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- SUB SPINDLE: 5000 RPM
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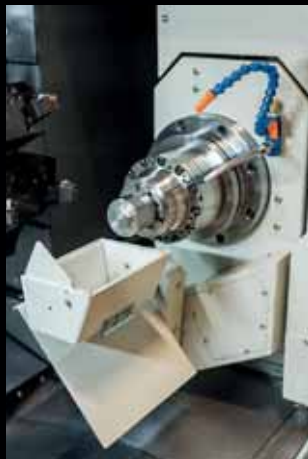


More Productivity. Greater Efficiency. Unmanned Running.

The XYZ 65 LTY-S is built to solve the challenges of modern workshops.

Introducing the **XYZ 65 LTY-S**, our latest innovation in turning centres designed to meet the demands of modern workshops. With a large machining envelope, twin spindles, and advanced Siemens control, this machine is engineered to enhance productivity, enable unmanned running, and streamline complex operations.

Don't just keep up with the competition - lead it. Upgrade to the **XYZ 65 LTY-S** today and transform your workshop. Scan the QR code below to watch our video and discover why this machine can increase your profitability.



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- Measurement & Inspection
- Automation Report
- Metal Marking
- 5-Axis Machining
- Waterjet Machining
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- Sawing & Cutting Off

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Publisher/Editor:

John Barber
Email: john@rbpublishing.co.uk

Accounts:

Jackie Barber
Tel: 01403 563791

Production manager:

Anna Rodrigues - 01472 210712
Email: studio@rbpublishing.co.uk

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Maximise efficiency and productivity with the XYZ 65 LTY-S turning centre

According to feedback from customers of XYZ Machine Tools, greater efficiency, higher productivity and the opportunity to run unmanned are three principal requirements of modern workshops. This trio of ambitions thus formed the basis of development activities for the new XYZ 65 LTY-S CNC turning centre with sub-spindle, Y and C axes, driven tooling, parts catcher and swarf conveyor as standard. Investing in the XYZ 65 LTY-S therefore offers a cost-effective and easy way to achieve automated one-hit, turning and milling in a single setup. The result for machine shops? Significant savings that shorten ROI (Return-On-Investment) and elevate bottom-line profitability.

The 66 mm bar capacity XYZ 65 LTY-S is an impressive machine with a cast bed and hardened box slideways that provides workshops with the opportunity to boost output and streamline complex operations. The 4,000 rpm main spindle features a 22 kW motor and 200 mm diameter hydraulic 3-jaw chuck as standard. A 150 mm diameter chuck adorns the 5,000 rpm/15 kW sub-spindle, which can pick-up from the main spindle. An optional collet chuck is available for machine shops where bar work is more prevalent.



Another great option is the bar-eject system, allowing the machine to feed completed workpieces into the parts catcher ready for extraction from the working area in support of higher efficiency and potential unmanned running. For even longer operations without intervention, the XYZ 65 LTY-S offers straightforward connection to a bar-feeder.

The machine comes with a German-designed Sauter BMT 65 turret. Every turret station has the capability to use driven tools up to 5,000 rpm.

Among many notable design features is the configuration of the main/sub-spindle, which means users can perform machining operations on both ends of a workpiece. The motorised spindles offer exceptional power without generating the heat that accumulates in the headstock of machines featuring a traditional belt-driven system.

Advantage comes from the Y and C axes and live tooling, allowing workshops to undertake complex, off-centre and multi-tool machining in a single setup. The machining envelope can accommodate large workpieces with a maximum turning diameter of 380 mm and a maximum turning length of 520 mm.

The advanced Siemens 828D touchscreen control with user-friendly ShopTurn conversational programming software makes for quick setups and seamless operations, even for operators with little experience.

XYZ Machine Tools Tel: 01823 674200

Email: sales@xyzmachinetools.com www.xyzmachinetools.com

Star Micronics GB to host UK premiere of new sliding head lathe at its Open House event

Star Micronics GB will host its annual Open House from 19th-21st November at its Technology Centre in Derby. This event will feature live demonstrations of the latest production technologies from Star and its partners, along with the UK premiere of the new SB-20RII sliding head lathe.

UK premiere of the SB-20RII sliding head lathe

After attracting significant interest at recent shows in Chicago (IMTS) and Stuttgart (AMB), the SB-20RII will make its UK debut. As Star's most popular machine series, with over 27,000 SB models sold globally, the SB-20RII is expected to be popular with manufacturers in the UK and Ireland.



The SB-20RII offers various improvements to further enhance performance, versatility and ergonomics. This includes additional tool stations, increased power, higher spindle speeds, advanced control features and improved accuracy. Despite its added capabilities, such as the ability to process components up to 25.4 mm in diameter, the SB-20RII has a 10 percent smaller footprint than the best-selling SB-20R Type G.

Offering a total of seven axes, the main spindle platen of the SB-20RII includes six turning tools, two fixed ER-16 spindles for cross-working, plus a further three modular cross power-driven stations that accept a variety of cartridge attachments. The flexibility of the SB-20RII is further enhanced by its ability to switch between guide bush mode and non-guide bush mode.

Incorporating various technologies to minimise heat generation, the SB-20RII includes Star's innovative thermal displacement correction technology to optimise accuracy, stability and machining performance. The machine is equipped with Star's innovative new ECO mode and is compatible with the latest developments including Step Cycle Pro chip-breaking technology, last part completion mode, eccentric machining cycle and Easy Edit programming utility.

