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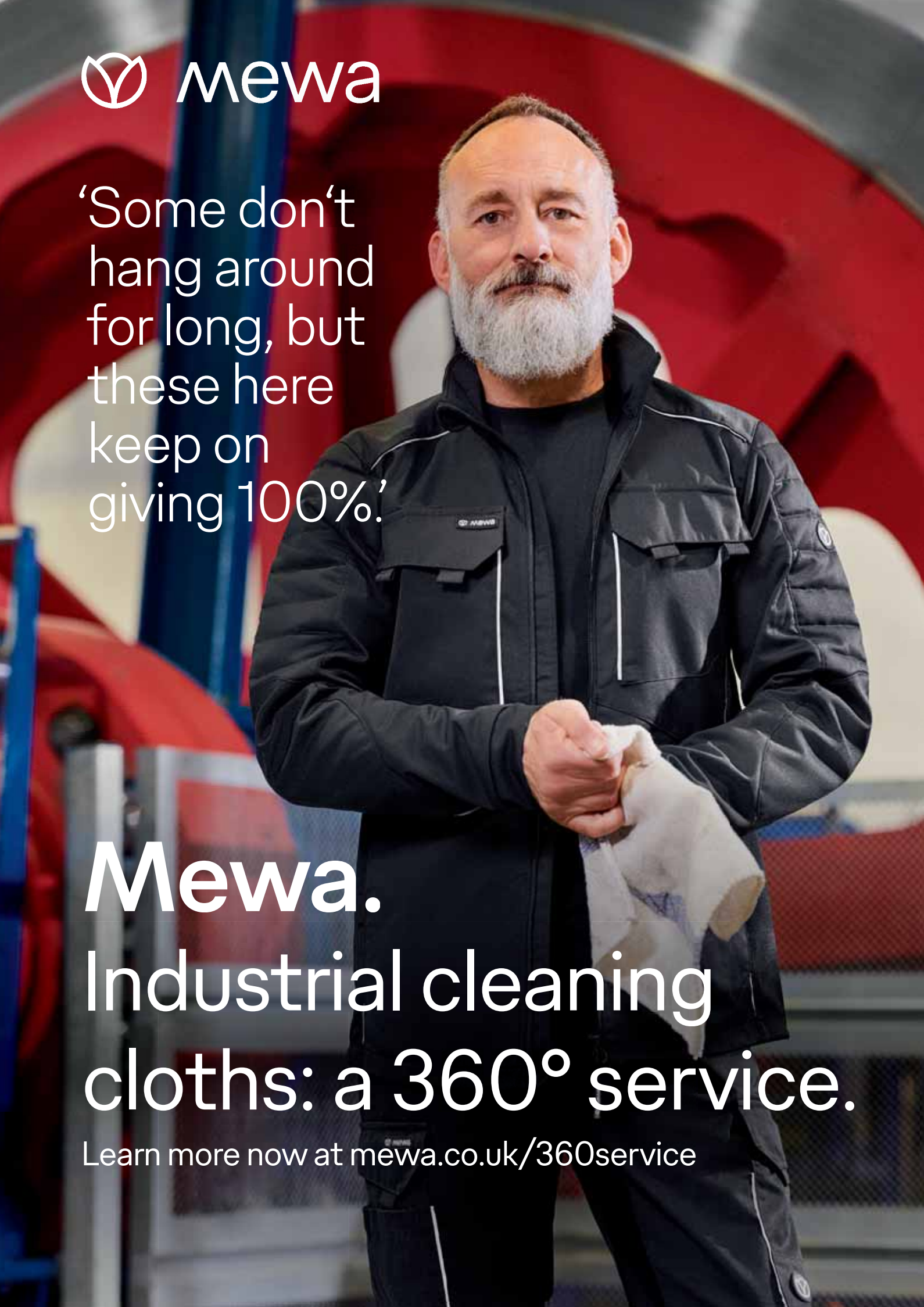
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FC Laser celebrates 14 years of growth and investment

This year marks a significant milestone for FC Laser as the Derbyshire-based manufacturing specialist celebrates its 14th birthday. What started as a small operation in 2012 has grown into one of the UK's leading precision sheet metal, laser cutting and fabrication businesses, thanks to a commitment to continuous investment, innovation and customer service.

Founded by CEO Danny Fantom, FC Laser was built on a clear vision: to create a manufacturing business capable of delivering industry-leading solutions while continually reinvesting in its people, technology and facilities. Fourteen years later, that philosophy remains at the heart of the company's success.

CEO Danny Fantom, FC Laser

From its beginnings with a single laser cutting machine and press brake, FC Laser has evolved into a state-of-the-art manufacturing operation occupying almost 60,000 square feet and serving more than 400 customers each year across a diverse range of sectors. Through sustained investment and a focus on quality, the company has established a reputation as one of the UK's foremost laser cutting and fabrication specialists.

Danny Fantom's commitment to reinvesting back into the business has been instrumental in driving FC Laser's growth. Rather than standing still, the company has consistently strengthened its manufacturing capabilities, expanded its facilities and invested in its workforce, ensuring it remains at the forefront of modern manufacturing.

Today, FC Laser employs more than 70 people across manufacturing, engineering, sales, logistics and support functions. However, the company is already preparing for its next phase of growth following a major £2 million investment programme.

The investment includes the introduction of advanced machinery from Salvagnini and TRUMPF, including a Salvagnini P2 panel bender, TRUMPF TruPunch 3000, TRUMPF TruBend 8400 press brake and a fully automated powder coating line. These additions will significantly enhance production capacity, automation and efficiency, enabling FC Laser to meet growing customer demand while maintaining the highest quality standards.

As a result of this investment, the company is planning to recruit a further 20 team members across a variety of roles, creating new opportunities within the local manufacturing sector and reinforcing its commitment to growth.

As FC Laser celebrates its 14th birthday, the business looks ahead with the same ambition and determination that has defined its journey from day one. With continued investment in technology, facilities and people, FC Laser is well positioned for an exciting future and continued success in UK manufacturing.

See full story on pages 34-35

(Images sourced: Salvagnini, Trumpf and Gema)

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Email: enquiries@fclaser.co.uk www.fclaser.co.uk

Heller to focus on integrated machining, automation and digitalisation

Heller will demonstrate its expertise in high-precision component machining for the aerospace sector at the Farnborough International Airshow 2026, 20th-24th July, where the company will exhibit as part of the Midlands Aerospace Alliance in Hall 1. The event will provide an opportunity for the horizontal machining centre specialist to engage with manufacturers in the industry and highlight technologies and engineering capabilities that support the production of complex aerospace components.

As global aircraft demand continues to drive growth across the sector, manufacturers are increasingly seeking solutions that deliver greater productivity, process reliability and cost efficiency. Heller has established a strong position in this market by combining advanced machine tool technology with extensive application knowledge and digital engineering expertise.

A key area of focus is the machining of challenging aerospace materials, including titanium, Inconel and other heat-resistant superalloys commonly used in structural and engine components. They present significant machining challenges, requiring a high degree of process stability and precision to achieve consistent results, while minimising production costs.

At Farnborough, visitors will learn how Heller's machining platforms are designed to meet these requirements through elevated levels of rigidity, accuracy and dynamic performance. The company's production systems help manufacturers maintain reliable production while meeting the stringent quality standards demanded throughout the aerospace supply chain.

Alongside its machine tool technology, the supplier will explain its capabilities in digital engineering and process simulation. By creating digital representations of complete machining environments, the company enables customers to validate production strategies, optimise fixtures and toolpaths, identify potential process issues and confidently quote for contracts. The approach helps to reduce development time and improve production planning.

Process optimisation is also part of Heller's aerospace offering and the company supports manufacturers with integrated automation solutions that enable higher levels of productivity and increased machine utilisation. Combined with advanced tool management and process monitoring, these capabilities support efficient and reliable production environments, including unmanned and lights-out manufacturing.

Heller's horizontal-spindle, 5-axis machining centres are the production platform of choice for many aerospace manufacturers globally.

The company continues to collaborate with industry partners, tooling specialists and research organisations to develop innovative manufacturing technologies and machining strategies. These partnerships help ensure that the latest advances in production engineering can be applied to real-world aerospace manufacturing challenges.

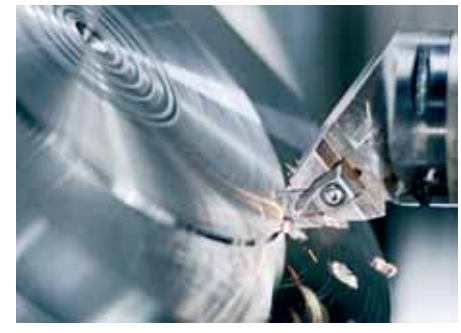
Heller's opinion is that the Farnborough International Airshow is one of the industry's most important events and provides an ideal platform to engage directly with aerospace manufacturers and suppliers from around the world. Its engineers and managers look forward to discussing the challenges facing the sector and demonstrating how the supplier's combination of machine technology, digital engineering and application expertise can help customers improve performance and competitiveness.

About Heller

Heller was founded in 1894 as a small craftsman's workshop. Today, the global Group develops and produces state-of-the-art CNC machine tools and manufacturing systems for machining operations. The company combines the tradition and experience of a medium-sized company with the integrated solution-based approach of a global player.

As one of the leading machine tool manufacturers in the machining sector, it employs 2,000 staff worldwide. Four production facilities in Europe, Asia and North and South America guarantee reliable deliveries to itss customers. Additionally, Heller is represented in all major markets with sales and service bases and qualified service partners.

Efficient digital workflow will be a core message on the Heller stand.



Turning in progress on a Heller mill-turn machining centre.

The Heller product range comprises 4- and 5-axis machining centres, milling-turning machining centres, custom machines and process machines, coating modules, machines for crankshaft and camshaft machining, as well as a comprehensive modular range of services. With HELLER4Industry and HELLER4Use, it offers customers an extended range of solutions to achieve increased productivity and flexibility in production. Heller generates tailor-made complete solutions for a diverse range of manufacturing requirements.

Its customers include companies from the automobile industry and their suppliers, from general mechanical engineering, energy technology, fluid technology, aerospace and many other sectors.

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Precision at altitude

With the bright glint of the sun ricocheting off the wide expanse of an aircraft's wing, it's easy to marvel at modern aerospace engineering. But behind every flawless component that keeps a jet aloft lies a world of dedication, innovation and precision-driven partnerships. Nowhere is this truer than at Omni Aerospace, nestled in the aerospace capital of the United States, in Wichita, Kansas.

Founded over 25 years ago by CEO John J. O'Neill, Omni Aerospace has built its reputation on producing complex structural metal components for some of the world's leading aerospace OEMs, like Boeing, Bombardier, Gulfstream, Lockheed Martin, Textron Aviation, and the Department of Defence, to name a few. But as the demands for tighter tolerances, lighter materials and faster turnaround times grew more intense, Omni faced a critical decision: either evolve or fall behind.

And evolve it did with the help of Starrag's ECOSPEED F 1540 machining technology.

The first Starrag ECOSPEED changes the game

In 2017, Omni Aerospace made a strategic investment in its first Starrag ECOSPEED F 1540, a high-speed, high-precision machining centre explicitly engineered for large aluminium structural aerospace parts. It wasn't just a new machine, it was the beginning of a new chapter.

"We took our company to the next level by investing in technology that can do things other people can't do with their equipment," says CEO John J. O'Neill. "The ECOSPEED was a game changer. It's a unique piece of machinery that is unmatched for speed and accuracy."

That machine didn't just meet expectations, it exceeded them. It enabled Omni to cut more precisely, reduce setup times and eliminate costly match drilling on final assembly components. Most importantly, it unlocked the ability to consistently deliver close-tolerance, true-position fastener holes, a non-negotiable requirement for determinant assembly parts in commercial, business and military aviation.

Omni's first ECOSPEED marked a turning point. Not long after installation, revenue doubled. New customers arrived, production expanded and a new plateau was reached.

Scaling up

Riding the momentum of this success, Omni soon invested in a second ECOSPEED F 1540, integrating both machines into a palletised automated Flexible Manufacturing System (FMS). This innovative system enabled continuous, around-the-clock operation, even with Omni's high-mix, low-volume manufacturing model.

The ECOSPEEDs took on highly demanding parts such as wing ribs, machined from aluminium or aluminium-lithium billets weighing up to 2,700 kg, with dimensions approaching 4 m by 1.5 m by 152 mm. Some components required up to 95 percent material removal, a level of

material transformation that demands not only brute speed but surgical precision.

"While roughing, we can fill a 250-litre drum with chips in less than a minute," one Omni technician noted. "Yet the tolerances remain perfectly tight. That's the ECOSPEED difference."

At the heart of this performance lies Starrag's Sprint Z3 parallel kinematic machining head. Using three radially mounted linear drives, the head enables 5-axis/5-sided machining, ±45° spindle articulation and lightning-fast motion, allowing the spindle to move within a spherical cone at speeds of up to 80 degrees per second. The result? Precision cuts, complex geometries and faster part completion, even with small batch sizes.

Through it all, the ECOSPEEDs never slowed down. In fact, they became more reliable with age.

"I'm almost embarrassed to admit how many spindle hours we have on our first ECOSPEED without a spindle replacement," one engineer states. "We run them at 30,000 rpm every day, over multiple shifts and they just keep humming."

The third ECOSPEED and beyond

In 2025, Omni Aerospace is once again charting a bold new course and rearranging its existing production floor to accommodate its third Starrag ECOSPEED F 1540, a clear signal of continued trust and a growing partnership. This third machine will further boost capacity for aluminium parts while allowing the company to reconfigure its existing layout for more efficient workflows. But Omni's ambitions don't stop with aluminium. The team is also preparing to expand into hard metal machining, a move that will open the door to an even broader range of aerospace components and deeper vertical integration.

John J. O'Neill says: "As a fast-growing company, we're always looking to take the next step. We required a new paradigm for high-speed, medium-to-large, 6-axis machining. Starrag's solution checked every single box."

The guiding philosophy "Engineering precisely what you value" is more than just a motto. It's a reality lived every day at Omni. By offering exactly what the customer needs and nothing superfluous, Starrag has helped Omni unlock new levels of efficiency, growth and competitive advantage.

It is the numbers that tell the story. Omni Aerospace has doubled its revenue since installing its first ECOSPEED and, if not for the pandemic freezing capital investment for a time, the company would be even further ahead today.

John J. O'Neill concludes: "No matter what the challenge, no matter the part and no matter the complexity, Starrag has helped us not just meet expectations, but exceed them for ourselves and for our customers."

A partnership built to soar

The relationship between Omni Aerospace and Starrag is more than transactional, it's transformational. It's a case study in what happens when a manufacturer with a clear vision partner with a machine builder that understands both the technical demands and the strategic ambitions of its customer.

Together, they've not only built aircraft components, but they've also built a path to sustainable growth, unmatched capability and enduring innovation.

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Stoneswood puts *hyper*MILL automation technologies at the heart of its aerospace strategy

Stoneswood Precision Components, part of the Hyde Group and an aerospace specialist, has evolved over fourteen years into a leading UK 5-axis aerospace machining firm. Established in 1999 as a risk-sharing partner, it now has a £7m turnover, nine high-end machining centres and has invested £4.4m in plant and software in the past five years, including *hyper*MILL CADCAM from OPEN MIND Technologies.

That investment programme, led by managing director Charles Day, focused on developing production systems to monitor and optimise machines, making it easy for operators to use machine programmes. The CNC capability relies on DMG MORI and Hermle platforms, but machines are only part of the story.

At Stoneswood, the CAM system is *hyper*MILL. Charles Day's introduction to *hyper*MILL came six years ago. The benchmark was a complex 5-axis aerospace surface where a CAM strategy is crucial for margins. The barrel milling demo succeeded, producing a smoother finish, longer tool life, better accuracy and parts ready for CMM inspection without secondary dressing. Charles Day says: "Dressing a part risks scrapping it," but *hyper*MILL prevented this.

What followed has been a steady build of the licence stack with the addition of 5-axis complex machining modules, *hyper*MILL Probing and most recently *hyper*MILL Automation, the layer now driving Stoneswood's wider Industry 4.0 strategy. Charles Day has since mandated that every component entering New Product Introduction at the company is developed in *hyper*MILL.

The *hyper*MILL adoption is best illustrated by Tom Whitbread, a graduate engineer who joined Stoneswood as a 19-year-old apprentice in 2018 and earned a first-class BEng (Hons) while embedded in the manufacturing side of the business. He has led much of the *hyper*MILL technical exploration since its adoption.

Discussing the *hyper*MILL validation case, Tom Whitbread says: "We have a long-standing aluminium aerospace bracket with a heavily contoured form. The trial pitched a 6 mm ball-nose scanning strategy against a barrel cutter with an effective 1,000 mm radius working the same curved face. It was machined 70 percent faster, it was incredible."

The benefits did not stop at cycle time. Surface finish was substantially better, removing the need for hand-dressing, the very risk Charles Day had wanted designed out of the process. "Because the barrel cutter has a much larger radius, we could optimise the step-over even though it was wider and push it back so the form was much better," Tom Whitbread explains.

