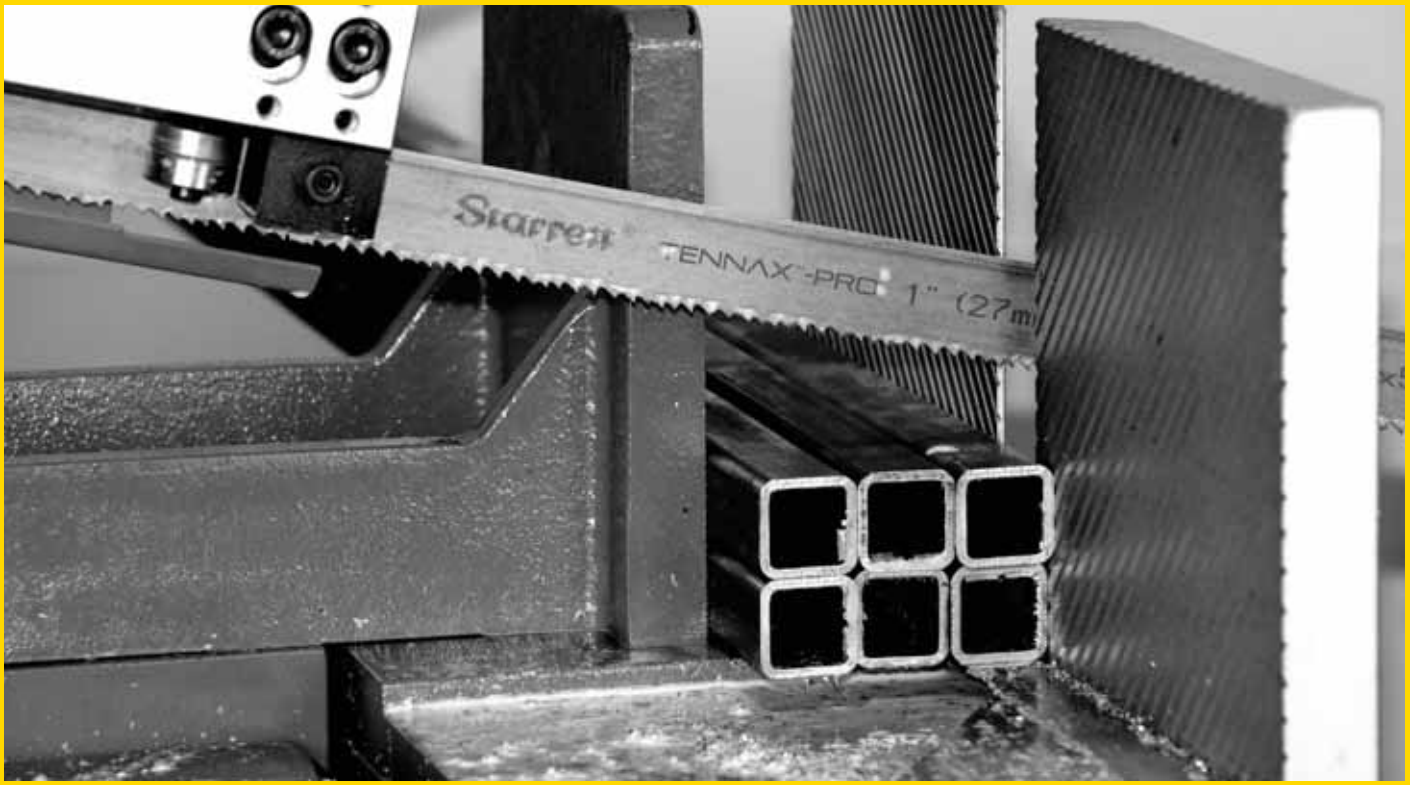


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# Fully automatic sawing centre in the steel trade

## Effectiveness and throughput increased by investing in a fully automatic sawing line

For more than 100 years, CARL SPAETER Hamburg has been one of the leading steel traders for trade, commerce and industry in the north of Germany. With around 140 employees in Hamburg, the company offers a full range of sectional steel, bright steel, stainless steel, quality steel and non-ferrous metals in a warehouse area of over 42,000 m². From Scandinavia to the Baltic States, CARL SPAETER Hamburg is a reliable partner for steel in the north and recently invested in a modern, high-performance sawing centre.