A gamechanger for the fixed head market

Following a successful preview at last year's Open House event, Star GB will again showcase the SK-51 Type A fixed headstock lathe. This 2-inch bar capacity slant-bed machine is equipped with twin 12-station turrets, offering 7.5 kW powered driven tools on every station. It offers 5,000 rpm on the main and sub spindles, and a 640 mm Z-axis stroke length on both turrets.

The machine features the advanced FANUC iHMI control system with a 15-inch touchscreen that offers conversational programming dialogue, free figure contour programming and a fixed phrase insert function for the configuration of individual blocks of code to drop into the final program. Toolpath simulation is also built into the control.



Versatile manufacturing solutions

In addition to the SB-20RII and SK-51 Type A, Star GB will be showcasing a range of its most popular models, including:

SD-26 Type E

A new model capable of \varnothing 26 mm machining,

developed to give engineers the ultimate mill-turn solution for complex components. The Type E variant offers a programmable B1 head with four front and four rear facing tools, plus an additional six cartridge positions for various attachments.

SR-32JIII Type B

The latest 32 mm capacity model within the popular SR series, delivering a range of enhancements including improved rigidity, upgraded swarf clearance, refined ergonomics, Step Cycle Pro chip-breaking technology and the inclusion of a sub-spindle flush pump as standard.

SP-23

A new model capable of 1-inch machining, developed to optimise versatility and performance while maintaining a modest footprint. The machine is equipped with an 8-station front turning platen and a 7-spindle cross-drilling inner tool post, on which a wide variety of tooling attachments can be mounted.

SB-16III

Superseding the SB-16II, this upgraded model utilises the latest generation FANUC Oi-TF Plus CNC control system. The machine's main spindle platen includes five turning tools, a three-spindle cross drilling unit and a four-station drilling arm.

SL-10

Accuracy, efficiency and versatility within an ultra-compact footprint. The SL-10 offers six turning tools on the main side and up to five cross-working tool positions, of which four tool positions are available for cartridge attachments such as thread whirling, slotting, gear hobbing, angled drilling and polygon units.

Advanced chip management with Step Cycle Pro

The Open House will also showcase Star's Step Cycle Pro (SCP) technology, which tackles the challenges of stringy swarf when machining difficult-to-chip materials.

The system delivers its highly effective 'air-cut' chip-breaking operation by oscillating the axis in synchronisation with the spindle rotation cycle and can be used simultaneously on both the main and sub-spindles. This oscillation-cutting method increases production efficiency by eliminating machine stoppages related to swarf entanglement and enhances tool life by reducing the temperature of the tip whilst in operation.

Step Cycle Pro offers a dedicated interface on the FANUC CNC system that allows engineers to easily select the ideal program conditions and chip length for the application. It automatically adjusts the actual feed rate when the function is enabled to ensure minimal effect on cycle times and enables maximum productivity to be achieved.

Ancillary solutions for seamless automation

Visitors will see the latest developments in barfeed technology including the FMB Turbo RS 3-38. This model features the innovative RS technology, connecting the barfeed directly to the lathe spindle by a moving guide



module. By eliminating the unsupported telescopic area between the barfeed and lathe, this offers improved stability for both long and short bar stock lengths. Also on show will be the LNS QLS 65, a feature-packed bar loader available in 1.3 m and 1.6 m lengths.

A comprehensive range of Star's technical partners will also exhibit their latest developments including tooling, software, parts handling, optical measurement, high-pressure coolant, mist extraction, fire suppression and more.

Product, process and industry knowledge

Star GB's applications, service and sales team will be on hand to share their technical

knowledge, giving existing and prospective users advice on identifying the ideal solution to their requirements and maximising their return on investment. Visitors will be welcome to discuss future investment plans, technical drawings and the various schemes and finance options available to make upgrading their equipment even more affordable.

Star GB's Technology Centre is located in Derby alongside the Rolls-Royce factory on Raynesway and is easily accessible from the A52 and the M1 with dedicated parking. The event has an open invitation to all UK and Ireland manufacturers, opening at 9:00am and closing at 5:00pm each day from Tuesday 19th November through to Thursday 21st November. Refreshments and lunches will be provided for all attendees.

Registration is online via the company's website: www.stargb.com/open

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Renishaw strengthens global presence with the opening of facilities in India and Japan

To help service its growing customer base in India and Japan, global engineering technologies company, Renishaw, has recently opened two state-of-the-art technology centres; one in Chennai, India and one in Nagoya, Japan. These upgraded facilities will strengthen Renishaw's presence in both countries and improve customer access to the company's engineering expertise and innovative technologies.

Renishaw unveiled its upgraded Nagoya facility at a two-day event, attended by over a hundred guests including its largest distributors, machine builder customers, Japanese metrology academics, representatives from the British Embassy and employees from the company's Tokyo office. Over the two days, Renishaw showcased the centre's demonstration and office spaces, calibration laboratory, warehouse and despatch areas. The event also included demonstrations of the full range of metrology and spectroscopy products offered by Renishaw, including the new Renishaw Central smart manufacturing software suite which allows manufacturers to collect, present and action accurate process data to enhance their production.

"The event was a chance for us to show visitors how far Renishaw has come since opening our first Nagoya office in 1986," explains Jason Taylor, managing director of Renishaw Japan. "We bought the current Nagoya building in 2019 and moved our offices there and we've now turned the first floor into a brand-new technology centre with a customer demonstration area, seminar room and applications development areas. Now it's up and running, we'll use the centre with our customers, developing and demonstrating new solutions."