Just as significant for a shop running 18 kW spindles on its Hermle C400 was *hyper*MILL's trochoidal roughing strategy. "Instead of applying the force in one direction, as you would do a full-slot roughing in a straight line, by doing small circles, like a swirling vortex tool path, you're distributing that load evenly around the spindle bearings," Tom Whitbread states. "You could see the load on the spindle was much lower, much calmer. We could either ramp up material removal rates at the same spindle load or reduce spindle and bearing stress. *hyper*MILL effectively bought Stoneswood spindle longevity at no productivity cost."

The Stoneswood shopfloor demonstrates the level of investment in high-end machine tools

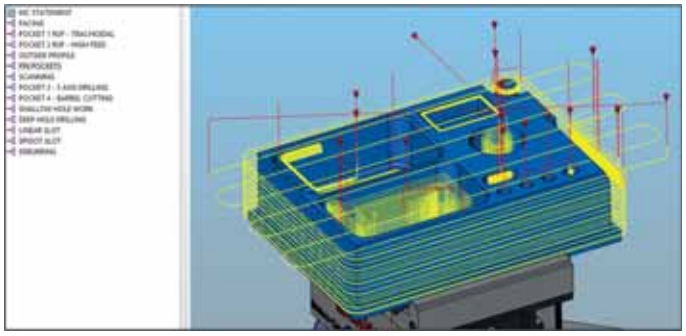
*Tom Whitbread from Stoneswood discussing hyper*MILL *Automation.*

If barrel milling and trochoidal roughing won the original sale, the *hyper*MILL automation technologies are now reshaping how Stoneswood operates day to day. The bridgehead has been a project Tom Whitbread developed for his degree dissertation, the 'HEART' tool, short for Hyde Estimation And Run-time Tool. It targets quoting, the company's most stubborn engineering bottleneck.

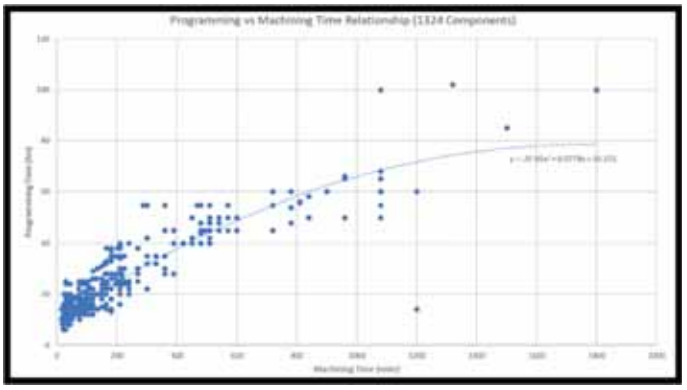
His objective was to cut quoting time by at least 50 percent, deliver cycle-time predictions to within ±10 percent of actual machine performance and make the system usable by a non-technical member of staff. The approach combined an Excel front-end with *hyper*MILL Automation doing the heavy CAD interrogation in the background.

The Hyde Estimation And Run-time Tool (HEART) Test Piece Inspection.

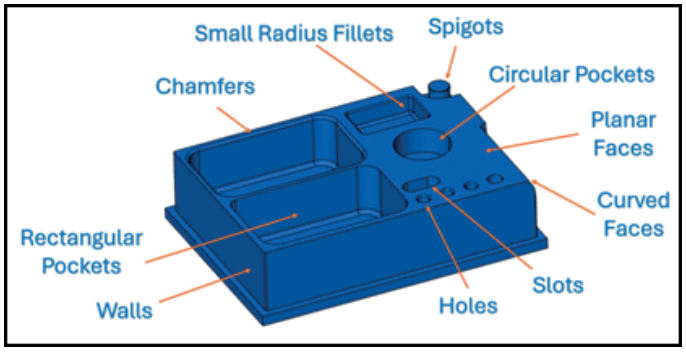
"Automation finds the envelope size of the component and then, using the ceiling functions I built in Excel for our matrix plates, it works out the optimal billet size to minimise wastage," Tom Whitbread adds. "It calculates the number of pockets and features, counts the drilled holes, calculates the material removal rate, looks at the



The Hyde Estimation And Run-time Tool (HEART) test piece in hyperMILL.



The Hyde Estimation And Run-time Tool (HEART) test piece - study-graph.



The Hyde Estimation And Run-time Tool (HEART) test piece in hyperMILL features.

relative size of the component using the data from our time study, then layers in complexity modifiers and material type. It builds the cycle time automatically with one button push."

The methodology was underpinned by serious data work. More than sixty historical components were analysed for cycle-time and MRR behaviour and a separate dataset of over 1,300 programming records was used to build a bespoke polynomial function that predicts CAM programming time from machining time. Validation took place on a Hermle C400 against a purpose-designed aluminium test part incorporating ribs, bosses, pockets, slots, chamfers and small radius fillets, the geometric vocabulary that statistical analysis had identified as the most common across Stoneswood's quote pipeline. Stopwatch timing, CAM comparison and empirical cycle measurement confirmed the model held its ±10 percent accuracy target.

The user-facing layer has been deliberately constrained. All formulae and developer logic sit in hidden sheets; the end-user interface is restricted to colour-coded, locked input and output cells, so it is secure and error-free for non-technical staff.

The tool also auto-selects the most appropriate machine for the job, factoring in work envelope, machine travel and hourly running cost. Measurable return is now flowing through the business and the average quoting time has fallen from around 20 to 3.5 minutes per component, an 82.5 percent time saving.

There is a sales effect too. Some aerospace customers operate on a first-past-the-post basis, awarding work to the first competitive quote returned. With same-day responses now routine, Stoneswood has created a key relationship-building tool and reduced an overhead. The data also feeds the production planning department's capacity graphs.

Wider *hyper*MILL stack is delivering value beyond quoting. It now connects to the company's ERP system and allows Charles Day to pull a component into the system, generate a runtime, generate a billet size and check stock automatically.

For Tom Whitbread, HEART is the start of a wider automation roadmap rather than the destination. Within *hyper*MILL Automation, the next phase is to push automation deeper into the programming workflow, drilling cycles, billet preparation, probing routines and other repetitive front-end tasks, so that engineering attention is reserved for genuinely complex 5-axis challenges.

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DELTA expands travelling column range with high-capacity Mini 20 surface grinding machine

DELTA S.r.l., a specialist in high-tech flat-surface grinding machines, has announced the introduction of the new Mini 20 model, significantly extending the capacity range of its popular Mini travelling-column line. Available through UK agent RK International Machine Tools Ltd, the fully automatic Mini 20 is designed for high-precision applications, offering a maximum grinding length of 2,100 mm and a max grinding width of 600 mm, or 650 mm with the 100 mm wheel option.

A heritage in grinding excellence

DELTA was established in Pavia, Italy, in 1955 by Oreste Marchesi and Pietro Ceri. Initially a precision metalworking shop, the company quickly pivoted to producing surface grinders. A fundamental step in DELTA's development occurred in the late 1960s, with the design and construction of flat-surface grinding machines that incorporated the high-accuracy Mackensen hydrodynamic spindle as a standard feature.

In the early 1980s, DELTA pioneered the use of the travelling column design in large-size surface grinders, the Maxi family, a structure previously seen mainly in milling and boring machines.

The company successfully scaled this technology to the smaller end of the market with the introduction of the Mini family in 2005. Today, DELTA manufactures its machines at its modern headquarters in Cura Carpignano, near Pavia, Italy and is recognised as a leader in the production of travelling column grinding machines.

Mini 20 technical specifications and features

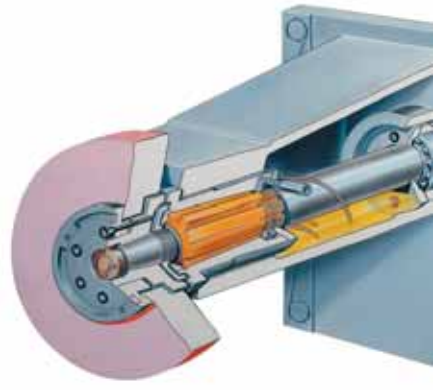
The Mini 20 is a high-precision, fully automatic horizontal-spindle plane-surface grinding machine designed for both mass-production and single-piece precision applications. The core innovation lies in its rigidity and movement systems:

1. Meehanite travelling column structure:
The machine's foundational structures, including the base, table, column and wheel-head, are constructed entirely from high-quality, stress-relieved Meehanite cast iron. This structure, optimally designed using finite element analysis in collaboration with the Mechanical Engineering Department of the Polytechnic of Milan, provides maximum stiffness and high vibration absorption. The travelling column design eliminates the "overhang" error and stability problems typically associated with moving-head grinding machines, ensuring flatness.

2. Hydrostatic axes:
The Mini 20 features hydrostatic ways on all axes, X, Y and Z, utilising a closed-loop pressurised oil delivery system. This provides significant operational advantages, including "zero wear", maintaining the machine's original geometric accuracy throughout its life and zero sliding friction, thereby enabling optimal exploitation of the installed power. The hydrostatic support eliminates "stick-slip," guaranteeing extremely smooth and highly accurate movements with superior repeatability. The large table, measuring 2,000 mm by 500 mm, always rests fully on the basement during longitudinal travel due to this full grip slideway system.

3. Mackensen hydrodynamic spindle:
The spindle is supported on the wheel side by an oversized Mackensen-type hydrodynamic bearing. The hydrodynamic principle ensures no metal-to-metal contact, resulting in extremely long life, quiet operation, zero wear and superior surface finish capability.

4. Control system:
The machine is offered with three levels of automation: Diastep, CN Plus Touch Screen and CNC. The standard Mini 20 Diastep model utilises the proprietary Diastep control unit, which is an intuitive, teachable grinding system developed entirely in-house by DELTA. This user-friendly control allows operators to manage surface, continuous or step-by-step, or plunge grinding cycles, rough and finish passes and automatic wheel dressing with compensation. Full machine operation is guaranteed after only a half-day of training.



The Mini 20 is suitable for handling substantial workpieces, supporting a maximum admissible load of 1,500 kg on the table and the machine has an approximate net weight of 7,000 kg.

UK representation

RK International Machine Tools Ltd, the UK agent for DELTA, has been appointed to handle the introduction of the Delta Mini 20 to the UK and Ireland.

Simon Rood, director at RK International Machine Tools states: "With a 15-year relationship between DELTA and RK International Machine Tools, we are seeing a growing number of customers become aware of the build quality and attention to detail, Where customers are demanding more accuracy from their grinding machine, the DELTA range performs to the highest levels."

Today, DELTA is still under the watch of the Ceri and Marchesi families, with two members from each family running the facility's daily operations in Italy.

RK International Machine Tools Ltd
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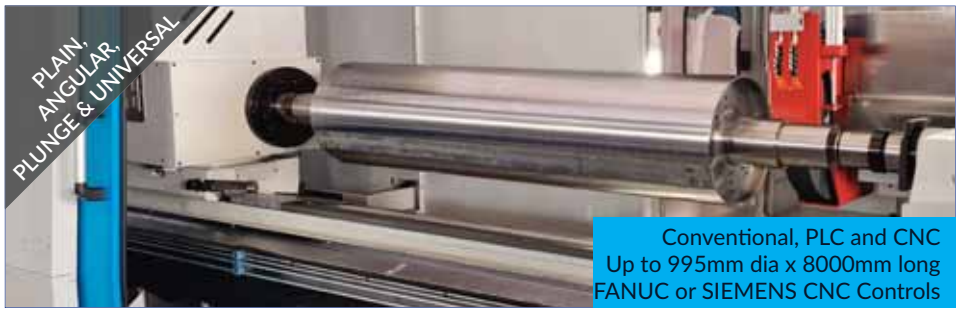

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SCAN FOR MORE INFO:
RK International Machine Tools, a family-run business, has been a pioneer in supplying machine tools since 1951.

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Complete grinding of rolling rings

At Saarstahl's Burbach plant in Germany, precision and process reliability are top priorities. Up to 1.2 million tons of steel can be processed here each year and rolling rings play a key role in the quality of the entire rolling process. With the JUNKER Lean Selection shaft, Saarstahl achieves a new level of efficiency and accuracy: complete grinding of the outer diameter and profile in a single setup, perfect concentricity and dimensional accuracy, extremely short non-productive and setup times and maximum flexibility.

From left to right: Thomas Bender (foreman, production-related workshops at Saarstahl, Burbach) and Waldemar Neumayer (regional sales manager, JUNKER) in front of the Lean Selection Shaft at the Burbach plant, Germany.

This technologically and economically compelling solution is driven by a strong partnership between Saarstahl and JUNKER.

Saarstahl is a leading manufacturer of long steel products and, as a reliable partner, supplies customers from a wide range of industries with tailor-made products that meet the highest quality standards.

The product portfolio of Saarstahl AG comprises a broad spectrum of long products, with wire rod accounting for the largest share, followed by bar steel and rail products. These diverse products are used in key industries such as the automotive industry, mechanical engineering, rail transport, as well as construction and infrastructure. The company's success story is based on a combination of technological expertise, consistent customer focus, and a strong international positioning. A key element of the corporate strategy is the sustainable transformation of steel production: Saarstahl is consistently investing in modern, climate-friendly technologies with the aim of producing steel with reduced CO_2 emissions in the future. From a technological standpoint, Saarstahl sets benchmarks for example with wire rod from the Burbach plant starting at diameters of 4.5 mm, the thinnest of its kind in Europe.

At the Burbach plant, every minute, every component and every process step counts. It is there, at the heart of production, that the rolling rings take centre stage. These are highly stressed components that significantly influence the quality of the entire rolling process. This is how the collaboration between Saarstahl and JUNKER began in 2019, with initial grinding trials, when Saarstahl was searching for a new, more efficient and more precise solution for grinding rolling rings. Where previously two separate machines were required to grind the outer diameter and the profile, the JUNKER Lean Selection shaft grinding machine enables complete grinding in a single setup. In addition, the grinding wheel can be dressed directly on the machine, another decisive advantage over the previous solution.

Complete grinding in one setup not only increases process reliability, but also noticeably improves the quality of the rolling rings. The results are impressive, with perfect concentricity, high dimensional accuracy and consistently excellent surface and profile precision. At the same time, significantly reduced non-productive and setup times streamline the production process. Another key benefit is the fast changeover of calibres without additional conversion measures, ensuring a high degree of flexibility in day-to-day operations.

Overall, the JUNKER grinding machine offers a modern, economical and technologically superior solution that clearly outperforms the previous systems.

The rolling rings produced on the Lean Selection shaft are used in the 10-stand finishing block. There, the rolling stock is rolled into wire in four individual roughing and finishing blocks, reaching production speeds of up to 100 m/s. The high performance of the line requires rolling rings that are both extremely precise and durable, requirements that are met through the precise machining on the JUNKER grinding machine. In ongoing operation, up to 500 rolling rings are machined per week on the Lean Selection shaft in an 18-shift model. This performance figure highlights the machine's central role within the production chain and ensures a continuous supply of rolling rings for the four finishing blocks. Today, only a few grinding wheels are required compared to more than one hundred in the past.

HM rolling rings ground on the Lean Selection shaft.

But technology alone does not create success, it is also the collaboration that makes the difference. The very good relationship between the teams is particularly valued and is one that is characterised by open and reliable communication. Both sides were able to contribute to the project, exchange ideas and jointly develop solutions. This partnership-based collaboration enabled both Saarstahl and JUNKER to actively realise their strengths.

A finished block with the carbide rolling rings machined on the Lean Selection shaft.

A finished block with the carbide rolling rings machined on the Lean Selection shaft.

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Delivering complete solutions for industry

From its origins as a specialist mounted point manufacturer and supplier to its position today as a global provider of industrial solutions, Master Abrasives' journey has been defined by continuous growth, innovation and an unwavering commitment to supporting customer success.

Founded in 1967, Master Abrasives established its reputation by supplying high-quality abrasive products and expert technical support to demanding industries such as aerospace and automotive manufacturing. Over the decades, the company built a strong foundation based on engineering expertise, product quality and a deep understanding of customer applications.

Master Abrasives began with trading mounted points and bonded abrasives are still a key product of its own Master brand range.

While abrasives remain at the heart of the business, Master Abrasives today is a very different organisation from the one that began over half a century ago. Since becoming an independent UK-owned company in 2012, Master Abrasives has experienced sustained growth across both its product portfolio and customer base, expanding its reach throughout the UK and international markets.

Today, Master offers a comprehensive range of abrasive consumables, power tools, machinery and equipment, providing customers with a complete solution from a single trusted source. This evolution has enabled the company to support manufacturing operations more effectively, helping customers improve productivity, consistency, quality and cost efficiency across their processes.

Master Abrasives serves a diverse range of industries, including aerospace, automotive, medical device manufacturing, precision engineering, energy and general industrial sectors. Many of these industries operate to the highest standards of quality and compliance, requiring partners that can deliver not only reliable products but also expert technical support and process knowledge.

"What continues to set MA apart is its commitment to understanding our customers' challenges and developing practical solutions," explains Master Abrasives' managing director Paul Batson. "Our experienced technical and applications engineering teams work closely with customers to identify opportunities for process improvements, increased productivity, reduced costs and enhanced product performance. This consultative approach has enabled us to build long-term partnerships with manufacturers both in the UK and around the world."