### Initial situation and challenge

CARL SPAETER was looking for a solution for the reliable automation of its sawing production processes. The main objective was to minimise employee involvement in the machines and to enable unmanned shifts. The system needed to have a high degree of automation and be able to perform straight and mitre cuts.

The company is a full-range supplier with an extremely extensive range of materials. It includes wide flange beams, shaped steels, bar steels, angles, flat materials and tubes made of structural steels, some of which are also galvanised. Processing is carried out in both single bar and bundle operation.

### Solution and arrangement of the system

To solve this complex task, CARL SPAETER Hamburg opted for two HBP410-723GA-E automatic mitre bandsaws with double grippers from Behringer. The two sawing lines are arranged parallel to each other and can be controlled centrally by one operator. The special feature of the sawing system is its two portal grippers, which are arranged on the infeed and outfeed sides. They transport offcuts, remnants and short offcuts away reliably.

The two grippers also make it possible to mitre cut round tubes on both sides, plane-parallel or double mitre, with maximum precision.

### Infeed side

The infeed side has been divided into several areas, both logically and in terms of safety. This offers CARL SPEATER maximum flexibility and a good combination of manual and automatically controlled zones.

The overhead crane is used to remove bundles or several individual bars from the store at the same time and place them on the pre-storage area. Here, the operator has the option of removing strapping and separating bundles without interrupting the automatic sawing line. The individual bars are then fed onto the automatic cross conveyors. The option of separating the raw materials on the infeed side effectively reduces crane travel distances and crane utilisation time.

Even short offcuts from 2,200 mms in length are automatically returned by the sawing system to a buffer zone on the infeed side, as the material store is located in this bay. A connecting roller conveyor to bridge the aisles was therefore not necessary.

### Outfeed side

The Behringer sawing system has eight deposit positions on the discharge side, two of which are for short sections, two for scrap and bulk material and four deposit positions for long parts.

Your cut-off gripper clamps the parts during the sawing process and then transports them out of the saw to the desired storage position. Even the shortest cuts, gussets or short parts are transported fully automatically.

A closed material table is located next to the roller conveyor, onto which good parts up to 1,500 mm in length are pushed. Thanks to its ergonomic working height, parts can be

effortlessly unloaded or further processed by the worker. Two boxes are arranged on the opposite side of the roller conveyor. One of the boxes is used for bulk material orders. The other box is used for trimmings, offcuts and scrap.

Good parts up to 12,200 mm cut-off length are conveyed to the four storage positions for long products at the end of the system. Each stacker consists of driven chain strands, which enable particularly space-saving storage. Order-related picking takes place automatically at the storage positions. Several

customer orders can also be efficiently nested on one bar.

The packages for transport are formed outside the security area directly next to the storage area. This prevents interruptions to automatic operation.

## Result

CARL SPAETER Hamburg was able to fully automate its sawing centre with the two mitre saw lines with double grippers from Behringer. Despite the complexity of the task, the company has managed to establish a sawing process that requires very little manual intervention by the operator.

Internal transport routes have also been reduced thanks to the excellent accessibility of the lines. The entire stock remains in a bay and is moved to the sawing system using an overhead crane. Good parts are removed directly from the unloading stations according to order and packages are produced for transport to the end customer.

The company has received an effective response to the demographic change thanks to the great flexibility of the system, its high degree of automation and low labour input, coupled with the high system throughput.

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# Bandsaw and circular saw technology from Selmach Machinery


Selmach supplies an extensive portfolio of industrial sawing machinery engineered to meet the demands of modern fabrication, engineering and production environments. Whether you're cutting mild steel, stainless, aluminium or non-ferrous materials, it offers machines suited to your application, material dimensions and production volumes backed by expert advice and nationwide support.

## Horizontal bandsaws

Horizontal bandsaws remain the preferred solution for straight-cutting operations across most fabrication settings. Stelmach's range spans from compact entry-level units to heavy-duty CNC systems for high-volume, automated production. Machines are classified by automation level.