Renishaw also recently opened a new office and demonstration centre in Chennai, India, attended by hundreds of customers, machine tool builders, channel partners and



journalists. The new facility will support Renishaw's customers and partners in the Tamil Nadu region, as well as host potential buyers so that they can test the application of Renishaw products on their components before investing. The Chennai site will also serve as a training hub for students, machine builders, end user customers, channel partners and Renishaw employees.

"India is currently experiencing a dynamic period of growth, making it an exciting time to be part of this market," explains Paul Weaver, director of sales and marketing at Renishaw India. "The machine tool industry is expanding, new investments are flowing in from abroad and both the domestic and export markets are seeing significant demand. Renishaw is at the heart of this growth, actively supporting the precision manufacturing sector."

"Our new office and technology centre in Chennai marks a new phase in Renishaw's development," adds Paul Weaver. "This new facility demonstrates our latest innovations, including the NC4+ Blue non-contact laser tool setter, the REVO® 5-axis multi-sensor measurement system, and Equator™ shop-floor gauging systems. It also showcases our precision encoders and calibration devices and we'll use these for customer demonstrations and training sessions."

Renishaw is continuing to invest in upgraded and new facilities to better support its customers. In addition to the facilities in

India and Japan, within the past year it has also opened new offices in Brazil and created its first subsidiary operation in the United Arab Emirates, to serve the rapidly growing manufacturing and advanced engineering sectors in the Gulf Cooperation Council region and Egypt.

For further information on how Renishaw is working with customers, suppliers and local communities across the world, visit www.renishaw.com

Renishaw is a leading supplier of measuring systems and manufacturing systems. Its products give high accuracy and precision, gathering data to provide customers and end users with traceability and confidence in what they're making. This technology also helps its customers to innovate their products and processes.

It is a global business, with over 5,000 employees located in the 36 countries where it has wholly owned subsidiary operations. The majority of R&D work takes place in the UK, with the largest manufacturing sites located in the UK, Ireland and India.

Renishaw works with customers to make the products, create the materials and develop the therapies that are going to be needed for the future.

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Heller celebrates 50th anniversary in the UK

Heller Machine Tools Ltd, a wholly-owned daughter company of German machine tool manufacturer Gebr. Heller Maschinenfabrik GmbH, is celebrating its 50th anniversary this year. Both the parent company and the UK and Ireland subsidiary build 4- and 5-axis horizontal machining centres for world markets, used widely for metal cutting applications in the mechanical engineering, aerospace and automotive industries, as well as in the yellow goods sector and throughout manufacturing industry. The UK site is a global competence centre for turnkey projects and innovative manufacturing solutions.

Heller began operations in the UK in 1974. In 1981, a bespoke factory was built in Redditch, relocating in 1997 to a facility capable of assembling more than 200 machines per year. The assembly capability has since been extended to over 300 machines, which are destined for global markets. Today, more than 150 employees work at the machining and manufacturing facility, providing unparalleled machine tool solutions, service and support.

More than £2 million was spent in the latter

part of the last decade upgrading the production facility, improving the administrative and applications engineering departments and introducing a new customer area for machine demonstrations. Turnover has increased steadily over the years, partly due to a higher level of unit sales including multiple machine orders, both domestically and overseas. Contributing also to higher turnover is income from spares and from servicing the ever-increasing installed base of Heller machine tools in this market.

Flow line assembly

Originally, block assembly of machines in the Redditch facility was transferred to an original flow line that is still operating. It resulted in an immediate 20 percent increase in productivity. However, it was purely a mechanical process and the machines had to be lifted off to be finished in a separate part of the factory.

In contrast, the latest 11-station Strothmann flow line and logistics system, positioned adjacent to the first line, allows the complete manufacture of horizontal machining centres,

including their commissioning in situ on the carriage. When the line came on stream in 2018, there was a further reduction of at least 20 percent in overall assembly time, which is coming down further all the time as lean manufacturing principles are increasingly adopted.

At every stage of the process, work carried out on a machine is documented by the individuals concerned, providing full traceability to comply with the factory's ISO 9001 accreditation. Care has been taken to develop a supply chain of around two dozen regular contractors local to Redditch.

Mechanical assembly of machining centres is completed over the first four stations in the line. Electrical commissioning takes between two and four days and occupies one or two further stations. Later stations are deployed similarly flexibly according to the amount of work required, including geometrical alignment, laser calibration of the axes to ensure repeatability and alignment testing.

The last part of the process is to machine a standard National Aerospace Standard test

piece, which is inspected by an independent team of metrology staff on site to give the customer a guarantee of the machine's accuracy. Once each machining centre reaches the end of the line and is removed for despatch, the Strothmann carriage is lifted by crane and carried back down the gangway to the start of the line to begin the process again.

Solutions-based approach

Manufacturing businesses often face a protracted and complex bidding process, especially when quoting to supply aerospace and automotive OEMs or their supply chains and negotiations can take a long time before contracts are finalised. The date set for start of production usually remains unchanged, however, which means that engineering implementation time from go-ahead to project commencement is compressed.

Heller has the knowledge and experience of developing production processes in short time frames, as well as software tools for NC programming and cycle verification. It also has the infrastructure to produce often complex fixtures, plus machines and tooling in Redditch for cutting trials to prove each step of the process in parallel with the turnkey design, while continuously feeding back relevant test data.

Initial discussions between a subcontractor and the machining solution provider frequently centres on achieving the necessary cycle times across the range of components to be produced in order to achieve the required piece part cost and profit margin. Heller uses advanced simulation within Siemens NX to check the estimated cycle time and also exploits machine

simulation within Vericut. When results are compared to dry running on the machine, a correlation within 5 percent of actual cycle time is typical.