Alongside its growth in the UK market, Master has successfully expanded its international presence, developing strong customer relationships across Europe, North America and other global manufacturing regions. Strategic investments in international operations have strengthened the company's ability to support customers locally while maintaining the technical expertise and responsiveness that have become synonymous with the Master Abrasives name.

The continued development of the Master® brand has also played an important role in the company's success. Through ongoing investment in product development, quality systems and technical resources, Master Abrasives has built a portfolio capable of meeting the evolving needs of modern manufacturing.

As manufacturing technologies continue to advance, Master remains focused on helping customers navigate new challenges and opportunities. Whether supplying abrasive consumables, power tools, machinery and equipment, or developing bespoke process solutions, the company's objective remains unchanged: to provide industry with the products, expertise and support needed to achieve better results.

The company continues to grow by staying true to the principles that have shaped its success: technical excellence, customer partnership, innovation and a commitment to delivering complete solutions for industry worldwide. Master Abrasives is a Daventry-based independently owned company that has built an enviable reputation for quality and service that is as strong today as it has always been. The well-known trademark of 'Master' offered by the company in the UK and world-wide allows the Master Abrasives to offer its customers a wide range of abrasive consumables.

Master Abrasives operates from a production site in Daventry, Northamptonshire.

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NCMT opens Coventry Technology Centre for Engineered for Power event

Leading manufacturing technology provider NCMT will host a two-day technical event at its Coventry Technology Centre on 9th-10th September 2026.

Entitled 'Engineered for Power', the event is dedicated to precision grinding and advanced manufacturing for turbine blades, vanes and high-value engine components.

This event has been created specifically for manufacturers working across aerospace, industrial gas turbine and power generation applications. The event will showcase how advanced grinding, EDM drilling and machining technologies can support the production of complex, high-value components where profile accuracy, surface finish, repeatability and process stability are critical.

The new Makino G5 grinding machine with Pro6 control will be a central focus of the event, combining grinding and machining in a single platform for complex component production. Visitors will see how the G5 addresses the demands of turbine blade and vane applications, where geometry, material behaviour and production consistency are critical.

As the exclusive partner of Makino and Okuma in the UK and Ireland the event will also highlight supporting technologies, including EDM and advanced machining solutions, allowing visitors to consider the wider processes available for turbine component production.

Jonathan Smart, managing director of NCMT, says: "Engineered for Power has been designed for manufacturers who are dealing with some of the most demanding production challenges in aerospace and power generation. Turbine blades, vanes and engine components require absolute confidence in process stability, accuracy and repeatability. This event will give visitors the opportunity to see relevant technologies up close, discuss real applications with our specialists and understand how NCMT can support them from process development through to long-term production performance."

Visitors attending the event will be able to see and discuss:

- The Makino G5 and its role in precision grinding for turbine blades and vanes
- EDM drilling technology for cooling holes and critical component features
- Advanced Makino and Okuma machining solutions for complex, high-value parts
- Process-led approaches to repeatability, surface finish and production stability

- Application support from NCMT and its technology partners.

The event is aimed at OEMs, Tier-One and Tier-Two suppliers, aerospace manufacturers, power generation companies, gas turbine component manufacturers, precision engineering subcontractors, manufacturing engineers, production managers, process development teams and technical buyers.

Engineered for Power takes place at NCMT's Coventry Technology Centre on 9th-10th September 2026 and registration is now open here: ***https://www.ncmt.co.uk/event/efp/***

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XYZ 65 LTY-S purchase allows for alignment at JCF Engineering

Since 2008, when JCF Engineering was founded as a subcontract machining business by John Felton, the company has invested in XYZ machines of various types to allow for the manufacture of a wide range of components. Such has been the success of the business that it now has two sites, one located in Scunthorpe and a second facility in Norfolk. It's at the Scunthorpe location that the latest acquisitions of a XYZ 750 LR VMC and a 65 LTY-S, a sub spindle turning centre are located, to handle the growing demand on the company to produce among other items sub-sea parts.

When John Felton saw that XYZ had launched a sub-spindle lathe, it had him thinking about how he could reduce setup and handling times on parts that were getting ever more complicated, especially as there are only two members of staff on site.

John Felton states "We were spending a lot of time here at JCF doing setups for the 2nd or 3rd operations when taking parts from the single spindle lathes to the machining centres fitted with 4th axis. We saw the opportunity that by investing in the XYZ 65 LTY-S that we could reduce this non-productive time and create extra capacity on the existing machines and produce additional work."

The 65 LTY-S purchase has certainly achieved the aims that JCF had. It has allowed JCF to produce parts that have an ever increasing complexity but also allow increases in capacity John Felton comments: "Since the investment in the 65 LTY-S, our turnover has grown substantially and it was only after we had got into the swing of using the machine that we fully appreciated the gains that were being provided.

"There are a number of areas that this machine excels for the work we do. Firstly, the fact that the machining features are all aligned between first operation in the 65 mm bar capacity spindle and the 45 mm capacity sub spindle, with the sub-spindle coming across and clamping on the part before parting off ensures the machine never loses where the part is during the manufacturing process. This is aided by the easy-to-use Siemens 828D control, fitted with Shopturn software. We have yet to find a job we cannot program through the Shopturn software and it reduces any need for CAM in the office.''

John Felton, owner of JCF, taking full advantage of the Siemens Shopturn software on the XYZ 65 LTY-S.

John Felton continues: ''In fact, programming transfer of the part from main to sub spindle was covered by XYZ in a matter of minutes. Secondly, the BMT65 turret has real benefits for us. The holding of a number of static or driven tools in each station has proven to be a massive advantage. With the Y axis having 100 mm of travel, 50 mm above and below centre height, the flexibility to move tools off centre for not only milling, drilling and tapping, but also the turning style tools has opened up capability and reduced setups, as most of the time the tools we require are already in the turret and set. Finally, the machines motorised spindles offer masses of power, 22 kW main spindle and 15 kW sub-spindle, for the main material we machine which is 316 stainless steel but having driven tools running up to 5,000 rpm is helpful when machining material such as PEEK".

Since the formation of the business, JCF have continued to purchase XYZ products from the Devon-based company in many different formats. John Felton concludes: "XYZ's products have provided us with the perfect machining platform for the work we produce and the LTY-S has been no exception. The support has been excellent and if the service team visit, they know the products well and provide a fast and efficient service. This, mated with the controls that XYZ fit, namely ProtoTRAK and Siemens using conversational software, ensures the machines are a perfect match for our business".

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Tigfusion becomes first UK company to invest in Mazak CV5-700

Tigfusion Ltd, a leading manufacturer of high precision vacuum chambers, is the first company in the UK to order a next generation CV5-700 5-axis machining centre from Yamazaki Mazak.

The CV5-700 at Tigfusion's facility in Hastings is the first to be purchased in the UK.

Hastings-based Tigfusion, which began trading in 2013, has invested considerably in its manufacturing capabilities over the last five years, having tripled the size of both its manufacturing facility and its headcount.

Now, Tigfusion is keen to build on this momentum, with the introduction of Mazak's new CV5-700 machine to its workshop floor, through which it aims to expand throughput substantially.

"Having invested in a 5-axis machine from another supplier four years or so ago, we've already greatly expanded our capabilities," explains Jack Walsom, Tigfusion's managing director. "Our focus has been not only on increasing our output by orders of magnitude, but also on optimising the quality of our products and delivery time, two major focuses for the company."

Produced at Mazak's European manufacturing facility in Worcester, the CV5-700 is part of the next generation of Mazak's highly popular CV5 series of UK-made 5-axis machining centres, which also includes a revamped CV5-500. The CV5-700 is capable of handling large workpieces up to Ø700 mm by 450 mm (H) and 400 kg in weight. As well as a new aesthetic from renowned industrial designer Ken Okuyama, the new model benefits from an optimised machine structure to enhance its static and dynamic rigidity, resulting in greater performance, accuracy and thermal stability.

"The old machine had an extremely large bed, which effectively meant you could be machining an item that's only the size of a cup lid on a bed that's two and a half metres wide. This essentially restricted you from boring certain chambers that could be very important for us as a business," continues Jack Walsom. "By purchasing the new CV5-700 from Mazak, our goal was to push capacity ever further while continuing to focus on premium quality. The fact that simultaneous 5-axis machining comes as standard on this model was a big pull factor and it opens the door to producing other parts and finishes that we couldn't do before. It will also enable us to offer a more standardised product range for our customers, most of whom are UHV system builders."

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Latest Miyano is subcontractor's go-to lathe

Established as a sliding-head turned parts subcontractor in 2001 by Michael Laybourne, Yorkshire Precision Engineering Ltd (YPEL) diversified into fixed-head turning six years later with the purchase of a new, Japanese-built Miyano BNJ-42SY twin-spindle, twin-turret lathe. The 42 mm bar-fed machine was supplied by the sales agent at the time, Macro Machine Tools, which became part of Citizen Machinery UK in 2011.

YPEL was so impressed with the lathe's performance that when a similar, second-hand machine came onto the market a year later, Michael Laybourne and his wife Lynda, the financial director, snapped it up. Both machines have served as workhorses ever since, running virtually continuously on weekdays, including a considerable amount of lights-out production and frequently at weekends as well.

In the intervening 20 years, a lot has changed at the Keighley, West Yorkshire factory, which is now run by Michael and Lynda's sons Sam and Jack, both time-served engineers like their father. In November 2024, they bought a modern, larger Miyano of 65 mm bar capacity, a BNE-65MYY. Despite another six fixed-head lathes of various makes arriving on the shop floor over the years, the latest machine is the undoubted favourite of the second-generation directors.

Sam Laybourne explains that a key feature of the BNE is its box sideways that are hand scraped to near-perfect smoothness and flatness. The process removes high spots on the hardened steel surface, lowering noise, virtually eliminating vibration and chatter, prolonging tool life and improving the surface finish on machined components.

Furthermore, box ways rather than linear guideways provide better rigidity for selecting higher cutting data when turning and especially when milling. It contributes substantially to the machine's productivity, particularly as prismatic machining frequently accounts for between 20 percent and 50 percent of a cutting cycle in the Keighley factory.

YPEL has been in contact with Citizen Machinery UK since 2011, when the company took over responsibility for Miyano turning centres in the field. Jack Laybourne confirmed that the service they have received over the years has been consistently reliable.

It prompted him and Sam to visit the supplier's stand at MACH 2022, where a BNE-65MYY was being demonstrated. The seed was sown and the lathe arrived in Keighley a couple of years later. The original intention had been to replace one of the older Miyanos that was no longer working, but Citizen managed to repair it so it continues in daily use, even after two decades.

There are many attributes of the latest Miyano that both brothers appreciate. One is its stability, both mechanically and thermally, which results in effortlessly holding tolerances down to ± 10 microns, although ± 0.1 mm is more generally stipulated on customers' drawings. A wide range of materials is processed, from Duplex and Inconel through to engineering plastics.

Not only is the machine typically twice as productive as the early Miyano models, but there is scope for even shorter cycles using the BNE's superimposed machining capability, where three tools can be cutting a part simultaneously at both spindles, despite the lathe having two turrets. This facility has not yet been adopted in Keighley but will be in the future for the right jobs, namely reasonably long runs of parts with complex features, where the somewhat longer setup times can be justified.

YPEL staff was comprehensively trained by Citizen to program, set and operate the latest Miyano. The subcontractor opted to buy the relevant edition of Citizen's Alkart Wizard conversational programming software, which bridges the gap between manual G-code data entry and full-scale CADCAM.

The beneficiaries of these technology advances are YPEL's many customers, about 40 percent of which are in the oil and gas sector, with a further 20 percent operating in the medical industry. That the subcontractor has held ISO 9001 accreditation since the company started has led to a lot of work in many other sectors as well, including agriculture, electronics, marine and pharmaceuticals.

The successful implementation of the Miyano BNE-65MYY on the shop floor in Keighley has prompted the subcontractor to further upgrade its capacity by placing an order for another new Miyano, a model BNJ-51SY7 LFV.

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Reaping the rewards from the new multi-tasking lathe investment

Mills CNC, the exclusive distributor of DN Solutions and Zayer machine tools in the UK and Ireland, has recently supplied Chesterfield Special Cylinders (CSC), a leading design and manufacturing specialist of high-pressure gas containment solutions for safety-critical applications and systems, with a new box guideway multi-tasking lathe.

The 10" chuck/102 mm bar capacity DN Solutions Puma 3100LSY, equipped with a sub-spindle, Y-axis and driven tooling capabilities, was installed in a dedicated 'large product' machining zone within CSC's' 100,000 sq. ft. manufacturing facility in Sheffield in February 2026 and is the first machine tool the company has acquired from Mills CNC in its long and illustrious 125 year history.

Since being installed, the Puma 3100LSY has been put through its paces machining relatively small industrial cylinders that are used in a range of safety-critical applications in the aerospace and defence sectors. CSC is also trialling it to machine different sized, shaped and configured cylinder adaptors and adaptor components. CSC's industrial gas cylinders are used and specified by a growing number of domestic and overseas customers.

The cylinders machined on the Puma 3100LSY are relatively small and are made from mild steel or alloy steel tubes, which once cut to size, undergo in-house hot forming and forging operations. Once the forming and forging processes have ended, the cylinders are then machined to completion on the Puma 3100LSY.

Different machining operations here include the removal of mill scale, a hard bluish/black oxide layer that is created during the forming process on cylinder surface exteriors. The removal of this is a critical task as the presence of mill scale can negatively affect cylinder finishing operations, such as poor paint and protective coating adhesion. Removing the mill scale is a difficult process that requires the right tooling, such as negative rake carbide inserts and the use of a rigidly-designed machine, like the Puma 3100LSY.

CSC is an innovative and progressive company committed to continuous improvement and, as such, regularly invests in its people, equipment, systems and processes. In 2025, the company audited and benchmarked its in-house turning capacity and capabilities in order to identify and rectify production bottlenecks and process inefficiencies which could affect future productivity, machine shop throughput and lead time fulfilment.

The audit confirmed an issue with the company's existing turning capabilities, specifically with one of its existing lathes which had resulted in it being side-lined.

Adam Mellor, CSC's production engineer, states: "The lathe in question had been earmarked for machining our small cylinder products and adaptors, but it just wasn't up to the task. The machine's limited capabilities, combined with a lack of skilled operators on site, had resulted in us subcontracting our small cylinder and adaptor work out to third party suppliers."

Whilst this subcontract route provided a solution to CSC's immediate turning issues, it did have some downsides. Primary concerns were the significant costs involved in subcontracting the work out, as well as the inevitable relinquishing of control.

Adam Mellor says: "From both a cost and control perspective, we made the decision to bring this work back in house. To achieve this, we decided to invest a new multi-tasking lathe." Although the Puma 3100LSY lathe was delivered and installed in February 2026, the procurement decision-making process started some months earlier, with key production staff from CSC initially drawing up a comprehensive pre-purchase machine tool checklist that detailed several new lathe 'must haves'.

Following further in-depth discussions between CSC representatives and Mills' sales and technical staff covering the technical capabilities, cutting performance, purchase cost and availability, the decision to invest in a new FANUC-controlled Puma 3100LSY was made. The order was placed at the end of 2025, with machine delivery, installation and operator and programmer training occurring in February/March 2026.

The Puma 3100LSY has significantly upgraded CSC's machining capabilities and, in just a few months, has delivered many tangible business benefits such as reducing the volume of work being subcontracted out to third party suppliers and improving machine shop productivity and process efficiencies.

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Subcontractor installs large-capacity 30-taper machining centre

Contract machining firm ALM Engineering Solutions has strengthened its capacity and expanded its automation-driven production following investment in a Japanese-built Brother Speedio W1000Xd2 machining centre. Supplied by UK and Ireland sales and service agent Whitehouse Machine Tools, the 3-axis machine was installed at the subcontractor's Newton Aycliffe facility at the end of 2025 to enhance the company's production capability, flexibility and lights-out manufacturing.

Tony Thompson, MD, ALM Engineering Solutions.

Established 31 years ago, ALM supplies machined components and assemblies to a broad range of OEM customers. It has built a loyal user base across diverse sectors, including manufacturers of air filtration systems often destined for the medical sector and producers of nitrogen and hydrogen gas generation equipment, with hydrogen applications currently experiencing strong growth as part of the transition to green energy.

The company's reach also extends into the entertainment industry, supporting large-scale concert infrastructure for global artists such as The Rolling Stones and Lady Gaga and it also produces its own robotic tooling, assembly-line equipment and architectural hardware.

The decision to invest in the Brother machine was driven primarily by capacity constraints. Managing director Tony Thompson explains: "One of the main attractions of the Speedio was the size of the bed, as we were previously limited by our existing machines, which have a maximum of 700 mm in the X-axis."

The Speedio's one-metre table has enabled the company to take on larger components and improve throughput, particularly when combined with the machine's wide range of machining capabilities. Despite its large working envelope, the Speedio with its compact footprint fitted neatly into ALM's 14,000 sq ft facility, where space utilisation is important.

The machine has been integrated seamlessly into a densely populated shop floor, supporting a high output of components and efficient material handling using pallet trucks. The company's ability to manufacture tooling in-house has significantly enhanced responsiveness to customer demand by reducing reliance on third-party suppliers.