## Manual horizontal bandsaws

Designed for low-volume and general-purpose use, manual models like the Sterling Swift series offer dependable performance for workshops handling occasional cutting. Gravity or pull-down feed provides a simple but effective operation, suitable for single cuts or small batch work.

## Semi-automatic horizontal bandsaws

Ideal for medium-volume environments, semi-automatic saws include hydraulic vice clamping and automatic bow return. These features improve cycle times and reduce operator fatigue, allowing efficient multitasking during each cut cycle.

## Fully automatic horizontal bandsaws

Automatic saws from Selmach provide complete cycle control. Operators can program material length and quantity, allowing unattended operation ideal for batch cutting and repetitive workflows. Available in pivot action or twin-column configurations, these saws offer enhanced rigidity and accuracy, particularly for larger profiles and tougher materials.

## CNC horizontal bandsaws

For precision-driven, high-throughput cutting, CNC bandsaws are the optimal choice. Capable of storing multiple cutting programs with variable lengths and angles, these machines significantly reduce manual input. When paired with optional bundle loaders and powered roller conveyors, they form a comprehensive automated cutting cell suitable for 24/7 operation.

## Specialist bandsaws

As well as its range of bandsaws of varying levels of automation, Selmach is also able to offer specialist solutions for unique use-cases. One such option is the BTM TT 350 Semi-Automatic Rebar Bandsaw, a semi-automatic bandsaw for cutting rebar. BTM is a sister brand to Bianco, typically for its larger capacity machines featuring all of the heavy-duty ruggedness you would expect.

Another specialist solution is the Sterling GTC 2200 Gantry type Horizontal Bandsaw for cutting extremely large capacities of up to 2,200 mm wide.

## Vertical bandsaws

Often associated with woodworking, vertical bandsaws also have vital applications in metal fabrication. They enable intricate profile cuts, radii, and curves that are not possible with horizontal saws. Commonly used in toolrooms and by prototype fabricators, these machines are invaluable when material geometry cannot be achieved through conventional straight cutting.

## Circular saws

Circular saws are the industry standard for fast, clean cutting of small-diameter tube, bar, and box section. With a rigid cutting head and high-speed operation, they produce minimal burr and thermal distortion. The Selmach range includes manual pull-down and semi-automatic models, ideal for repetitive short-cut applications where speed and surface finish are key factors.

## Selecting the right sawing solution

Choosing the appropriate machine depends on several key factors:

- Material type and size
- Cutting volume and cycle time expectations
- Required level of automation
- Space and operator availability
- Integration with existing workflow, e.g. conveyors, loaders

Selmach assists engineers, production managers and procurement professionals in matching the right machine to their operational needs. This ensures performance, longevity and cost-efficiency.

Contact the technical sales team for tailored advice or to arrange a demonstration. The company also provides nationwide servicing, training and installation.

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# Efficient solutions for steel processing

The steel supplier Schwarzwald Eisenhandel GmbH & Co. KG has once again relied on the expertise of Kaltenbach, a technology leader in the field of steel processing equipment, to install a saw drill combination, a shot blasting system and an automated transport system at its Karlsruhe, Germany location. Thanks to the close and cooperative partnership between the two companies, the project was successfully implemented in a very short time despite the limited space available in the production hall.

## Increased customer demands

The steel market is undergoing change and customers' demands for fast delivery times and high-quality products are constantly increasing. In response to these requirements, Schwarzwald Eisen decided to install a further system in Karlsruhe with a saw drill combination, shot blasting system and automated transport system. Kaltenbach quickly disassembled the old system, which could only saw and drill at a limited speed and installed the new one. The limited hall space meant that the Kaltenbach team focused particularly on a space-saving and effective arrangement of the drilling, sawing, blasting and transport systems.

Schwarzwald-Eisen CEO Alexander Hatt expressed his satisfaction with the cooperation with Kaltenbach and the quality delivered: "Since the commissioning of our first Kaltenbach sawing system over 20 years ago in Lahr, we have always trusted in the quality and reliability of the machines. Installing further systems in Freiburg and the consistently positive experience with the service and help desk have confirmed our decision to rely on Kaltenbach."