It provides confidence that software cycle time predictions are consistent with those that have been promised. It is even possible to simulate leaving different amounts of stock on a component after roughing and then compare those scenarios with removing varying amounts of metal during finishing. In this way, cycle times can be optimised and the subcontractor can benefit from savings in time and cost. Any production solution can be integrated into an Industry 4.0 environment so that users can maximise productivity and accuracy.

Automation for lights-out running

To get the most from investment in a machine tool and to minimise labour costs, lights-out production offers manufacturers an attractive, cost-saving benefit by increasing the output from the production cell. Heller offers a number of automation options, while if a range of different components has to be machined an FMS provides key benefits for unattended working. By utilising multiple pallets to fixture numerous parts in an automated storage and retrieval system, machines can be kept busy throughout the night, so components are ready for further processing at the start of the next attended shift.

The machine tool manufacturer's expertise goes beyond automated loading and unloading of pallets carrying pre-fixture parts. The entire machining system and logic are given careful consideration to ensure that the production planning requirements can be met with the

resources available within the cell. Heller ensures that tool contact times are accurately recorded in the NC program so the software within the automation system is able to plan tooling availability for any given pallet of parts. It is a complex task, as the system must utilise each tool to its maximum life before a sister tool is deployed to keep within the piece part cost.

Environmental responsibility

As is the case at the German parent company, Heller in the UK takes the environmental impact of its activities seriously and is constantly looking for improvements, evidenced by its ongoing review of the company's adherence to ISO 14001. It recognises that all employees have a responsibility to the environment beyond legal and regulatory requirements and is continually looking to instigate training to enhance ecological performance as an integral part of business strategy and operating methods. Regular reviews ensure compliance and improvement. Heller also actively encourages its suppliers, other stakeholders and even its customers to implement continuous environmental improvement measures.

Areas singled out for attention include making incremental enhancements to the working environment in the factory, reducing interruptions and the need for maintenance as these activities are energy consuming, lowering water usage, minimising packaging and recycling everything from plastics, paper and card through metals, wood and pallets to electrical equipment. A recent initiative was the introduction of smart technology to control LED lighting, coupled with a policy of switching off all

lights and electrical equipment when not in use to cut power consumption.

Further topics under regular review are restricting staff travel as far as is expedient and promoting the use of internet and telephone conferencing, scrutinising office supplies to evaluate their necessity, monitoring of cleaning materials to ensure that they are as environmentally-friendly as possible and the use of only licensed organisations to dispose of waste, particularly chemicals. Regular training of staff to commit to and action these policies reinforces all activities.

Heller Machine Tools Ltd
Tel: 0121 275 3300
Email: sales.uk@heller.biz
www.heller.biz/en



Mills CNC's decision to offer machines with Siemens controls pays dividends

Mills CNC's decision to stock and be able to supply UK and Irish customers with Doosan, now DN Solutions, lathes and machining centres with Siemens controls, taken back in 2015 and 2017 respectively, has paid dividends.

Machine tool sales have been on an upward trajectory ever since the decision was taken, with Mills' share of the Siemens-controlled market, most notably through its DNM vertical machining centres, making a healthy contribution to company sales revenues.

Today, the company's range of Siemens machine tools has grown exponentially and now includes most DN Solutions' models, i.e. lathes and turning centres, vertical, horizontal and 5-axis machining centres, mill-turn machines etc.

Mills CNC, the exclusive distributor of DN Solutions' and Zayer machine tools in the UK and Ireland, is renowned for its proactivity and its ability to act quickly and decisively to meet customers' needs and requirements.

Proving the old adage that "if you give customers what they want they will come", the company's decision, taken back in 2015, to stock and supply its range of DNM vertical machining centres with the Siemens 828D control to customers and, in 2017, to do the same with its Lynx and Puma lathe series, has delivered real business benefits.

Tony Dale, Mills CNC's CEO explains: "Siemens-controlled machine tool sales today account for a significant percentage of our DN Solutions' machine tool sales. Not bad considering that nine years ago that figure was zero.

"The ability to supply customers with machine tools equipped with their preferred control choice has opened up new business opportunities for us specifically, but not exclusively, in the 3- and 5-axis vertical machining centre market."

The continuing demand, amongst many

component manufacturers, for DN Solutions' machines with Siemens controls has meant that Mills' machine tool stocking policy has adapted over the years.

more from their machine tool investments and will, in the near future, be gearing up to provide courses on the new Siemens Sinumerik One control."



The new powerful control which combines CNC, HMI, PLC, closed-loop control and communication tasks within a single PPU is both flexible and sophisticated and enables user-friendly dialogue programming with ShopMill and ShopTurn.

Clearly, the decision by Mills to provide machines with Siemens controls was not and could not be, taken in isolation. The company's strong relationships with first Doosan and now DN Solutions, that stretches back over many years means that Mills has always been able to influence the South Korean-based machine tool builder's plans and decision making.

Indeed, DN Solutions relies and encourages feedback from its subsidiaries and distributors from all over the world to share specific country and regional market trends and developments with them and to actively

become involved in their product development programmes.

"We knew that having machines with Siemens controls, as well as with FANUC and HEIDENHAIN CNC control systems, would generate new and profitable business for us," says Tony Dale.

In addition to Siemens-controlled DN Solutions' machines, Mills can also offer its Zayer ranges of CNC horizontal bed- and bridge-mills and gantry-type and travelling column milling machines with Siemens, as well as FANUC, HEIDENHAIN and Mitsubishi controls.