A key differentiator of ALM's operation is the use of its own collaborative robots, branded Cobots Online. The Speedio is paired with one of the mobile cobots developed in-house, joining a population of seven such cobots deployed across the factory floor. The systems are designed for rapid deployment, with the ability to be moved between machines and set up within minutes.

Featuring quick-change tooling, integrated hydraulics and simple connectivity via a 13-amp supply, ethernet connection to the machine and an air supply, the cobots can be easily repositioned or removed entirely if manual machining is required. All operators are trained to program and use the systems, eliminating the need for dedicated automation specialists.

The integration of cobot automation with the Speedio has delivered a step-change in productivity: "It's massive really, giving us 24/7 flexibility," states Tony Thompson. "We don't need to ask our staff to work all over the weekends. We have someone come in on Saturday morning and then later in the afternoon and the machine runs unattended all day."

This approach allows the company to scale production up or down rapidly in response to fluctuating demand, moving from a standard two-shift pattern to continuous operation when required. As a result, ALM reports that overall production capacity has increased by nearly

Above: Four Views of the Brother Speedio W1000Xd2 with Cobots Online component handling on the shop floor at ALM, Newton Aycliffe.

50 percent over the past two years since the holistic adoption of automation, without any increase in headcount.

The Speedio itself has proven straightforward

to use, despite representing a departure from the subcontractor's previous reliance on largely FANUC-controlled machines. Equipped with Brother's proprietary CNC-D00 control, the latest machine was quickly brought into production following training from Whitehouse Machine Tools. Operators were able to transition rapidly, enabling immediate utilisation, including out-of-hours running.

The machine's performance has been a key factor in maximising profitability in a competitive subcontract market. The BT30 tooling, 16,000 rpm, high-torque, face-and-taper-contact spindle, rapid traverse rates of 56 m/min and cutting speeds up to 30 m/min allow ALM to push productivity limits. Recent applications have included tapping M3 blind holes at 4,000 rpm, demonstrating the machine's high speed and precision in demanding tasks.

The flexibility offered by combining a large-bed with automated handling has enabled ALM to accommodate a wide mix of work, from small batches of components to large, more complex parts. This aligns with the company's strategy of offering a comprehensive manufacturing service, including machining, assembly and finishing processes such as powder coating.

Tony Thompson is clear about the impact of automation within his business and the wider

Two views of automated production of a component in the Brother Speedio cell. The cobot grippers are manufactured in-house by AML.

SME manufacturing community. When asked whether he would recommend automation, he replied: "Massively. The biggest barrier to automation is that people think it is only for big manufacturing companies producing parts in high volumes.

"However, the reality is that if you have a job that runs for maybe two hours, it makes sense to introduce a cobot to handle it, especially if repeat orders come in regularly, as the program can be reused." He added that even small batch work can benefit, as operators are able to set up automated runs in minutes before moving on to other tasks, essentially doubling machine output, even in single-shift environments.

Looking ahead, the positive experience with both the Speedio and Whitehouse Machine Tools is set to influence future investment decisions. Tony Thompson comments: "I am really happy with the machine and with the service that we've received, as well as the support in getting the machine up and running."

The investment in the Brother Speedio W1000Xd2 highlights how strategic machine tool acquisition, when combined with intelligent automation, can unlock significant gains in productivity, flexibility and competitiveness for modern subcontract manufacturers.

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FANUC accelerates Physical AI with Google collaboration

FANUC has announced an enhancement of its Physical AI Robot System through a strategic collaboration with Google, as part of its initiative to accelerate automation by advancing open platforms and Physical AI capabilities. As part of the collaboration, FANUC has developed a Physical AI system for industrial robots that incorporates the latest innovations from Google Cloud, including Gemini Enterprise; an enterprise-grade generative AI with robust security.

'Physical AI' is the integration of cognitive intelligence with physical action. This includes robots that can perceive their environment through sensors, make autonomous decisions and execute tasks accordingly. FANUC robots support ROS, the industry standard open platform for robot control, of which Google is a prominent contributor and maintainer through their Intrinsic robotics AI group. FANUC's portfolio also offers broad compatibility with widely used technologies, including the Python programming language for AI development, high speed communication interfaces for external robot control and interfaces that enable easy operation from PLCs.

Since the release of FANUC's Physical AI

FANUC has announced an enhancement of its Physical AI Robot System through a strategic collaboration with Google.

system at the International Robot Exhibition last December, customer interest has continued to grow rapidly, with over 1,000 FANUC robots for Physical AI-related applications already shipped. At its New Product Open House Show in May, the company demonstrated a next generation Physical AI Robot System featuring generative AI Gemini, which understands human instructions, recognises objects and autonomously operates FANUC robots to perform assigned tasks. This revolutionary 'AI-Powered Agent System for Industrial Robots' enables both collaborative and non-collaborative robots to work together as a single cell based on simple natural language instructions.

In addition, FANUC provides full support for

With industrial automation as a priority, FANUC is actively investing in the research & development of advanced AI technologies, filing AI-related patents across a wide range of fields, such as numerical control devices and robot control.

robot control compatible with Intrinsic's development environment, 'Flowstate'. Flowstate software is interoperable with ROS and allows for the quick and easy development of highly adaptable AI solutions by leveraging FANUC's open platform technologies. FANUC is also participating in Google DeepMind's 'Gemini Robotics Trusted Tester Program' to advance AI research on foundational robotics models for AI.

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From technical centre development to the track

More familiar with delivering projects for world leading manufacturers, CERATIZIT UK & Ireland project specialist Stephen Pennington was recently challenged with a STEM project by 11-year-old Max Frisby.

As a STEM sponsor for the go-kart racer, the racing prodigy, who had a troublesome exhaust bracket, was invited to CERATIZIT's Technology Centre in Sheffield to see the bracket reverse engineered, re-designed and manufactured to enhance track performance and reliability.

The captivated schoolboy stood at a 5-axis machining centre and watched a billet of titanium become a component that bore his name, engraved using a 1 mm CERATIZIT ball nose end mill, but that was just the finishing touch. The exhaust bracket for Max Frisby's competition go-kart is as much a story about engineering culture and nurturing the next generation of talent as it is about titanium machining and tooling.

Living in Motorsport Valley in Northamptonshire, Max's father, Nev, is a technical sales engineer at CERATIZIT UK & Ireland and first introduced his son to the exhilarating sport. At Whilton Mill Karting Circuit, a coach spotted the young talent after watching him for a few laps, telling Nev Frisby his son was already matching the fastest kids in the circuit's academy.

Since then, Max Frisby has won the Whilton Mill Academy Championship and competed in the Daniel Ricciardo Series (DRS), the UK-recognised national motorsport championship. The young racer now takes part in both the Whilton Mill Club Championship and the Shenington Kart Racing Club Championship.

Away from the track, Max Frisby competes in STEM Racing; the Formula 1-endorsed programme formerly known as F1 in Schools through his primary school. Max's school joined specifically because of CERATIZIT UK & Ireland's existing partnership with STEM Racing UK. The company provides technical expertise, industry judging and support at national finals which demonstrates its commitment to the future of the industry.

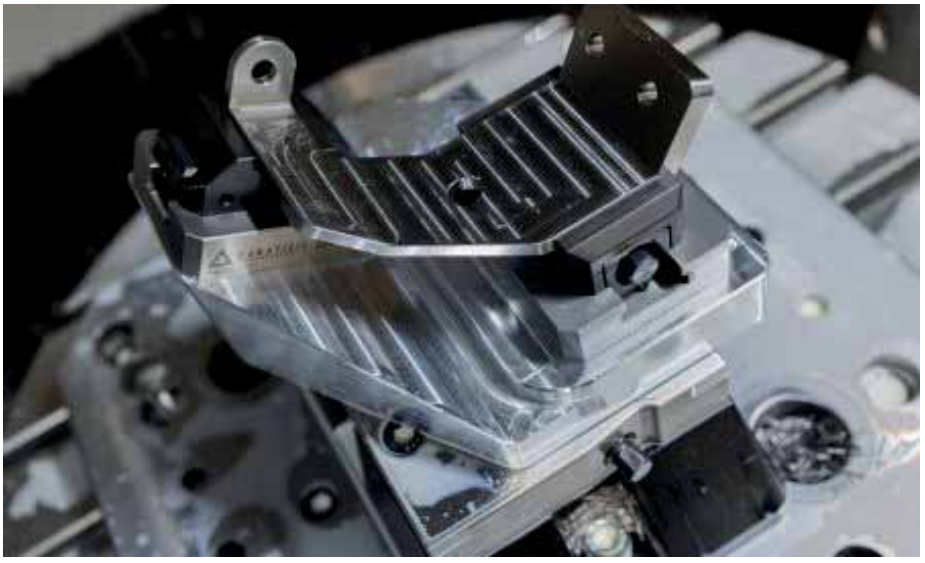
The exhaust bracket on Max's competition go-kart operates in a particularly demanding environment. Continuous vibration from a two-stroke engine capable of exceeding 60 mph requires the bracket to be both robust enough to secure the exhaust system and resilient enough to prevent cracking at its mounting points. The original bracket on his Iame Waterswift Inter kart was made from steel, essentially pressed sheet metal, comprising two separate parts: the bracket and a mounting plate. During races, the assembly tended to vibrate loose, posing both a reliability risk and a safety concern.

Nev Frisby brought both steel components to Stephen Pennington at the Technology Centre with a straightforward brief: redesign and manufacture as a single titanium part. The over-riding aim was to lower mass and minimise vibration with improved structural integrity while also putting the 'Max Frisby Racing' brand in a visible location on the kart.

With no existing CAD data to reference, Stephen Pennington created the 3D geometry solely from hand measurements in Fusion 360, merging the two-piece assembly into a single unified component. Removing the interface between the bracket and its mounting plate eliminated a potential failure point, decreased the number of fasteners from five bolts to three and made on-kart installation simpler.

Once the CAD model was finished, it was exported as a STEP file and 3D printed in PLA on a Bambu Lab X1C using Bambu Studio software. Nev Frisby fitted the prototype directly onto Max's kart to check the geometry and clearances before any metal was cut.

With the design verified and approved, Stephen Pennington used Fusion 360 for CAD modelling and hyperMILL from Open Mind



Technologies for CAM programming, building a complete digital twin of the machining environment. This included the fixture, tooling and machine kinematics with every toolpath validated through simulation and collision detection before cutting began.

The bracket's geometry created a workholding challenge, with one angled face and one flat face that required machining in separate operations. For OP 10, standard Gressel ZSG Mini modular workholding products were used. For OP 20, Stephen Pennington designed and machined a bespoke aluminium fixture at the Technology Centre. This 'Made in Sheffield' solution used two vices to grip both faces simultaneously. The fixture was programmed in *hyper*MILL and a 3D-printed trial piece confirmed clamping before loading the titanium billet. With Max present on the day, a seamless setup was crucial and the custom fixture facilitated this.

Tool selection was vital to the project's success. CERATIZIT's ISO-S MonsterMill range, launched at EMO last year, is a family of solid carbide end mills and drills designed specifically for heat-resistant super alloys, but performs extremely well on titanium too. Stephen Pennington had been recommending the range to aerospace clients since its debut and the Max Frisby bracket gave him the chance to demonstrate the performance on the Technology Centre's own machines.

Bulk material removal was performed using a 16 mm six-flute ISO-S trochoidal end mill running at 10 percent radial stepover to maintain continuous contact and prevent heat build-up in the titanium. A four-flute ISO-S end mill of the same diameter then followed, switching to conventional roughing at 40 percent stepover and 1XD machining to speed up stock removal. Contour finishing was completed with a 12 mm eight-flute ISO-S finisher at 12 mm diameter, the smaller size chosen to reach internal corner radii, before a 1 mm ISO-S ball nose engraved the Max Frisby Racing logo and text into the face of the bracket.

The top face was machined using a five insert A211-DC indexable face mill with 3D-printed internal coolant channels routed directly at each cutting edge. The CTC5240 titanium-grade indexable insert was paired with the A211-DC for the facing operation, while mounting holes were drilled using WTX-Ti solid carbide drills from the ISO-S range, with a SilverLine chamfer cutter completing the sequence.

Finishing the curved edges on the bracket would have required a ball nose end mill with a 0.2 mm step-down, slow and labour-intensive. Stephen Pennington chose a barrel mill from the ISO-S range that increased the step-down by ten times to 2 mm to reduce cycle time while improving surface finishes.

The total cycle time across both operations was approximately 2.5 hours. The finished bracket is lighter and stronger than its steel predecessor, integrates two previously separate components into one, carries the Max

Frisby Racing identity and is unlikely to ever vibrate or cause reliability concerns.

The Max Frisby Racing project closely aligns with CERATIZIT UK & Ireland's broader commitment to developing the next generation of engineering talent. Through its STEM Racing partnership, the company provides technical support to student teams, judges secondary school events and produces precision trophies for the national finals.

CERATIZIT UK & IRELAND Ltd
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Compact rotary tables offer large 5-axis machining volumes

Designed to convert small, 3-axis, Vertical-Spindle Machining Centres (VMCs) into 5-axis production centres, while at the same time allowing them to punch above their weight in terms of the size of component that can be machined, Kitagawa has launched two new compound rotary tables. The Japanese-manufactured RKT500 and RKT600 are available in the UK and Ireland exclusively through sales agent 1st Machine Tool Accessories, Salisbury.

The intended host machine is one of the many 30-taper VMCs on the market that only has linear CNC motions, to which the tables add two rotary axes. Smaller 40-taper machines may be similarly converted, or even 50-taper models, provided that the maximum thrust forces during cutting are adhered to.

The RKT500 can accept workpieces up to 500 mm in diameter by 270 mm high, the respective dimensions for the RKT600 being 600 mm and 320 mm. Maximum weight of workpiece and fixture is 100 kg in both cases.

From detailed discussions with its user base during the design phase of the tables, Kitagawa recognised how important it is to make available a large quantity of services to the faceplate to allow a customer to automate workholding. Both tables are provided with a coolant port and the RKT500 rotary table has six hydraulic or pneumatic ports, with the RKT600 having 10.

Utilising its patented, multi-plate braking technology, on both rotary tables Kitagawa is able to deliver a generous 740 Nm of clamping torque for the tilting axis and 600 Nm for the rotating axis. Speed throughout the -30 / +120 degree tilt angle is 80 rpm, table rotation being 70 rpm and 50 rpm for the smaller and larger models respectively.

A defining feature of the tables is their high accuracy positioning, to within 30 arc-seconds in both the rotary and tilt axes, with ± 2 arc-seconds repeatability. It is largely down to Kitagawa's roller gear cam mechanism which, compared with a traditional worm gear drive, offers the advantages of zero-backlash, as well as higher torque transmission efficiency, rigidity and indexing speed. The latter is important to avoid delaying cutter access to the workpiece after a high-speed tool exchange.

Once each axis has arrived at its allotted angular position both quickly and accurately, it is clamped there using Kitagawa's multi-disc braking technology. It is a key feature that allows the rotary tables to achieve higher clamping torques than competitors' systems, without increasing the physical size of the unit. By stacking discs together, the total frictional surface area presented for braking is maximised, while the table's footprint is minimised.

1st Machine Tool Accessories Ltd
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A Kitagawa RKT500 compound rotary table mounted on a 30-taper machining centre

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Efficient die changing and clamping for trimming large castings

Located in the German municipality of Moemlingen, Aulbach Automation abk Pressenbau is a leader in the manufacture of presses for trimming large castings. For more than a decade, it has relied on powered die changing systems, ball and roller bars and die clamping elements from Roemheld in Laubach, Germany, whose UK subsidiary in Cramlington serves the British and Irish markets.

In modern mega- or giga-casting processes, a large, single-piece structural component is made of die-cast aluminium, anything from an individual subframe to an entire battery housing or a complete front or rear undercarriage. It replaces dozens of individual components, sometimes more than 100, that are normally welded together to form an assembly. The technology, pioneered by Tesla and now used by numerous vehicle manufacturers globally, simplifies production, reduces weight and improves rigidity.

However, the large component formats and heavy weights place extreme demands on post-processing operations. Aulbach Automation understands this well, as the 70-employee company specialises in the manufacture of trimming presses for the foundry industry. It has been working in the mega- and giga-casting sector since 2021 and by September 2025 had delivered 23 four-column presses for shearing off excess aluminium flash and other overflow material from castings measuring more than 3 x 2.5 m.

André Pfeifer, technical project manager at Aulbach Automation says: “In our view, there are many reasons to choose Roemheld products, including their precision, reliability and durability. In addition, the coordination of the elements with each other is excellent, delivery times are short and the service is impressive.”

The main advantages of automated die changing, including for trimming castings, are reduced setup times and increased reliability. The focus on the presses that Aulbach Automation supplies is on the accuracy of the changeover process. If dies are positioned inaccurately or clamped incorrectly, they can easily be damaged, or faulty components can be produced. In addition, with Roemheld products an operator benefits from high levels of ergonomics and safety.

The table surface of an Aulbach Automation press incorporates Roemheld transport rails that feature hydraulic ball or roller bars that lift to allow the heavy lower part of the die set to roll in smoothly. Once it is aligned, the rails lower and the die rests flat on the press table. Set into the table are hydraulically-actuated, double-acting, swivelling clamping elements, also supplied by Roemheld.