## Quality from a single source

Kaltenbach supplied the required systems as a one-stop shop, ensuring rapid installation and coordinated processes. Andreas Pregger, sales engineer for Kaltenbach GmbH + CO. KG, highlights the flexibility of the new system: "The overall system is capable of processing a wide range of different profiles that are required in steel processing. A high level of processing quality is guaranteed for both small and large dimensions." The new roller

conveyors also connect the individual work steps with each other and ensure a continuous and efficient material flow and optimised processes.

The Kaltenbach equipment is also characterised by its sturdiness, durability, simple implementation and integration as well as cost-effective maintenance. Schwarzwald Eisen has permanent access to Kaltenbach's highly qualified technical help desk and receives the best possible support even after commissioning. The installation of the Kaltenbach systems in Karlsruhe means that Schwarzwald Eisen is ideally equipped to meet the increasing demands of the steel market.

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# Bandsaw basics - vertical vs. horizontal bandsaws

When it comes to metal cutting, choosing the right bandsaw can significantly impact efficiency and precision in your operations. The two primary types of bandsaws, vertical and horizontal, each have their distinct advantages and applications. In this article, Addison Saws explore the basic differences between vertical and horizontal bandsaws, helping you make an informed decision for your manufacturing needs.

## Understanding bandsaws

Bandsaws are versatile cutting tools used in various industries, from woodworking to metalworking. They consist of a continuous band of toothed metal stretched between two wheels, which allows them to make precise cuts. The choice between a vertical and horizontal bandsaw depends largely on the specific requirements of your business.

## Vertical bandsaws

**Features and benefits**

Vertical bandsaws are generally known for their adaptability, except for the heavy industrial block and plate type which we will not be covered in this article. These machines have a blade that is positioned vertically, offering excellent control for intricate cuts including creating curves. They're ideal for tasks that require detailed contouring and complex shapes.

- **Precision cutting:** Vertical bandsaws ideal for sheet and plate, tube, solids and castings.
- **Versatile applications:** Suitable for cutting various materials, including metal, wood and plastic.
- **Flexibility:** The ability to tilt the table offers greater manoeuvrability for bevel cuts.

## Ideal use cases

Vertical bandsaws excel in applications that demand finesse and accuracy. They are commonly used in workshops where customised and detailed work is a priority, such as in crafting prototypes or intricate components.

## Horizontal bandsaws

**Features and benefits**

Horizontal bandsaws are designed for more robust cutting to length tasks. With a blade that cuts horizontally, these saws are perfect for cutting through large metal pieces efficiently.

**High efficiency:** Horizontal bandsaws cut through thicker materials quickly and with less manual effort, especially if you're looking at automatic or CNC saw models.

**Consistency:** Ideal for producing straight and mitre angle cuts on large quantities of material.

**Durability:** Built to handle heavy-duty cutting tasks with ease.

## Ideal use cases

These saws are best suited for operations requiring straight or mitred cuts on large pieces of metal. They are a staple in industrial settings where speed and volume are critical, such as in metal fabrication shops and steel stockholders.

**Vertical vs. horizontal:**
**Making the right choice**

When deciding between a vertical and horizontal bandsaw, consider the nature of your active and any potential future workload:

**For detailed, intricate cuts:** A vertical bandsaw is your best choice. Its versatility make it ideal for complex tasks. Generally, the operator is in control of the movement of the material through the blade, either freehand or with an adjustable guide.

**For straight, set mitred, or high-volume cuts:** Opt for a horizontal bandsaw. Its efficiency and consistency are unmatched for repetitive tasks involving large materials.

## Conclusion

Selecting the right bandsaw is crucial for optimising your manufacturing processes. Whether you need the wide-ranging flexibility of a vertical bandsaw or the power of a horizontal production machine, understanding ts unique features will guide you to the right investment. By aligning the saw's capabilities with your specific needs, you can enhance productivity and ensure the quality of your work.

If you have any further questions or need assistance in choosing the right bandsaw for your operations, contact Addison Saws. Its team is committed to helping you achieve the best results for your business.

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