No longer seen as a 'special' or as a one-off sale, many of Mills' popular and best-selling models, i.e., DVF 5-axis machines, DNM 4500/5700/6700 machining centres etc, with Siemens controls, are now ordered and held in stock at Mills' Technology Campus facility in Leamington ready to meet the demand.

The company, as a direct consequence of its Siemens business, has also strengthened its CNC Training Academy operation to cater for its Siemens customers, with both operator and programmer courses proving popular.

Tony Dale continues: "Siemens controls, with their on-board conversational ShopMill or ShopTurn software interfaces, help make job setups quicker and the error-free creation of part programs.

"We provide a full range of Siemens operator and programmer courses to help customers get

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Danfoss UK invests in Makino FMS

A Flexible Manufacturing System (FMS) comprising three Makino A61nx horizontal-spindle, 4-axis machining centres served by an automated guided vehicle running on a linear track along a storage and retrieval system housing 32 machine pallets, loaded and unloaded at two work-set stations, has been installed at the Warwickshire factory of Danfoss UK. The company is a subsidiary of the global, Danish-owned manufacturer of mobile hydraulic and electro-hydraulic products, compressors and speed controls for electric motors.

Operational in October 2023 following its turnkey installation by NCMT, sole UK and Ireland agent for Japanese machine tool manufacturer Makino, the FMS replaces stand-alone production centres for the manufacture of prismatic components in steel and aluminium. They are used in the



manufacture of a range of hydraulic integrated circuit manifolds for the mobile hydraulic industry.

The Makinos are capable of machining them all efficiently, as they have a rigid, robust spindle offering high rpm as well as high torque. Each Horizontal Machining Centre (HMC) is equipped with a 313-tool magazine, minimising the need to replenish cutters between batch runs, despite production being high mix as well as high volume.

Any pallet with a fixtured component can be routed to any machine, limiting the amount of movement needed, providing considerable flexibility of production and maximising productivity. Machine utilisation is close to 100 percent, as there is always a part waiting for immediate presentation to one of the spindles. The new, automated system allows the manufacturer to run the facility 24/5 and at weekends when necessary. Two operators

manage the cell during each of two day shifts, followed by unattended operation from midnight until 6.00 am.

NCMT supplied applications engineering support throughout the project to enable Danfoss to switch over programs from the previous machines to the new Makinos. The entire project was managed from start to finish, from an empty factory floor to a full programme of operator training.

The manufacturing process starts with a request from a customer via the Danfoss sales team. The system places a request for an operator to load the requisite work onto a specific pallet, which may involve fixturing a single part or several components. The pallet is then scheduled into the FMS. The operator only needs to be in attendance at one of the work-set stations to load and unload parts under instruction from the materials requirement (MRP) system. NCMT, working with Seiki Systems, has now facilitated a new process whereby Danfoss can download orders automatically within the system.

Tony Cave, production supervisor at Danfoss UK says: "We didn't know much about NCMT until we started this project. The relationship that has developed between our companies has been really good. All departments within NCMT, from engineering, sales and purchasing through to the senior management, have been very responsive to any queries we have had."



Many benefits are derived from Danfoss UK's new investment. Due to the increased production capacity, machining is being brought in-house that was formerly outsourced to subcontractors. This not only saves cost but also provides greater control over lead-times and product deliveries to customers. Moreover, Tony Cave advises that as experienced staff look to retire over the coming years, the automated FMS will be a big benefit in mitigating the loss of their skills.

He added that all five of the Danfoss group's global factories now use a Makino FMS to produce manifolds, following a strategic decision to align each production site's capabilities. It provides flexibility to allow manufacture in support of worldwide customer demand and specific local requirements.

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A range of machining centres with a very small footprint and price to match

These new machines have many options including 4th axis, Siemens or Fagor controls, tool setting probes etc.

The smallest machine, the AJPR220, runs on a standard 3-pin plug on 240V 1ph electrics. It is on wheels and can fit through a standard single door. It operates on a Siemens 808D control which has conversational input. You can download a free PC version for training or offline programming. This control is common throughout the range and Ajax supplies, with all its Siemens 808D controlled machines, full training videos to make the job easy and cost a lot less than expensive on site training.

Also in the range is the AJMX220 5X 5-axis mini vertical machining centre,



also on wheels, with a 240V 3-pin plug. It is ideal for 5-axis training and for making small complicated components.

The Ajax application team

are always on hand to answer questions and help with programming issues.