To avoid interference, the clamps are rotated out of the way at a 45 degree angle while the die is being rolled into place. Once sensors confirm the die is in the correct position, the clamps rotate through 45 degrees and move downwards over the die edge with a force of between 60 and 412 kN. They are engineered to tolerate slight misalignments or edge variances of up to 1.5 mm.

The upper half of the deflashing die must similarly be secured rigidly to the press ram. In this case, 90 degree hydraulic swivel clamps swing over the upper die and lock it to the ram surface, maintaining tight tolerances within a few tenths of a millimetre. As any slight misalignment with the lower die would cause catastrophic damage to the expensive tool and probably scrap the casting as the ram descends with typically 400 tonnes-force, the clamping system relies on a central Roemheld hydraulic unit equipped with electronic monitoring.

Inductive proximity switches continuously monitor the precise physical location of the clamp, electronically verifying three distinct states: released, rotated and clamped. If one sensor records a fault, the press is instantly locked out. The swivel mechanism is additionally protected by a spring-loaded overload device and a manual emergency control is in place in case of a sudden power outage.

Mega- and giga-casting lines are costly and lost production during stoppages is expensive. Monitoring upper and lower hydraulic clamping of deflashing die sets during automated changeover and linking it to a centralised control panel to oversee the processes allows an operator to swap the multi-tonne tools in minutes rather than hours, radically increasing factory throughput.

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Walter integrates SERI clamping systems into its portfolio

Machining expert Walter is integrating SERI's high-performance clamping fixtures into its range of services. This means that, for the first time, Walter is able to offer its customers a complete machining process from a single source, right from the clamping system and machining strategy to tooling, project setup, management and services.

With the integration of SERI clamping fixtures and related services into the Walter portfolio, Walter now provides a complete solution for individual machining challenges. For machining companies, this means they can design the entire machining process and manage procurement with just one partner. They also receive support with setup and start-up in production. Walter's process experts deliver a machining solution in which all components are harmonised to achieve optimal results in the process. This eliminates the need to coordinate with multiple partners, enables changes to be implemented more swiftly and ensures that status reports are available in a consolidated format at any time.

The optimally coordinated tools and clamping fixtures not only ensure a smooth start to production but also support long-term productivity. Thanks to SERI's many years of experience, Walter supplies machine-ready fixtures that have already been extensively tested in advance. They are designed to be easy to maintain, based on standard hydraulic components and feature easily replaceable wear parts.

SERI clamping fixtures stem from over 30 years of expertise in mechanical engineering, machining, and project management. Established in 1988 as an independent company in Portugal, SERI specialises in clamping systems for manufacturing components for the automotive and aerospace sectors. These predominantly include chassis, E-mobility and combustion engine parts. Since 2022, SERI has been part of Walter AG.

The expanded offering is presented on the website:
https://www.walter-tools.com/en-gb/services-walter/project-planning/clamping-devices

Walter AG was founded in 1919 and is now a leading metalworking company. As a provider of specialised machining solutions, it offers a wide range of precision tools for milling, turning, drilling and threading applications. Walter works together with its customers to develop custom solutions for fully machining components for use in the aviation and aerospace industries, as well as automotive, energy and general engineering. The company demonstrates its Engineering Kompetenz at every stage of the machining process. As an innovative partner capable of creating digital process solutions for optimal efficiency, Walter is pioneering Industry 4.0 throughout the machining industry. With over 3,500 employees worldwide, together with its numerous subsidiaries and sales partners, Walter AG serves customers in over 80 different countries.

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

Custom in-house solution for manufacturing DURO-M lathe chucks

Greater productivity through multi-part clamping systems developed in-house

At RÖHM, multi-part clamping systems are not only used by customers. The company also relies on this technology within its own production to further increase productivity, process reliability and quality. The experience gained in the process flows directly into the development of practical solutions for users across a wide range of industries.

The 4-station clamping solution from RÖHM reduces idle times and enables a production process that is ten percent more productive.

A current example comes from RÖHM's production plant in Dillingen,Germany, where, among other products, the manually operated DURO-M lathe chuck is manufactured. This premium chuck, featuring a scroll plate and through-hole, is used on conventional as well as horizontal and vertical turning and milling machines and also on rotary tables and indexing units.

To further optimise chuck production, RÖHM uses specially developed multi-part clamping systems from its own portfolio. The goal was to reduce machining and auxiliary times while increasing machine runtime with measurable success.

Reduced idle time and higher productivity

By using a self-designed 4-station clamping fixture, machining time per part was reduced by around one and a half minutes. At the same time, numerous auxiliary operations, such as loading, as well as tool and pallet changes, were eliminated. Overall, productivity increased by approximately ten percent.

"We needed a power-actuated solution with higher accuracy, since the components are milled from a pre-turned blank with finished reference surfaces," explains Magnus Strobel, production manager in Dillingen. "In the second setup, the parts are clamped flat from the inside using clamping pockets so they can be held securely without clamping marks, distortion, or interference contours."

The specially developed 4-station fixture proved to be the ideal solution. Starting from the pre-turned blank, the chuck bodies are completely finish-milled in two setups. Simultaneous machining of multiple workpieces significantly reduces idle times and improves utilisation of the Heller HF5500 5-axis machine used.

Automated multi-part clamping for jaw production

RÖHM also uses multi-part clamping technology in its own production for manufacturing the stepped jaws of the DURO-M. Here, an automated production system is employed, consisting of a Chiron DZ 16 W twin-spindle machine, an integrated industrial robot and a custom-developed linear 8-station clamping fixture.

The robot removes raw parts from a pallet and feeds them into the multi-part clamping fixture. After the first milling operation on the underside, the semi-finished parts are temporarily stored and then machined in a second setup. Finally, the robot places the finished components in an organised manner onto the output pallet.

With the consistent use of its own multi-part clamping systems, RÖHM demonstrates that the benefits of this technology are not only recommended to customers but are also successfully applied in its own production.

Looking ahead

"We are currently planning to expand the solution by adding power-operated centric grippers, enabling us to machine cubic parts using this production principle in the future," concludes Magnus Strobel.

Your partner for precision and innovation in clamping technology

RÖHM, headquartered in Sontheim an der Brenz, Germany and with production sites in Dillingen/Danube and St. Georgen, specialises in the development, design and manufacturing of highly precise, robust clamping and gripping devices with long service lives. The products are "Made in Germany" and used by almost all top manufacturers in the global automotive, railroad technology, watchmaking, medical technology, energy technology, armaments and woodworking industries. RÖHM also produces special clamping devices and handling systems for use in clean rooms that comply with clean room class ISO 7 requirements.

8-station clamping fixture within the automated production cell: Here, the stepped jaws are securely clamped for the machining processes.

Finish grinding of the clamping jaws for the DURO-M lathe chuck.

As a systems supplier for turning and milling with a standard range including more than 7,000 items, RÖHM offers a comprehensive selection of clamping tools and systems. It covers the entire value chain, enabling you to find solutions for the most diverse requirements.

The clamping technology is as diverse as the industries that use it. From mechanical engineering to aerospace, RÖHM provides solutions for numerous industries, contributing to their success.

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Leading the way in workholding solutions

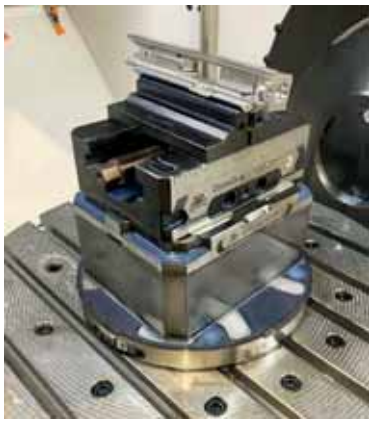
At MACH 2026 in April, Leader showcased an advanced range of keyed, keyless and hybrid industrial and medical drill chucks highlight the breadth of solutions available from Llambrich. The company offers a comprehensive drill chuck programme for the precision engineering and industrial market, with products covering drilling capacities from 0.2 mm to 25 mm in diameter.

Its extensive catalogue includes drill chucks designed to suit a wide variety of applications, from the latest generation of CNC machine tools and stationary equipment to portable drills. Also on display was Llambrich's Medical 'Inox' programme, a stainless-steel drill chuck range developed specifically for surgical instruments.

Increasing productivity with Leader Chuck and Mate Precision Technologies

The next-generation Dyno range, featuring DynoGrip vices, DynoLock base plates and DynoMount pyramids and tombstones was showcased on the Leader stand at MACH by Mate Precision Technologies. Developed following extensive real-world production trials of competing zero-point systems, the new lineup addresses a number of limitations identified during testing.

Each area of the Dyno range features Mate's QuickSpecs 2D bar code tag for real-time access to full product specifications, CAD files and potential integration into your business systems. Alongside this, direct to table mounting and custom mounting bores are available. They are also compatible with some competitor workholding bases when used with applicable bushings and hardware.



Gearing your business with Leader and NGT

Also at MACH, Leader displayed products from NGT, part of the family-owned NovaGroup. Starting with the production of Live and Static Tool Holders with BMT and VDI turrets in 2008, year-on-year the range has been extended to match the increasingly diversified demands from domestic customers in Europe and across the globe. The comprehensive range, which includes Straight, Angular, Straight-Offset, Angular-Offset and Variable Angle Live Tool Holders, will extend the machining capabilities and increase the flexibility of almost any machine tool.

Leader Chuck International is a globally recognised supplier and manufacturer of high-precision workholding, toolholding and

machine-loading automation solutions. Headquartered in Tamworth, UK, the company has over 70 years of engineering experience. It designs its own premium product lines and partners with over 30 leading global manufacturing brands to deliver specialised clamping systems for CNC turning, milling, grinding and metrology applications.

The company has an enviable reputation for the in-house design and production of Leader chucking, stationary clamping, gripping and workholding products. A respected brand name for high quality equipment, the company's most popular lines include Rotary and Static Compact Self-Contained Air Activated 2, 3 and 4 Jaw Chucks and a range of Low Profile, Top Operated 2 and 3 Jaw Manual Stationary Chucks.

Leader Chuck Systems Ltd Tel: 01827 700000
Email: information@leaderchuck.com https://leaderchuck.com/

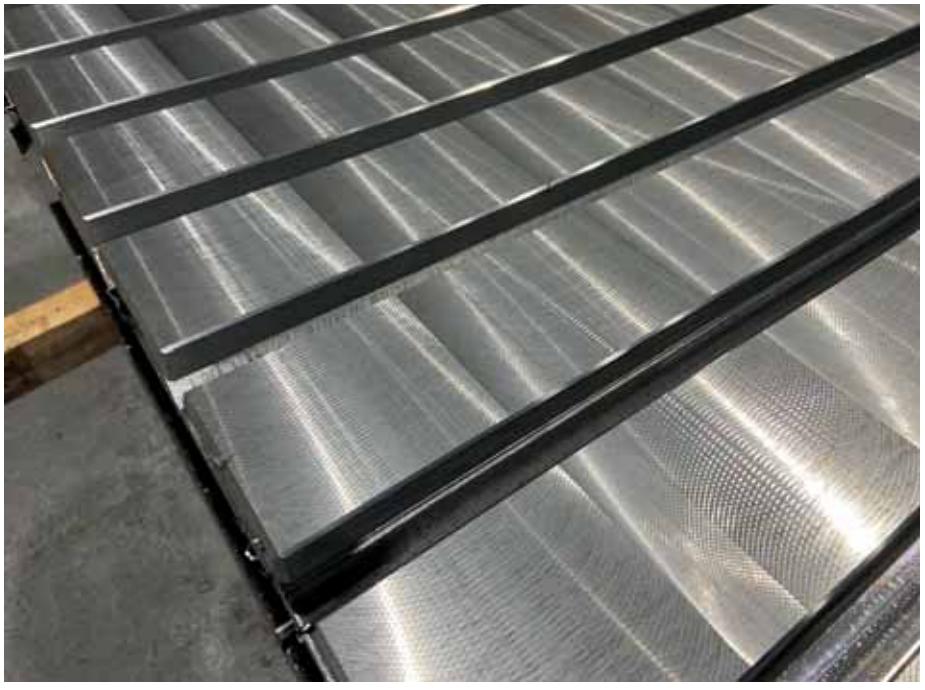
Tebis transforms machining safety and efficiency at Stour Precision Tools

Founded in 1966 Stour Precision Tools Ltd has developed into a leading supplier of robust and reliable tooling solutions. Designing and manufacturing at its facilities in Droitwich, Worcestershire, the company specialises in workholding fabrication fixtures for manual and robotic welding, end of arm tooling for robotic handling solutions, positioning manipulators for manual and robotic applications, as well as workholding machining fixtures.

The company primarily serves major automotive manufacturers and off highway vehicle producers, where high volume output and high-quality finish is essential. Stour Precision Ltd became a Tebis customer in 2023 after it purchased a Soraluce milling FS800 machine. Clive Chaplin, managing director from Stour Precision Ltd explains: "Our new Soraluce machine required far more advanced CADCAM capabilities than our existing setup could support. We needed a solution that would improve CNC programming and deliver greater consistency, while also providing accurate toolpath simulation and reliable machine collision avoidance."

After looking at several options, Stour Precision Tools chose Tebis as its CADCAM system. Tebis stood out for its advanced simulation capabilities and its proven ability to reduce programming time while improving machining quality.

Paul Scally, site manager from Tebis UK states: "In Tebis, we have the ability to build the complete kinematics of a machine directly into the software. This includes everything from the rotational limits of the machine head and the linear travel limits to head change and tool change macros. All these elements are integrated into the Tebis Virtual Machine, giving us a fully accurate and safe simulation environment."



Clive Chaplin continues to explain: "The Tebis software creates a full digital twin, which gives us confidence that we can reach difficult features, run accurate virtual machining simulations, and check the whole manufacturing environment. So, when it comes to pressing the go button, we know we can run the job with full confidence."

This digital twin capability has transformed Stour Precision's approach to manufacturing. By creating a complete virtual representation of machines, fixtures, tooling and workholding; Stour Precision can simulate and verify every operation before it reaches the shop floor, eliminating costly collision risks.

For Stour Precision, collision checking is critical and Tebis allows it to perform this in three distinct stages within the software. The first stage is the planning stage, where Tebis sets up the job on the

machine. At the first stage of the planning process, Tebis Virtual Machine technology provides tools to ensure that a component which is planned to be machined will fit on the designated machine tool. This can be checked along with the optimum setup position, tool tilt directions and cutting tool lengths required.

The second stage is for programming, Tebis uses Virtual Machines for toolpath calculation and collision avoidance, taking into account cutting tools, toolholders and the machine heads. Machine tool rotational axis limits are also included in the toolpath calculation.

At the last stage of toolpath verification, Tebis supports automated toolpath checking. This reduces risks of any collisions, not only against cutting tools, toolholders, machine heads and components, but also the whole machine tools including the shields, barriers, fixtures, clamping devices and any other components setup on the machine at the same time. If there is a problem, it is easy to modify and recheck everything, all within Tebis.

Paul Scally explains: "When we first met Stour Precision, they were already using another CAM software. What they really needed was the implementation of reliable collision avoidance. Switching from one software system to another can feel worrying for any company and it is completely understandable that this stage can cause concern. But from our perspective, there is nothing to be worried about. Tebis is here to support you throughout the entire process, and that is exactly what we did for Stour Precision. We provided a clear implementation plan along with comprehensive training to ensure a smooth transition.

For us, every customer becomes a partner. We build close, long-term relationships and work side by side with each company to help them get the most out of Tebis."

Clive Chaplin also explains that the standardisation provided through the Tebis tool library enables the team to work effectively across the wide variation in its product range. The company's products differ significantly in size and complexity and the Tebis tool library gives Stour Precision the consistency they need to manage this variety.

He concludes: "The support has been excellent and we see a very bright future with Tebis. The level of personal attention we received has been outstanding. The Tebis team has been fantastic, always reaching out, checking in after our first installation and making sure we are getting the full utilisation of the Tebis software. That ongoing commitment has given us real confidence. It is clear that Tebis doesn't just provide software, they are our partners. We also have a wide range of machines and we are now looking at implementing Tebis across these machines as well."

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Tackling disconnected processes with advanced CADCAM workflows

Adam Ball, commercial director at Lantek, explains how manufacturers can solve production challenges with connected digital workflows and CADCAM solutions

Manufacturers are facing the demands of rising material costs, increased energy prices and skills shortages, which can make it challenging to maintain smooth and consistent production, often resulting in delays and disruption to order processing.

While most modern laser cutting, punching and press brake equipment is capable of quick and efficient production output, the true limitations rarely stem from the machines themselves. Instead, inefficiencies come from disconnected software systems, reliance on manual operations and heavy dependence on individual knowledge.

This misalignment between advanced machinery and isolated workflows can significantly compromise production and output quality.

Challenges with isolated workflows

Isolated workflows create significant inefficiencies in manufacturing. When CAD design files, CAM programming, nesting and production planning are handled in separate unconnected systems, it often results in duplicated work, inconsistent data and slower decision-making.

Mistakes that occur during production can be hard to trace and identifying their root cause is time-consuming, especially without connected digital processes. Without clear oversight, manufacturers are forced into reactive problem-solving rather than making informed decisions.