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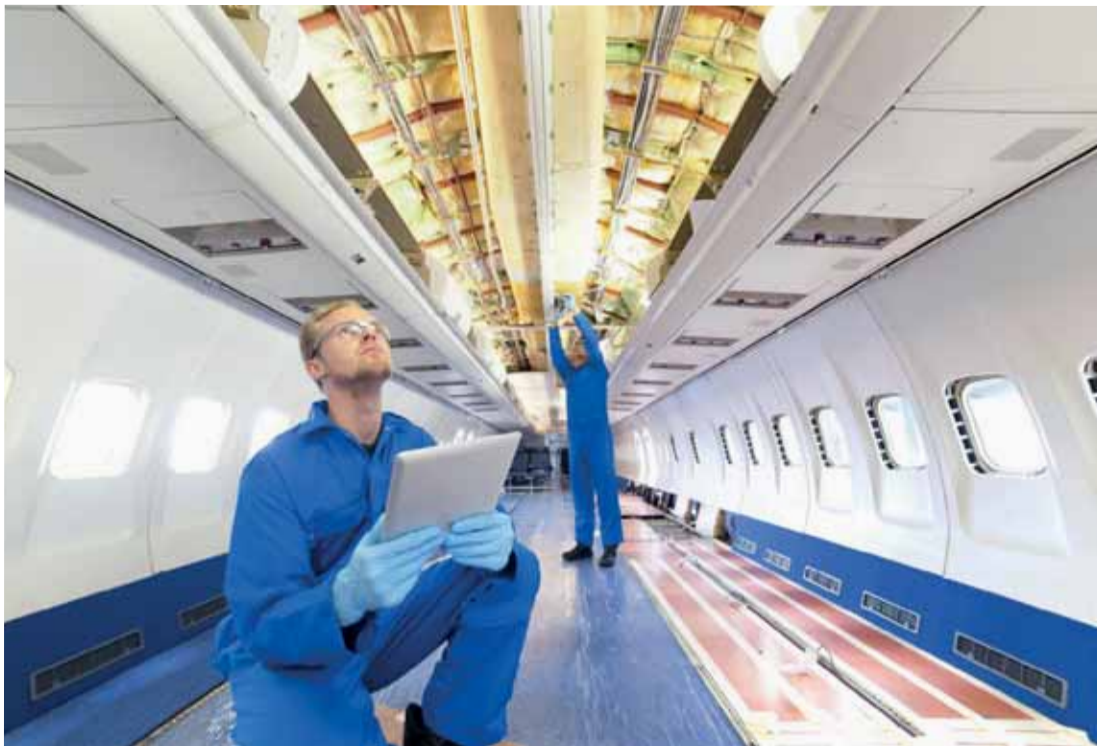


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CLAMP ONCE – MACHINE COMPLETE

Additive manufacturing for aerospace interiors



Cabin design is an important topic for aircraft manufacturers, with companies looking for ways to modernise, deliver a better passenger experience and improve sustainability. As more airlines look to update their interiors, additive manufacturing provides a way to rethink part design to simplify, thin or lightweight components. But what parts is it suitable for and how is it already being applied? Here Dave Moore, 3D print consultant at Tri-Tech 3D, explores.

3D printing's most prominent advantage for aircraft interiors is the ability to customise parts to be lightweight and to do so quickly. Parts can be designed with complex geometries, thinner walls than their injection moulded counterparts, or consolidated into components that reduce material use and weight. In addition, parts can be designed to include fittings or movable features to enable more straightforward assembly.

The ability to rapidly produce custom parts directly from a digital file on demand can remove the need for hefty inventory, remove concerns about obsolete components and avoid supply chain delays. Manufacturers can quickly replace damaged interior parts, without the need to stockpile spares.

"Plastic cabin parts are typically injection moulded, but this is an expensive approach for a low volume of around 3-4,000 parts per year,"

says Garry Sellick, additive manufacturing manager at Airframe Designs. "Based on initial studies, we believe we can achieve an individual part price reduction with 3D printing. With the freedom of AM, we can achieve a weight reduction that can lower carbon emissions."

How is 3D printing being applied?

The ability to produce repeatable, accurate 3D printed end-use parts using aerospace-approved materials is benefitting many aircraft manufacturers and operators. Stratasy, aircraft MRO company SIA Engineering Company and 3D printing bureau Additive Flight Solutions have produced more than 5,000 parts certified for aircraft cabins.

In the functional interior of an aircraft, 3D printing is being explored for the production of ducting, vents, plenums, baffles, cable management, electrical housings and more. AM is also being applied for the production of aesthetic parts, such as light covers, bezels, trim, signs, door latch components, seat end and arm rest caps.

China Eastern prints custom support devices for Electronics Flight Bags for use across its A330, A320 and B737 fleets saving 72 percent on cost. It also prints replacement business class newspaper holders, saving 48 percent of costs and reducing lead time to three days.

Generally, low volume parts with some level

of customisation are good candidates for AM. While certification for non-flight critical components is easier, interest is also growing to product flight-critical parts. Etihad is now envisioning an entire retrofit of an aircraft in 30 days using 3D printing, to achieve 30 percent faster upgrades.

Choosing 3D printing technology

To be able to produce highly accurate and repeatable parts, manufacturers need a deep understanding of the 3D printing process and the causes of variation. To aid manufacturers with this process, Original Equipment Manufacturers (OEMs) are producing specialised 3D

printing systems. A great example is the Fortus 900mc, which is mechanically enhanced to remove common causes of part repeatability, such as by controlling moisture and is supplied with all the process control documentation needed to certify parts. The 3D printing process, certified by the US National Centre for Advanced Materials Performance, is designed to remove complexity from achieving certification from the relevant aviation agency, be it EASA or FAA.

Alongside dedicated machines, there are numerous materials available with the relevant certifications: FST, FAR 25.863 and UL94, alongside excellent strength to weight ratios. For example, the ULTEM™ 9095 and 1010 resins.

In many cases, the business case will be clear: less time on the ground, reduced inventory spend and happier customers will reap rewards. Establishing a process successfully will require the support of a reliable provider, to talk through the potential material and machine options and ensure the optimum process.

For more information on 3D printing systems and materials for aerospace applications, visit <https://www.tritech3d.co.uk/contact>

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VERICUT provides safe machining of complex aerospace parts

A leading supplier of complex aerospace components is enhancing the reliability of its machining operations since investing in VERICUT verification, simulation and optimisation software from CGTech. Among many benefits, the implementation of VERICUT has seen this progressive manufacturing business reduce its scrap rate for First Article Inspection (FAI) parts to almost zero.

Established in 1979 and today located at Manisa in the west of Turkey, HMS Makina is a leading machinist of many different parts and products for a global portfolio of aerospace primes and their sub-tiers, mainly in EU countries. The company, which employs 440 highly skilled personnel, exports 70 percent of total sales from its modern 23,000 m² production facility. All of HMS Makina's special processes carry approvals by major OEMs and NADCAP.

"With over 80 high-technology CNC machines we're able to produce complex and precision parts from all kinds of light and hard metals, including aluminium, steel alloys, stainless steel, titanium, magnesium and nickel-based superalloys from plate, sheet, castings and forgings in compliance with customer specifications," explains Onur Benzergil, new part supervisor at HMS Makina.

Onur Benzergil leads the team that carries out machining process design and NC programming for aerospace parts. HMS Makina has the ability to offer finished aerospace products, providing post-machining services that include Non-Destructive Testing (NDT), shot peening, surface treatment, painting and



assembly. This market differentiation, alongside its quality-oriented production, makes HMS Makina a preferred supplier to the aerospace sector.

Complex geometry

The company produces a wide variety of aerospace parts for its customers, including forged titanium engine components and structural airframe parts.

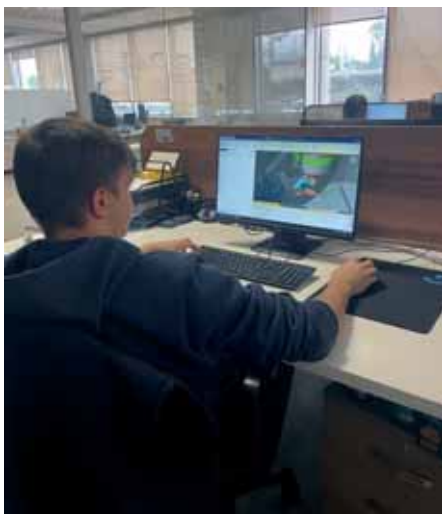
"Machining these complex-geometry components requires a simulation program to prevent failure and avoid the expense of scrapping workpieces made from expensive materials," states Onur Benzergil "As a result, we decided to make this investment because we see VERICUT as superior to other solutions."

He adds: "We had been researching simulation systems for a long time, but VERICUT is known to every company working in this sector. Since it was such a critical issue, we didn't want to leave anything to chance."

Competitive edge

Installed in 2023, HMS Makina leverages the benefits of VERICUT to detect errors, potential collisions and areas of inefficiency before actual metal cutting. Innovating and gaining a competitive edge in aerospace means meeting increased demand and tight timelines with high-quality parts. VERICUT is the key to machining components quickly and with confidence.

"Notably, the software has allowed us to



eliminate manual prove-out processes, freeing-up machine time to run more parts," says Onur Benzergil. "It's also proving highly beneficial in reducing scrap rates. Our scrap rate is now almost zero for first-article parts. In addition, safer machining really stands out for me. Even though this gain is not easy to quantify, I can say safety is the biggest benefit we see on a daily basis."

HMS Makina also takes advantage of VERICUT's AUTO-DIFF module at the end of every simulation. The company says AUTO-DIFF helps it detect errors such as potential gouges, providing approximately 99 percent accurate results.

VERICUT AUTO-DIFF compares a CAD model with a VERICUT simulation, automatically detecting differences, design weaknesses or mistakes in the design. AUTO-DIFF also reduces the time it takes to prepare an NC tool path. Notably, programmers can check for gouges or excess material while working on the program, identifying and correcting issues before machining.

Great expectations

"VERICUT fully meets our expectations," states Onur Benzergil. "Today, we do not move to the production phase until the VERICUT simulation is complete."



HMS Makina received comprehensive training and technical support from local VERICUT reseller, Ucgen Yazilimo, for every aspect of the software, helping the company to understand the full potential of VERICUT.

"Of course, VERICUT should not prove difficult to learn for anyone who uses CAD software," he says. "We became familiar with it in a short time period. Today, VERICUT is definitely helping us use our machinery more effectively, which in turn drives more efficiency. I think any company machining parts in the aerospace sector should invest in VERICUT. The software has a simple interface; so many details are well categorised and it's very easy to access. The graphics are also advanced and I find the Reviewer plug-in very useful."

VERICUT Reviewer incorporates all the

functionality of NC Review mode in a stand-alone viewer that does not require a licence. The Reviewer can play forward and backward while removing and replacing material. Users can rotate, pan and zoom, just like normal VERICUT.

"I would recommend VERICUT to other businesses because it has very good infrastructure backed by a great team for technical support," concludes Onur Benzergil. "VERICUT is a proven and constantly evolving program and we're finding it highly beneficial here at HMS Makina."

CGTech's VERICUT software is the standard for CNC simulation, verification, optimisation, analysis and additive manufacturing. CGTech also offers programming and simulation software for composites automated fibre-placement, tape-laying and drilling/fastening CNC machines. VERICUT software is used by companies of different sizes in all industries. Established in 1988 and headquartered in Irvine, California; CGTech has an extensive network of offices and resellers throughout the world.

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Aero industry prepares for take-off at Starrag event

The Starrag-Tornos Group recently welcomed guests to its 25th annual 'Aerospace and Turbine Technology Days' event hosted by Starrag in Switzerland.