Material inefficiency is another major challenge of disconnected workflows. Traditional isolated workflows frequently overlook factors such as part size, shape, assembly sequence or handling priorities, resulting in excess waste and wasted resources. Poor nesting strategies not only increase material consumption but can also disrupt downstream operations, slowing cutting and handling processes.

Intelligent nesting software integrated into a connected digital workflow system can optimise cutting sequences based on shop floor priorities. It positions parts closely together to maximise sheet utilisation while aligning with production schedules, which minimises handling bottlenecks. This approach not only improves material efficiency but also reduces reliance on individual expertise and human error, allowing manufacturers to operate faster and smarter.

It's also important to note that connected CADCAM software does not replace skilled production teams. Instead, it allows engineers to focus on process optimisation and balanced workloads to improve production planning.

Integrated solutions for seamless production

CADCAM solutions play a central role in bridging the gap between design and production teams, enabling a more connected and efficient manufacturing process. Advanced CADCAM software, like Lantek Expert, is specifically designed for sheet metal fabrication, built around nesting algorithms and machining strategies to maximise material usage and minimise cutting time.

Highly automated and intelligent nesting helps to reduce waste and improve machine productivity, ensuring precise compatibility across multiple cutting technologies, including laser, plasma, waterjet and punching. This streamlined process reduces the risk of errors and provides insight into where bottlenecks can occur and how they can be fixed.

Manufacturers are increasingly transitioning from isolated processes to fully integrated digital workflows to keep up with growing demand. By replacing disconnected systems with advanced CADCAM nesting software, design, programming and production teams can reduce common errors and achieve greater control and efficiency across operations.

Leveraging intelligent nesting algorithms and CADCAM solutions, manufacturers can optimise material yield and maximise the quality of cutting. This greater level of integration provides improved visibility over the entire workflow, enabling manufacturers to make more informed decisions and accelerate output without sacrificing quality."

For more details on CADCAM software, visit ***www.lantek.co.uk***

Lantek Systems Ltd
Tel: 01684 472100
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Hexagon helps manufacturers prepare and verify CNC programs faster in the latest EDGECAM release

As machining strategies become more sophisticated and delivery expectations continue to tighten, CNC programmers are under growing pressure to prepare reliable programs quickly while maintaining confidence on the shop floor. Modern CAM systems provide powerful capabilities to support complex machining. But with longer programs, more operations and increasingly demanding parts, programmers are also spending more time verifying toolpaths, reviewing simulations and communicating machining strategies to operators.

To help manufacturers keep pace with these demands, Hexagon's production software division has introduced new capabilities in the latest release of EDGECAM, focused on accelerating program verification, improving collaboration between programming and production teams and simplifying interaction with the software itself.

One of the most immediate improvements is in simulation performance. EDGECAM now stores snapshots at each tool change during simulation, allowing users to jump backwards through a machining sequence much more quickly. In complex jobs, rewind times can drop from around 30 seconds to close to one second, helping programmers review long programs without interrupting their workflow.

The release also strengthens communication between programming and production teams. A full 3D machine simulation can now be recorded and embedded directly into Live Job Reports, allowing operators to review machining processes interactively in a browser, even without an EDGECAM licence. They can zoom, rotate, adjust playback speed and scrub through the timeline to better understand how the job will run before pressing cycle start.

This visibility is particularly valuable for complex work, including multi-axis machining, large fixtures, and safety-critical setups where operators benefit from a clearer picture of the programmed strategy before machining begins.

Alongside these verification improvements, EDGECAM continues to advance machining performance through enhancements across several toolpath cycles. Updates include support for lens tools in the Parallel Lace cycle, smoother roll-in movements in Face Milling, improved holder-aware collision avoidance in Rest Roughing and expanded Race Line controls for more selective finishing operations. These refinements help programmers generate efficient toolpaths with better surface quality, improved tool engagement, and fewer manual adjustments during setup.

The release also introduces Hexagon Copilot for EDGECAM, bringing natural-language assistance into the CAM environment. Programmers can ask questions, locate functions, and access guidance more easily inside the workflow, reducing the time spent searching menus or documentation in increasingly capable CAM systems.

Hexagon
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Enztec reduces CNC cycle time by 16 percent using Vericut Force optimisation

Enztec, a New Zealand manufacturer of high-precision orthopaedic surgical instruments, used Vericut Force optimisation to cut CNC cycle times by 16 percent, stabilise unattended machining and free more than 1,800 hours of annual machining capacity all without adding machines or labour.

The company designs and manufactures high-precision orthopaedic surgical instruments for many of the world's leading medical-device companies.

Based in New Zealand, it operates in a highly regulated environment, producing both reusable and single-use instruments. For Enztec, machining accuracy, surface finish and dimensional repeatability are not nice-to-haves, they directly influence product performance and patient safety.

To keep pace with growing global demand, the company has continued to invest in advanced CNC machining, automation and unattended machine operation. As these systems evolved, one thing became clear: raw productivity on its own was not enough. Greater predictability and confidence in how tools and machines behaved in real production conditions was needed. Enztec introduced Vericut Force into its programming and verification workflow.

Rather than relying purely on CAM assumptions, Vericut Force simulates the real physics of the cutting process. Using actual tool geometry, material properties and cutting conditions, it calculates cutting forces, engagement, heat generation and chip formation throughout each toolpath.

Instead of applying a single feed rate or defaulting to conservative safety margins, the software dynamically adjusts feed rates to maintain a consistent target cutting force and chip thickness.

Where engagement is light, feeds increase to make better use of machine capacity. Where engagement rises, feeds are reduced to avoid force spikes and excessive tool loading.

The result is machining programs that are not just faster, but far more stable and predictable.

For Enztec, one of the most important parts of implementing Vericut has been ensuring that machine models accurately represent real CNC machines. Force-based optimisation is now a core part of its approach to CNC programming and process development.

It has enabled a shift away from conservative assumptions and manual trial-and-error toward data-driven, predictable machining processes that support automation and long-term scalability.

As the use of unattended machining expands and production volumes increase, confidence in tool behaviour and process stability will remain just as important as improving cycle times.

Vericut Force has become a valuable tool in supporting this approach and provides a foundation for continued development as operations scale.

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From one laser to a £15m manufacturing powerhouse

How FC Laser evolved from a contract laser cutting specialist into a complete engineering solutions provider

In manufacturing, sustained growth is rarely achieved overnight. It is built through vision, investment, innovation and, above all, the dedication of people who share a common goal. FC Laser's journey over the last decade is a powerful example of what can be achieved when customer service, technical excellence and long-term commitment come together.

Founded by CEO Danny Fantom in 2012, FC Laser began life in a modest 8,000 sq. ft. unit in Stanton by Dale, Ilkeston. Equipped with a single laser cutting machine and a determination to do things differently, the business was established with a simple philosophy: put customers first.

Having worked within the manufacturing sector, Danny Fantom felt many suppliers had become increasingly transactional. Too often, service seemed secondary to profit. He believed there was an opportunity to build a business focused on responsiveness, reliability and genuine customer care.

Starting out on his own was a daunting prospect. Like many entrepreneurs, he faced the uncertainty of winning those first orders and building credibility in a competitive market. However, after securing one customer, then a second, momentum quickly began to build. Word spread and new opportunities followed as customers responded positively to FC Laser's approach.

The team in those early years was small but highly dedicated. Many of the original employees remain with the business today and continue to play an important role in its success. That loyalty and commitment have helped shape a culture that remains one of FC Laser's greatest strengths.

As demand increased, FC Laser relocated in 2015 to a larger 12,000 sq. ft. facility in Draycott. The move provided much needed capacity, but it also marked the beginning of a wider strategic shift. Customer expectations were changing. Increasingly, manufacturers wanted more than laser-cut components; they wanted complete engineering solutions.

Recognising this trend early, FC Laser began investing in complementary manufacturing processes. Rather than simply supplying cut parts, the company expanded into fabrication, bending, welding, finishing and assembly. The objective was straightforward: provide customers with a single trusted supplier capable of managing projects from concept to completion.

For customers, the benefits were clear. Working with a single supplier reduces procurement complexity, improves communication, shortens lead times and minimises quality risks. As confidence in FC Laser's capabilities grew, more customers began entrusting the company with larger and more complex projects.

The next major milestone came in 2018 when FC Laser returned to Stanton by Dale, moving into a 20,000 sq. ft. purpose built manufacturing facility. Continued investment in technology, facilities and people enabled further expansion, with the business doubling its footprint to 40,000 sq. ft. in 2024.

Today, FC Laser operates across three facilities totalling 60,000 sq. ft. The latest addition is a dedicated 20,000 sq. ft. site in Dunkirk, Nottingham, which houses the company's automated powder coating operation. Combined, these facilities provide the capacity and capability required to support a rapidly growing customer base.

The company is now on course to achieve turnover approaching £15 million in 2026 and employs more than 70 people across manufacturing, engineering, sales, logistics and support functions.

While laser cutting remains at the heart of the business, FC Laser has evolved into a complete engineering solutions provider. Customers across sectors including construction, renewables, medical equipment, material handling, switchgear, vehicle conversions, data centres and defence now rely on FC Laser for a comprehensive range of services delivered under one roof.

Quality has remained central to every stage of this growth journey. The company maintains ISO 9001 and BS EN 1090 accreditations, providing customers with confidence in its quality management systems, manufacturing processes and commitment to continuous improvement.

The latest chapter in FC Laser's evolution is being driven by a significant investment programme featuring three major additions to its manufacturing capability.

The first is the Salvagnini P2 automated panel bender, available for customer projects from

1st July. This advanced system represents one of the most sophisticated sheet metal bending technologies available today. Unlike traditional press brakes, the P2 uses universal tooling and adaptive bending technology to eliminate manual tool changes and significantly reduce setup times. Intelligent software continuously compensates for material variations, delivering exceptional repeatability, productivity and flexibility for customers requiring complex folded components and enclosure systems.

Following closely behind is the arrival of the TRUMPF TruPunch 3000, scheduled to be available from 1st August. The machine brings far more than punching capability alone. It enables forming, embossing, marking, countersinking and thread forming operations to be completed within a single process. By reducing secondary operations and improving manufacturing efficiency, the TruPunch 3000 will provide customers with faster lead times, improved design flexibility and highly repeatable quality.

Completing the investment programme is the TRUMPF TruBend 8400, due to become operational from 1st September. Designed for heavy-duty bending applications, the machine significantly enhances FC Laser's ability to process larger components, thicker materials and more demanding fabrication projects. Advanced angle measurement systems, CNC-controlled backgauges and Industry 4.0 connectivity ensure outstanding precision while increasing capacity for large-scale fabrication work.

Together, these investments strengthen FC Laser's position as a leading UK manufacturing partner and demonstrate a continued commitment to staying at the forefront of modern sheet metal fabrication.

However, the company's success cannot be measured solely by buildings and machinery. One of Danny Fantom's proudest achievements has been the growth and development of the FC Laser team. From a handful of employees in 2014, the business has grown into an organisation employing more than 70 people, with plans to recruit a further 20 team members as demand continues to increase.

The current recruitment drive includes opportunities for an operations manager, sales account managers, laser operators, press brake operators, punch operators and maintenance personnel. These roles reflect the scale of the company's ongoing expansion and its confidence in the future.

FC Laser actively recognises employee commitment through long-service awards, celebrating the dedication of individuals who have contributed to the company's success over many years. Equally important is the progression of employees who joined the business in junior roles and have developed into confident and capable departmental managers.

This focus on people remains a key part of the company's culture. Management believes that investing in employees is just as important as investing in machinery.

Alongside investment in manufacturing technology, FC Laser has embraced digital transformation. The company maintains regular communication with customers through project updates, newsletters and social media channels, ensuring clients remain informed and engaged throughout the manufacturing process.

Every customer is assigned a dedicated account manager, providing a single point of contact and helping to create a seamless customer experience. This approach reflects the service-focused philosophy that has been central to FC Laser since day one.

Looking ahead, the company is undertaking one of its most ambitious internal projects to date: the implementation of a completely redesigned Enterprise Resource Planning (ERP) system. The new platform will improve scheduling, production visibility, reporting and operational efficiency while creating the digital foundations required to support future growth.

Combined with continued investment in technology, facilities and people, the ERP project demonstrates FC Laser's determination to build a manufacturing business capable of meeting the evolving needs of customers for years to come.

Reflecting on the journey so far, Danny Fantom remains both proud of what has been achieved and excited about what lies ahead. He states: "It's been a fantastic journey and we still have lots to do."

Those few words perfectly capture the mindset that has driven FC Laser from the beginning. From a single laser cutting machine in an 8,000 sq. ft. unit to a £15 million engineering business operating across 60,000 sq. ft. of manufacturing space, the company's progress has been remarkable.

Yet if FC Laser's history tells us anything, it is that the business never stands still. With new technology arriving, new jobs being created and further investment already planned, the next chapter may prove to be its most exciting yet.

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AJ Manufacturing accelerates growth with laser-focused investment in Accurl machines

York-based fabrication specialist AJ Manufacturing has strengthened its production capabilities and sharpened its competitive edge following a strategic investment in advanced sheet metal processing technology supplied by Axe & Status. This progressive and ambitious company has installed an Accurl Smart Cube 3015 6 kW CNC fibre laser cutter and an Accurl 175-ton CNC press brake, a move that is already delivering significant gains in speed, accuracy and flexibility.

The investment marks an important milestone for AJ Manufacturing as it approaches its fifth anniversary. Founded by Adam Jennings and Jake Connell-Southcoat, the business has built a strong client list in sectors that include agriculture, construction, retail and food, to list but a few. Services span CNC fabrication, machining, welding, installation work and maintenance engineering, a comprehensive offer that has helped the company establish long-term relationships with customers seeking a full lifecycle approach.

For managing director Adam Jennings, the decision to invest in fibre laser cutting technology was driven by a clear ambition to enhance both efficiency and capability. He states: "We previously operated a plasma cutter and outsourced laser cutting to a local company. However, it meant longer lead times and additional cost. Bringing this capability in-house was the logical next step."

AJ Manufacturing's workload is highly varied, with the team producing everything from agricultural components to architectural steelwork and domestic projects such as staircases, gates and balustrades. Adam Jennings continues: "Most of our work is one-offs or small batches, so the machines we acquire have to be flexible and efficient." The search for the right laser cutter was extensive, with the company evaluating several machines before making its final choice.

"We looked at four or five different laser cutters," recalls Adam Jennings. "It was a big investment for a company of our size, so making the correct decision was imperative. Our thorough decision process took over a year from start to finish." AJ Manufacturing first saw Accurl machines at the MACH 2024 exhibition, on the stand of Axe & Status. After the show, the team conducted further research and visited existing Accurl users.

Several practical considerations further influenced the final choice. The fully retractable cutting table on the Accurl Smart Cube proved particularly advantageous when handling heavier plate materials, while the machine's compact footprint suited the company's available floor space.

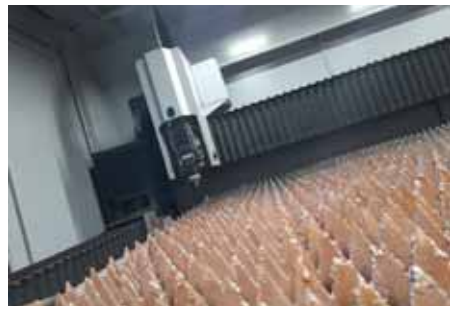
The Accurl Smart Cube 3015 6 kW fibre laser was installed towards the end of 2025, with installation and commissioning completed quickly.

The impact of the new laser cutter has been immediate, largely thanks to the outstanding dynamics of the Cube Compact series, which is designed with a low-set gantry, digital AC servomotors and precise planetary gearboxes. In addition, the Accurl Hypcut TwinCAT CNC provides unprecedented control of the cutting process.

"Investing in the Accurl laser was the best decision we ever made," Adam Jennings confirms. It's around 50 percent faster than the plasma cutter we were using previously and the quality of cut is far superior." Enhanced edge quality has removed a significant amount of secondary finishing work.

AJ Manufacturing currently uses its Accurl fibre laser cutter to process various grades of steel, including stainless, sometimes up to 25 mm thick. The company also cuts aluminium when demand dictates. One feature proving particularly useful is the laser's etching capability.

"We can write part numbers or identification marks directly on the sheet without changing the head or adjusting anything else on the machine," Adam Jennings explains. "It's a really handy feature that helps with traceability and organisation."



Alongside the laser cutter, AJ Manufacturing upgraded its forming capability with the acquisition of an Accurl 175-ton CNC press brake.

The combined investment in laser cutting and CNC bending technology has strengthened AJ Manufacturing's ability to compete for more contracts. Growth is firmly on the agenda and the company has recently secured planning approval for a workshop extension that will increase floor space by around a third.

With advanced manufacturing capability now at its disposal, AJ Manufacturing is well placed to build on early success and continue its growth trajectory.

Adam Jennings concludes: "Investing in Accurl machines has opened the door to new opportunities and we're excited about what comes next."

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40 years of excellence
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Steel & Glass Solutions chooses high-speed, high-power Nukon fibre laser for multi-million-pound HS2 station project

Needing a hugely powerful fibre laser metal cutting machine to fulfil a recently won, multi-million-pound project for the HS2 Old Oak Common Station in west London, Bedfordshire-based Steel & Glass Solutions (SGS) looked no further than Nukon Lasers UK.

The fibre laser machine chosen, a 20 kW model from Nukon's all-new Cross Series, was installed at the bespoke metalwork specialist's Dunstable manufacturing facility in late April. Previously displayed on the Unison Ltd and Nukon Lasers UK stand at MACH 2026, it will be used by SGS to precision-cut flat sheets of stainless steel for the production of polished steel posts, glazing tracks and skirting for the front-of-house glazed screens and architectural metalwork that will adorn the new HS2 station.

"Our new Nukon Cross 420 machine is in fact our second fibre laser," says SGS operations director, Warren Few. "Our first fibre laser machine, a Nukon Rex 6 kW 315 model, was bought from Nukon Lasers UK at MACH 2022 and has more than met our production needs. Thanks to its precise cut and unstinting reliability, it enabled us to stop outsourcing the laser-cutting of the high-end polished steel fabrications and cladding panels that are used in the majority of our designs.

"The exceptional reliability of the Nukon Rex, combined with the outstanding levels of service we always receive from Nukon Lasers UK, was more than enough to give us the confidence to buy another Nukon machine without considering other brands," he adds. "We were new to laser cutting when we bought the Rex and Nukon Lasers UK helped us every step of the way."

Nukon Cross: 10x faster cutting for high-speed rail station

Although more than happy with their Nukon Rex machine, the sheer volume of material that SGS will need to cut for the Old Oak Common project, around 400 tonnes of stainless steel sheet, in thicknesses ranging from 5 mm to 25 mm, convinced the company that it would make good sense to upgrade to a more powerful model.

"The majority of the stainless steel that we will cut for Old Oak Common will be around 15 mm thick, which is approaching the top end of the 6 kW Rex machine's capabilities," explains Warren Few. "Additionally, we recognised that investing in a more powerful laser would not only accelerate the cutting process but also, by cutting more quickly, deliver significant savings in the volume of nitrogen gas used."

A conversation with Steve Haddrell, sales director of Nukon Lasers UK, followed and resulted in SGS part exchanging their Nukon Rex fibre laser for the new Nukon Cross 420 machine; a model capable of cutting stainless steel of up to

40 mm in thickness. Thanks to its powerful 20 kW cutting system, the Cross 420 will cut 15 mm thick stainless steel at more than 10x the speed of SGS's Rex machine, meaning greater productivity and that all-important reduction in nitrogen gas usage. Equipped with a 4 m x 2 m cutting table, it will also enable the company to utilise larger sheets of stainless steel, further improving yield and reducing wastage.

Exceptional reliability, uncompromising service

"We genuinely didn't feel the need to look beyond the Nukon brand when choosing our new fibre laser machine," says Warren Few. "The reliability and performance of our existing machine has been exemplary, as has the support provided by Steve Haddrell and the team at Nukon Lasers UK.

Steve is passionate about Nukon machines and his technical expertise is second-to-none. We're looking forward to experiencing the full potential of our new Nukon Cross fibre laser machine over the coming weeks, as we commence production and benefit from the time and energy savings it will bring. The machine's speed and capacity will also prove invaluable for an equally exciting HS2 project we have also secured. This involves cutting weathering steel from 15 mm thick, 3.4-metre-long sheets for the construction of two innovative viewing platforms for the Maple Cross tunnels in the Chilterns."

"We are delighted to once again support SGS in choosing the fibre laser metal cutting machine that is best suited to their needs," comments Nukon Lasers UK sales director, Steve Haddrell. "It is an absolute honour to work with the SGS team and to assist them on their fibre laser cutting journey. What better testimony could there be to the quality of Nukon machines and the level of service provided, than a repeat order from such a valued customer?"

Designed with productivity in mind

Designed with a strong focus on productivity, Nukon Cross machines offer powerful 2D flat sheet metal cutting capability and can be specified with bed sizes of 3 m x 1.5 m, 4 m x 2 m, 6 m x 2 m, or 8 m x 2m with power options ranging from as little as 2 kW, right up to 30 kW for the most challenging of laser-cutting applications.

To enable Cross Series customers to tailor their new fibre laser machine to their specific needs, Nukon also offers a number of impressive optional features. Depending on model, buyers can choose from state-of-the-art IPG fibre lasers, or from the Raycus range of extremely robust high-performance fibre lasers. In fact, thanks to Nukon's use of Raycus power sources, prospective buyers will find that the cost of reliable, high-performance laser cutting of mild and stainless steel has fallen considerably.

Advanced Lantek Expert CADCAM nesting software can also be specified. Additionally, Nukon's innovative Plus Cut technology is offered on machines with resonators above 12 kW. Developed for the precise cutting of thicker materials, Plus Cut delivers fast, stable clean cuts on mild steel of 20 mm thickness and above. Other options include bevel cutting at up to 52 degrees, mixed gas cutting, cut detection, piercing sensing and automatic nozzle changing. All of these technologies help ensure businesses are competitive in today's commercial environment. Cross Series machines have also been designed to integrate with the full range of Nukon automation systems, for huge productivity benefits with minimal manning levels.

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Excellence in sheet metal cutting

AMADA laser technologies embody the top of the sheet metal processing industry. Featuring fully developed and produced in-house generators, these systems offer unparalleled added value. The different available functions, customisable according to the models and specific needs of customers, allow for optimising performance, productivity and the competitiveness of companies.

Groundbreaking LBC technology for laser processing with lower power

The VENTIS-AJe is the biggest innovation in sheet metal cutting and introduces the next generation of fibre laser processing machines, utilising AMADA's original Locus Beam Control (LBC) Technology. With the ability to manipulate the laser beam pattern whilst processing, LBC Technology creates possibilities never before accomplished with solid state laser cutting machines.

Dross free capabilities, cutting speeds equivalent to much higher power machines and cut width (kerf) control are all achievable. Combined with AMADA's new, in-house developed high power single diode module fibre laser engines, and available in 4, 6 and 9 kW powers, the VENTIS-AJe has a very high-quality laser beam which is perfectly suited to LBC Technology applications.

Variable Beam Control technology

The distinctive feature of this AMADA technology lies in its ability to modulate the shape of the laser beam according to the materials and thicknesses being processed. Implemented on the complete REGIUS-AJe series (6-26 kW), this technology is able to automatically adapt and select the optimal laser mode.

Intelligent features to maximise uptime

The REGIUS-AJe series fibre laser cutting machines utilise AMADA's in-house designed fibre laser engine and incorporate several new technologies aimed at more autonomous processing. These are combined with high speed, 3-axis linear drives and intelligent head control, providing a fusion of technologies which results in ultra high-speed, high accuracy processing capabilities in an ever more demanding market. Utilising AMADA's Laser Integration System (LIS), the REGIUS-AJe series includes automatic nozzle centring, automatic nozzle checking, automatic focus position checking, automatic protection glass monitoring, automatic head collision recovery and an advanced process monitoring system. The new Fibre Silky Cut function which can provide CO_2 laser type stainless steel cutting quality is also standard on the 9-15 kW variants.

Optimising production

The REGIUS-AJe series stands out for its remarkable innovation thanks to the use of linear motors. This feature makes it particularly suitable for working on thin thicknesses or in contexts where frequent axis movements are required. Linear motors allow optimal use of production time, ensuring significant time savings.

Productivity, not power

With a diverse range of sizes and powers, AMADA machines emerge as the preeminent solution for a variety of laser machining requirements. In an industrial landscape that continues to require increasingly powerful systems, AMADA lasers stand out for their effective productivity optimisation. Contrary to the prevailing trend towards high-power machinery, AMADA technologies can give substantial value in terms of operational efficiency. AMADA laser systems, in addition to allowing energy savings, if equipped with the correct automation, are significantly more productive than high-power machines served by pallet change of the competitors. The production capacity does not derive only from the power, but from the correct management of the process.

Automate Everything

With the ability to provide everything from single sheet loaders to fully automated storage systems, AMADA's mantra of 'Automate Everything' can be realised across the whole laser range, significantly improving productivity and reducing cost-per-part. Part picking systems further enhance the offering, reducing the operator burden and preparing parts for the next phase of the manufacturing process. Automation can also be retrofitted to existing systems in many cases, meaning a stand alone laser can be utilized to a higher extent.

Raising the standard with the ORSUS-3015AJe

The ORSUS-3015AJe is AMADA's solution for companies looking to create a solid foundation

for their first step into the world of high speed, precision laser cutting. It creates a perfect starting point for any manufacturer, with available power levels from 3 to 8 kW and a whole range of advanced technology and features, allowing it to fit into many production environments. The ORSUS-3015AJe comes fully equipped with a large number of features designed to improve cutting quality, reliability and ease-of-use.

Affordable innovation

The ORSUS-3015AJe fibre laser has many value adding features for improving cut quality, reliability and ease-of-use, allowing any company to take their first steps into laser processing. Compatible with AMADA's automation systems and equipped with AMADA beam shape control technology it can assist your growth and success.

Increased uptime: Utilising a single lens for all materials reduces downtime and operator intervention.

Beam control: AMADA's automatic Mode Converter laser beam shape control increases processing range capabilities.

Less intervention: The 8-station automatic nozzle changer on the 6 and 8 kW variants also cleans the nozzles and calibrates the cutting head.

Production planning and proactive service

With the brand-new software solution LIVLOTS (LIve Variable LOT production System), AMADA demonstrates how digital transformation can make production processes more efficient and reliable. Particularly noteworthy is the deep integration into innovative machine technologies, such as the VPSS 4ie CADCAM software solution for virtual prototype manufacturing, which is complemented by predictive support from technical services, which reduces downtime and increases machine availability.

AMADA's industry leading IoT service support provides significant improvement as the number of service issues solve remotely has gone from 44 percent to almost 70 percent since its introduction, benefitting the customer by returning machines to production much more quickly than in the past.

About Amada UK

Established over 50 years ago, one of the fundamental principles of AMADA UK is to grow together with its customers. This allows the company to continually assess and improve the levels of service offered.

The AMADA UK Technical Centre, based in the Midlands, is specifically designed for machine demonstrations and verification of the latest technology in lasers, punches, press brakes, tooling, automation and software.

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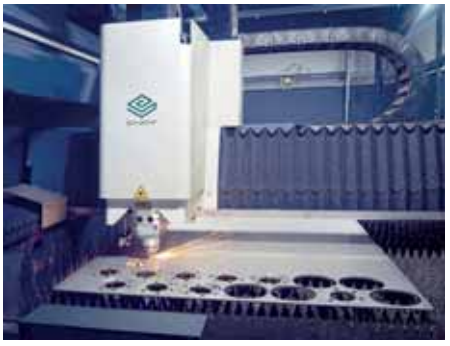
Fabricator transitions from CO_2 to fibre laser cutting

Helping to position Bell Steel Fabrications, Cricklade, for its next phase of growth is an 8 kW fibre laser profiling centre, supplied by BLM Group UK to replace a flat-bed, CO_2 laser cutting machine of another make installed a decade ago. The fabricator manufactures an impressive variety of products for customers at home and abroad, while a distinctive aspect of the business is the production of bespoke stainless-steel silencer and exhaust systems for classic cars, which accounts for 40 percent of turnover.



Established in 1977 as Bell Silencer Services, the company was founded as an exhaust centre in Swindon Old Town by former RAF airframe fitter and Concorde engineer Ron Bell. The operation relocated to Chelworth Industrial Estate in Cricklade in 1999, where two units now provide a total of 2,675 m^2 of factory and office space.

The current managing director, second-generation Matthew Bell, first came across BLM on the company's stand at the MACH 2010 machine tool exhibition in Birmingham. He and his father became interested in an ELECT 80 electric tube bender and after visiting an existing user in the north of England, they decided to place an order.

Matthew Bell states: "After researching the market, it was clear the machine was the most versatile tube bender available. Ron and I confirmed our opinion during a trip to the Italian factory and BLM Group UK installed the machine shortly afterwards, in September 2010.

"We have had excellent service and support from the UK subsidiary over the years and were inclined to return to them when the time came to replace our flat-bed laser profiler.

"We looked at three potential machine suppliers, but felt the BLM offered the best price and quality. So, we opted for one of their LS7 3015 models, which was installed in March 2026."

Fibre lasers have largely taken over from CO_2 for cutting sheet metal, as they are less costly to run and maintain. They are also more compact, with fewer moving parts and no mirrors requiring regular alignment. They waste far less energy during beam delivery and convert more of their output into usable laser power. Moreover, gas usage is less with a fibre laser, as it needs only an assist gas, either nitrogen or oxygen, whereas a CO_2 model also uses lasing and purge gasses. Matthew Bell estimates that his company will save £20,000 a year in electricity and gas costs.

A vast range of components is produced in the machine from mild steel, stainless steel or aluminium, a large proportion of which also visit a CNC press brake. They range from brackets, flanges and silencer baffles for classic car exhausts, to other vintage vehicle fittings like fuel tank, radiator, clutch, gearbox and chassis parts, to structural steelwork, architectural metalwork, mounting platforms for industrial machinery, bicycle racks, truck ladders and even fabrications that form part of draught beer dispensing units. Coded welders among the company's 21 employees provide TIG, MIG, MMA and fusion welding services across the full range of materials processed.

Bell Steel Fabrications prides itself on being a solutions provider and partner, not just a subcontractor. While its products cannot be described as cheap, its management has always regarded value for money for its customers as a core principle. It therefore looks to suggest design changes where appropriate to lower production costs and once a project is agreed, to program jobs to be completed as cost effectively as possible.

In the latter respect, Matthew Bell points to a key feature of the BLM LS7 that allows very rapid and economical laser cutting of multiple repetitive features, like dense grids of holes. Called Fly Cut, it avoids the traditional stop-start laser cutting of each individual shape before moving on to the next. In the case of a square or rectangular hole, a conventional production route involves acceleration of the head to cut one side and then three further direction changes to produce each individual hole.

In contrast, Fly Cut synchronises the movement of the cutting head with rapid switching of the laser beam. The control identifies all horizontal lines in a grid of holes and cuts them in a single, continuous sweep across the sheet. The head moves at a high and constant speed while the laser beam pulses on and off

where the holes need to be. After completing the horizontal passes, the machine repeats the process for the three other orthogonal directions. In this way, a time saving of up to 70 percent can be achieved for this part of the cycle.

Another aspect of the LS7 that impresses Matthew Bell is its adaptability. If in the future he chooses to use compressed air as the assist gas on some jobs to save on nitrogen or oxygen costs,

a third line is available and a dedicated turnkey air centre is offered. It includes a high-pressure compressor, filter banks to remove any oil and water from the air and a reservoir to ensure constant air flow during cutting.

A further advanced feature of the machine that maintains high productivity is Active Piercing, which monitors when the piercing process is complete so that the subsequent axis movements to execute the programmed cut can start automatically.

Production at Bell Steel Fabrications is characterised by small batch sizes and one-off prototypes, with large runs being relatively uncommon. For this reason, Matthew Bell chose not to automate material transfer to the BLM LS7 at this stage. However, if a future need arises, tower storage and handling systems are available from BLM to work in conjunction with the standard, dual-table shuttle system of the fibre laser machine. Notably, it is one of the fastest on the market, material changeover taking only nine seconds.

Investment in BLM Group's LS7 fibre laser profiling machine marks a significant step forward for Bell Steel Fabrications, delivering measurable cost savings, increased productivity and enhanced process flexibility. By combining advanced laser technology with a commitment

to engineering excellence and customer value, the company is well positioned to expand its capabilities and remain competitive in a demanding subcontract manufacturing environment. The transition not only modernises the company's production infrastructure but also reinforces its reputation as a forward-thinking fabrication partner.

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KASTOsort Tower enables sawing, sorting and storage of cut pieces to be carried out unattended in a small footprint.

Robotic sorting and storage of sawn material in a compact space

A new system has been developed by German storage equipment and sawing machine manufacturer KASTO that uses both of its product lines to enable stockholders of steel, aluminium or other materials to saw, sort and store cut lengths of bar, tube or profile automatically, even when floor space is limited.

The solution is called KASTOsort Tower and it is available in the UK and Ireland through the group's subsidiary near Leicester, which commented that the adaptable arrangement is equally well suited to use in a factory environment.

For several years, KASTO has offered KASTOsort for computer-controlled robotic handling of billet and other cut pieces. However, output from a saw is typically placed into boxes or carousels at floor level, which consumes a considerable amount of space. The novelty of the latest system is that the sawn lengths of material are placed by the robot directly into pallet boxes housed in the lowest level of a compact tower store, which is also an existing KASTO product. Each box may be removed by fork lift truck or automated guided vehicle from the rear of the store to fulfil an order immediately, or else raised automatically to a free level internally for buffer storage and subsequent retrieval.

The effect of KASTOsort Tower is to allow maximum utilisation of sawing machine time, as stock cutting sequences can be optimised while customer order workflows can be executed more flexibly. Similarly, production lines may be fed more efficiently. Moreover, if such a system is left to run unattended for extended periods, personnel may be deployed onto other added-value tasks, raising profitability.

Production orders comprising cut lengths, quantities and material types are sent to the control systems of the KASTOsort Tower and the saw, eliminating manual data entry errors and ensuring the highest-priority jobs are always being implemented. Seamless integration with existing systems in a customer's operation is achieved by communication via KASTOlink to a warehouse management layer, such as KASTOlogic, and to higher-level MRP or ERP platforms. Real-time data on order status, blade life, scrap count and more is fed back to give the plant manager live visibility into production, empowering staff to make data-driven decisions on the fly.

The robotic handling solution was developed to solve a problem of one of KASTO's customers in Germany, Weser Stahl in Stuhr-Brinkum, part of the Westfälische Stahlgesellschaft group. The operation already had a KASTOcenter high-bay warehouse with 1,398 storage spaces for raw bar stock, integrated with a KASTOvariospeed C18 circular saw equipped with a KASTOsort robot, as well as a KASTOtec bandsaw. In spring 2025, KASTO installed a tower store to work alongside the robot, in effect creating a KASTOsort Tower.

André Barsuhn, director of Saw Planning at the site notes: "Previously we were limited to three storage locations for cut pieces, but with the KASTOsort Tower, there is much more capacity for storage. The solution is particularly suitable for handling our frequently needed billets sizes of 160 to 170 mm diameter by 20 to 35 mm long. Even unattended shifts over the weekend are now possible without any issues."

The pilot system proved so successful that the group decided to similarly upgrade its Westfälische Stahlgesellschaft site in Löhne, East Westphalia, which was completed at the beginning of 2026.

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Prosaw records another top performing year at MACH

Prosaw has confirmed that MACH 2026 ranks as a top performing year for the company, proving to be a successful show with several machine orders secured during the week, alongside strong interest in the new cutting technology on display. It has proudly exhibited at MACH for over three decades, maintaining a long standing commitment to supporting manufacturers with advanced cutting solutions at the UK's longest established manufacturing exhibition, which has a history spanning more than a century.

A key focus of Prosaw's presence was the debut of three headline machines, showcasing the latest in efficient, high performance cutting technology:

- **Gentiger GT A4H:** High performance bandsaw
- **Mega CS 80X:** The latest in carbide circular saw technology
- **Karmetal Cyclone 100:** Also carbide circular saw technology

These new additions were complemented by a wide portfolio of established and trusted brands, including Bomar, Hydmech, Waytrain, MEP, JHL, İleri Teknik, Yılmaz and iVision, enabling Prosaw to offer tailored solutions across a broad range of industrial applications.

Prosaw is appreciative of the MACH organisers and the MTA for delivering another successful exhibition, acknowledge the Prosaw team for their professionalism throughout the event and thanks customers, prospects, suppliers, associates and partners for their time, interest and engagement at the stand.

For manufacturers looking to invest in efficient, reliable industrial cutting solutions, Prosaw remains: "the people to see for saws."

To discuss the right machinery for your application or to learn more about Prosaw's range of world leading cutting technologies, get in touch.

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Manual MIG/MAG welding with Fortis and TPS/i from Fronius

While automation continues to grow, manual MIG/MAG welding still plays a critical role across a wide range of manufacturing and production environments. When the highest standards of quality, welding power and flexibility are required across a variety of applications and component geometries, Fronius high-end welding systems and skilled craftsmanship deliver consistently precise results.

Engineered to meet a wide range of requirements, the Fortis and TPS/i stand out for their intuitive operation, extensive variant range and consistently stable arc.

MIG/MAG welding is one of the most widely used processes in industrial metalworking. When high welding speeds, productivity and versatility are required, the arc welding process impresses as it can be used for a wide range of applications. Easy handling combined with high deposition rates makes manual MIG/MAG welding the preferred process for steel, aluminum and CrNi applications. As production processes, maintenance, assembly and repairs grow ever more complex and as welders are called upon to adapt with greater flexibility, manual welding is experiencing a significant resurgence in relevance. “During operation, every welding task is different. Materials, components and requirements are constantly changing. That’s why we have developed solutions that can be flexibly adapted and deliver reliable results,” emphasises Philipp Schlor, product manager at Fronius International. Two of these welding machines are the Fortis and the TPS/i, which impress with their modern process control, intuitive operation and maximum arc stability.

The Fortis and TPS/i welding systems designed for use in production deliberately address different requirements but are characterised by high-quality Fronius technology. A stable arc and durable quality are standard features. Choosing the right device depends entirely on the individual welding requirements.

Welding tasks are often a challenge, especially for small and medium-sized companies. These tasks and the required welding processes sometimes change on a daily basis. Fortis, which adapts flexibly to changing applications and provides users with optimal support, is ideal for this purpose. With an output of up to 500 amperes, standard and pulse welding processes, a duo version, multiprocess capability and full connectivity, the Fronius Fortis is engineered to meet the demands of everyday welding operations.

The Fortis handles all standard tasks with ease, but for more complex requirements, the TPS/i is the recommended tool of choice. The available special processes Cold Metal Transfer (CMT), Low Spatter Control (LSC), or Pulse Multi Control (PMC) not only ensure a stable arc and minimal spattering thanks to their assistance systems and special characteristics, but also enable welding light gage sheets or heat-sensitive joints. With an output of up to 600 amperes, PushPull capability, and a FlexDrive for long distances, the TPS/i is a true all-in-one solution for tackling complex manual welding tasks and achieving high-quality weld seams.

Thanks to its compatibility with the new Fronius Velocity Assistant, Velo for short, the TPS/i is also the ideal choice for applications with long weld seams. Velo supports welders in many ways, but especially with weld seams of this type, as the assistant specifies and maintains the welding speed and welding torch distance. This enables higher welding speeds with consistent quality. Velo therefore increases process reliability and significantly reduces the workload for users, particularly in an industrial environment.

TPS/i is fully equipped and prepared to meet the evolving demands of welding. Intelligent equipment, modular design, and extensive expansion options, including automation, combine to deliver unmatched flexibility and efficiency.

Fronius not only impresses with its innovative technology, but also with its service and support. With more than 60 welding torch variants in different configurations, alongside protective equipment and extraction systems, the comfort and safety of welders is never compromised.

Thanks to their integrated connectivity, both the Fortis and the TPS/i work seamlessly with WeldCube, the data management software solution from Fronius. This enables transparent, fully documented welding processes, reduces sources of error and increases efficiency in day-to-day work. The WeldCube Navigator provides step-by-step guidance for workflows, while WeldCube Air and WeldCube Premium provide comprehensive analyses for quality assessment, traceability and process optimisation. In addition, access to the welding machines is clearly regulated via the central user management.

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Future-proof welding production

Industrial manufacturing has been undergoing fundamental change for several years, characterised by globalisation, a shortage of skilled workers, increasing quality requirements and shorter delivery times. Hardly any other sector is feeling these changes as intensely as welding technology, where manual production has been the norm for decades. Today, companies are increasingly faced with the challenge of making their welding processes more efficient, reproducible and economical without losing the necessary flexibility in production.

Small and medium-sized enterprises in particular find themselves caught between traditional skilled labour expertise and the pressure to develop technologically. At the same time, customer expectations regarding documented quality, process reliability and series production capability are rising. In this environment, entry-level automation solutions are becoming increasingly important. They offer a feasible way for companies to enter robot-assisted manufacturing without having to invest in complex large-scale systems right away. With the QIROX WeldExperT Compact Cells, CLOOS presents a system that is precisely tailored to this need: compact, user-friendly, powerful and particularly suitable for companies venturing into welding automation for the first time.

For a long time, traditional manual welding technology was the dominant form of manufacturing metal assemblies. It still plays an important role today, especially for one-off pieces, special components or repairs. However, the general conditions have changed significantly. The shortage of skilled workers is one of the most serious problems. Companies are increasingly reporting vacancies that cannot be filled for months on end and a significantly smaller number of young people entering the profession than in previous decades. Welding technology requires qualified training and a great deal of experience, but fewer young people are choosing this profession. As a result, companies are under pressure to relieve the burden on their existing welders while at the same time securing or expanding production capacities.

Another challenge lies in the increasing complexity of components and the diversity of materials. Modern materials such as high-strength steels, thin-walled constructions and aluminium place high demands on process stability. At the same time, companies are increasingly required to produce different variants and batch sizes, which require flexible yet reproducible manufacturing processes. Economic factors are also driving this development. Companies need to reduce their unit costs, avoid waste and increase productivity. In many cases, optimisations in manual production are no longer sufficient to achieve the desired economic efficiency. Finally, digitalisation also plays an important role. Customers increasingly expect documented and traceable welding processes. Inspection and traceability systems are becoming the norm, requirements that can only be met manually with great effort.

Automation offers the opportunity to improve quality, repeatability, cost-effectiveness and documentation in equal measures. However, a comprehensive automation step often means large investments, long integration efforts and a high degree of technical complexity.

This is exactly where QIROX WeldExperT Compact Cells come in: solutions that are compact, manageable, quick to implement and intuitive to use form the decisive first step.

Entry-level solutions for automatic welding must meet a variety of requirements in order to be successfully implemented in small and medium-sized companies. They must be economically attractive, as the investment decision often depends on a clear and, if possible, short-term return on investment. At the same time, they must not be technically overwhelming: operators should be able to create programs, set up components and achieve reproducible results without extensive robotics knowledge. A high degree of flexibility is equally important.

Many companies do not just produce one component in large series, but a variety of different components in small to medium quantities. Automation must therefore not be rigid, but adaptable. The solutions must also be reliable and durable to ensure operation without unplanned downtime. Finally, process expertise is of central importance. Welding is a highly complex thermal process and high-quality weld seams can only be achieved with a powerful welding power source, sophisticated process control and appropriate additional functions.

In recent years, robotic welding cells have

become one of the most popular forms of automation in small and medium-sized enterprises. Unlike customised special-purpose systems, they are manufactured in a standardised manner, which reduces costs, complexity and delivery times. They feature a compact design and can be quickly integrated into existing production environments. The welding cells combine the advantages of robot-assisted processes, such as speed, precision and reproducibility, with the flexibility required for small to medium batch sizes. Ease of use is a key factor here: modern systems enable even less experienced users to set up welding programs and clamp components.

Standardised components such as rotary tables, positioners and changeover stations facilitate handling, minimise setup times and enable a continuous production flow. It is precisely this combination that makes compact welding cells particularly attractive for companies looking to automate for the first time.

WeldExperT Compact Cells have been specially designed for those new to automation. Their design follows a clear principle: a compact, fully preconfigured welding cell that contains all the components necessary for immediate production start-up. At the heart of the system is a QIROX robot, which has different ranges, load capacities and axis configurations depending on the variant.

The economic advantages of robotic welding are evident in several areas. One key argument is the increase in productivity. Robots weld at a constant speed, without fatigue and at significantly higher speeds than manual welders. This significantly reduces the welding time per component. At the same time, scrap and rework are reduced because the weld seams are reproducible and of consistent quality. Energy efficiency is also improved.

For many companies, getting started with robot welding technology seems complex at first. CLOOS has therefore deliberately designed the implementation process to be user-friendly. The first step is to analyse the components and requirements in order to select the appropriate cell configuration. The cell is then preconfigured, tested and delivered ready for use. Commissioning takes place within a short time, as all central components are pre-installed.

The first components are set up together with CLOOS application engineers to ensure a safe start to production. Practical reports show that employees quickly master the operation of the cells.

Automation in welding is no longer reserved exclusively for large, highly automated production lines. With compact, intuitive and economically attractive entry-level solutions such as the WeldExperT Compact Cells, CLOOS offers companies the opportunity to develop their production in a future-oriented manner without having to make large investments or implement complex integration projects.

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FANUC launches 'lightest' collaborative welding robot

FANUC has announced the European launch of its CRX-3iA collaborative robot, the lightest and smallest model in the CRX portfolio to date. With a total weight of just 11 kg, FANUC's latest offering is compact, portable, intuitive and precise, making it ideal for welding applications. Addressing growing demand in sectors such as shipbuilding and steel construction, it can be carried easily with just one hand, allowing a single person to supervise multiple welding locations and mitigating the Europe-wide shortage of skilled welders.

Boasting a 3 kg payload, the CRX-3iA can manipulate a welding torch and a seam-tracking sensor simultaneously, while its ±0.02 mm repeatability delivers the precision necessary for critical welding tasks. It automatically detects its installation angle after relocation and identifies weld seam locations and calculates paths accordingly, thanks to a third-party laser scanner or touch sensor. Meanwhile, an optional magnetic base enables it to be secured directly to large steel structures. This reduces system complexity compared with traditional robot installations, which typically need heavier equipment and additional safeguarding measures.

As part of the wider CRX series, which extends to 30 kg payload and 1,756 mm reach, the CRX-3iA integrates fully with FANUC's established control and software ecosystem. It also incorporates FANUC's wrist button technology, which allows operators to guide and teach positions directly from the robot arm, streamlining programming and shortening changeover times.

Beyond welding, the CRX-3iA is ideally suited to applications such as intralogistics and mobile automation. Its compact footprint and low mass also make it ideal for mounting on an Automated Guided Vehicle (AGV), where it can support picking, placing and line supply tasks. In addition, it lends itself well to education and training environments, where space constraints often render the use of traditional industrial robots impractical.

"Manufacturers need automation that adapts to their environment, not the other way around," says Paul Ribus, FANUC's head of sales coordination Europe. "With the CRX-3iA, we focused on portability, fast deployment and high repeatability. It allows customers to take advantage of collaborative welding and handling wherever the work is, without complex installation."

Visitors to FANUC's Open House will be able to see the new CRX-3iA collaborative robot first hand when it makes its debut appearance in the UK on 3rd/4th November.

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ESAB launches ROBBI 360

Plug and play enclosed cobot cell to simplify and accelerate robotic welding deployment

THE ESAB ROBBI 360 enclosed cobot welding cell offers a plug-and-play solutions, enabling users to quickly enjoy the benefits of automated welding with a turntable, which include a 4X to 8X productivity increase compared to manual welding.

ESAB has introduced the ROBBI™ 360, an enclosed cobot welding cell with a manual turntable that is designed to increase productivity, improve weld quality and enhance operator safety in robotic MIG/MAG welding. Engineered for manufacturers seeking to quickly deploy an automated solution for medium- and high-volume applications, the ROBBI 360 cobot provides flexibility and user-friendly programming for quick setup and easy adjustments.

The ROBBI 360 manual load/unload turntable features a maximum payload of 150 kg per side enabling users to boost productivity by up to 60 percent compared to cobots with a single loading station. A cobot with a turntable can easily enable an arc-on of 50 to 80 percent, or a 4X to 8X improvement compared to manual welding.

ROBBI 360 is delivered as a complete "plug and play" package that has been weld-tested before shipping. With the addition of power, shop air, filler metal and shielding gas, it is ready to weld. ROBBI 360 includes a Universal Robots' UR10e cobot, a 3,469 x 2,228 x 2,628 mm cell enclosure for protection, turntable with a 1,200 x 800 mm work envelope, an ESAB Aristo 500ix or Aristo Edge 500R power source and matching feeder, an integrated fume extraction hood and all electrical and gas connections. The entire assembly is mounted on a skid with fork truck pockets for easy positioning and redeployment. The fully-enclosed workstation has rigid aluminium cell walls and a rugged steel base that ensures no vibration and a stable Tool Centre Point (TCP) that prevents having to make adjustments after moving.

"With its simplicity of ordering, deployment and operation plus our safety and health features, ROBBI 360 overcomes traditional barriers to welding automation," says Tom van Dooren, global product manager for integrated robotic systems and mechanised solutions, ESAB.

"The ESAB Teach Tool uses a 'no code' or plain language program so users can effortlessly incorporate a multitude of functions that enhance performance and productivity. There is no need for a robot programmer on staff, which is often the case with small- to medium-sized operations. I like to say, 'If you can count to three, you can program me.' Users can easily program each side of the turntable to weld different parts!"

Safe & sturdy

ROBBI 360 provides a controlled welding environment with UV and infrared protection, integrated fume extraction hoods, noise reduction and dust and debris trays. Walls contain dark green inactinic polycarbonate DIN 5 see-through glass to protect against light from the welding arc. Pressure sensors are located throughout the Cobot arm for crash protection. Safety interlocks ensure the Cobot will not operate if the table is not correctly locked or if the doors are open. As an option, users can add ESAB's WeldQAS automatic weld monitoring system.

Power source options

The Aristo Edge 500R power source and RoboFeed Edge robotic wire feeder offer next-generation process control and wire feeding capabilities. Aristo Edge 500R ensures precise arc starts and enhanced stability across four advanced WeldModes: THIN, ROOT, ROOT Pipe and SPEED as well as an Advanced Pulse WeldMode. All WeldModes enhance arc stability, offer more control at faster travel speeds and reduce spatter for less post-weld clean-up. The Aristo Edge platform also empowers independent development of synergic lines and process updates.

The Aristo 500ix, paired with the RobustFeed wire feeder, delivers proven reliability in the toughest industrial conditions and features pre-programmed synergic lines for MIG and pulsed MIG applications using most welding alloys.

Contact your ESAB representative or visit ESAB's website to learn more about ESAB's full portfolio of automated and mechanised solutions, including the new Tracfinder Wheel and Tracfinder Rail welding tractors.

About ESAB

For more than 120 years, ESAB has been a leader in fabrication technology. Its distinctive portfolio of fabrication solutions encompasses more than 40 of the world's most trusted brands for welding and cutting equipment, automation, robotics, fabrication software, filler metals, gas flow control and PPE.

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