The much-revered event welcomed some of the most prominent OEMs and supply chain partners from the world of aerospace manufacturing, R&D and product development arenas. Celebrating the success of the event on its second day, Martin Buyle, CEO of the Starrag-Tornos Group said: "The Aerospace Days event has become a tradition. It's an environment where people want to learn about technology. We position ourselves as technology leaders and not just machine or equipment sellers. One of the means to demonstrate this expertise is to bring together specialists from all over the world to learn about what we can offer and also provide an environment where engineers can learn from their peers and what they do. This event really is like a family that we bring together and we bring a lot of technologies together. It's like a family or friends meeting but it's spiced up with technology that we bring along. That is why it's worthwhile and why so many people come every year."

"There has been a lot of talk about economic concerns and possible recession, but the aerospace industry works very differently at the moment. We are still witnessing some post-Covid industry effects where companies are still investing but there are also some commonly known hiccups in the commercial aerospace industry. Overall, the aerospace industry is doing particularly well. The first day of our event was particularly positive with over 100 customers attending from 38 different countries. This gave us a great opportunity to show our technological capabilities at what is a



A presentation on FANUC robots loading Starrag machines at the Starrag Tech Days.



A FANUC Cobot loading a Starrag machine at the Starrag Tech Days event.

truly international event. We had some very interesting presentations from our team as well as our technology partners that fully engaged our attendees."

Looking at the format of the event, Alexander Attenberger from the Starrag-Tornos Group adds: "At this event, we have 13 different

stations and just a few of the highlights include integrated automation with a cobot on a blade machining cell. This is unique because even with automation, the footprint of the machine would be no larger than if it didn't have automation."

"The overall story is automation digitalisation. With our famous ECOSpeed series, we have increased productivity by more than 20 percent. On our STC 1250HD, we have been able to improve the cutting rate for titanium machining with lower cutting tool consumption. This is giving reduced cost per part for the customer. The automation, the ECOSpeed series and the STC 1250HD are just three of the many highlights at this event."

Alexander Attenberger continues: "For each of the 13 stations, we have a technology partner and we share the stations to show the customer what is possible with a completely integrated package. The theme is not just about the machine, the measurement or the automation, it's about the combinations and technology integration of all of the integration partners. We



Starrag machines at the Starrag Tech Days event.

have worked with these partners for many years, so it's a genuine partnership in both directions with a huge benefit to the customer."

Commenting on the aerospace demonstrations, Alexander Attenberger says: "The 'Aerospace and Turbine Technology Days' is a huge highlight for our business as we really get the 'Who's Who' of the aerospace industry attending as our guests. We have guests from almost 40 countries who are all coming to our event to discuss their issues and how we can resolve them."

From an innovation perspective, Markus Ess, the director of technology for the BUH and BMS at the Starrag-Tornos Group said: "It's great to see all of the customers show an interest in the solution that we have at this event. We have tried to not only bring the best machines to this event, but also the best solutions for our customers. For me, as a technical director, the important thing is to understand what the customer is doing with their machine and with their parts so we can get a complete picture of their activities. One of the key highlights we have at the event is the STC 1250HD. This machine is focused on machining titanium structural parts. So, if you want to do that you need a very robust and heavy machine that offers hydrostatic guideways that delivers loads



One of the machining demonstrations at the Tech Days event.

of vibration dampening and lots of stiffness. The machine guideways are 10 times larger than a regular guideway machine, so you can really take deep and heavy cuts bringing massive roughing performance to customers' applications."

"At this event, we are machining a titanium strut part on the machine and it is effectively the engine beam where the jet engines are mounted. What we are demonstrating with this example is not just the machine but also our

knowledge of critical aerospace applications. This solution encompasses everything from the cutting tool selection and strategy to the machining strategy where we are reducing cycle times by over 30 percent while enhancing performance and reducing costs."

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Tel: 0121 359 3637
Email: info-uk@starrag.com
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New 'J profile' threading range

Walter is now expanding its existing portfolio for J profiles. The cutting tool specialists have introduced an extensive new range of dimensions for the Paradur® Ti Plus and Paradur® Ni 10 blind-hole taps, the Prototex® TiNi Plus for through-hole threads as well as the new TC630 Supreme thread milling cutter.

Users can now obtain practically any thread size in the standard range in the profiles MJ, UNJC and UNJF. Thanks to their high load-bearing capacity, threads with the J profile are preferred in the aerospace sector. The new arrivals particularly apply to aircraft engine components where difficult-to-machine materials such as titanium, on the 'cold side' of the engine, or nickel-based alloys, on the 'hot side', need to be machined. The tried-and-tested Walter tool families have been specially developed for these exacting requirements with appropriate coatings or helix angle geometries to enhance performance.

All four tools have an extremely stable design and guarantee high process reliability in difficult-to-machine materials. The Paradur Ti Plus for titanium machining is impressive due to its stable cutting edges and its highly

wear-resistant, titanium-free ACN hard coating. This coating prevents the formation of built-up edges and it enables a very long tool edge life with excellent thread quality.

The Paradur Ni 10 for nickel-based alloys is particularly suitable for both cost-effective and reliable machining of difficult materials such as Inconel 718. Likewise, the Prototex TiNi Plus is ideal for the universal machining of challenging titanium and nickel alloys with one tool. Additionally, the newly added TC630 Supreme orbital thread milling cutters are specially designed for components made of stainless steels and high-tensile materials such as titanium or Inconel with the highest demands on process reliability.

About Walter AG

Walter AG was founded in 1919 and is now one of the world's leading metalworking companies. As a provider of specialised machining solutions, Walter 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.

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Investment in Hurco machines raises speed of product development

Maldon-based OrthoSolutions designs, develops and manufactures implants and instruments used in surgical repair of the foot and ankle. In support of the design process, the company works closely with specialist surgeons.

The foot is a complex structure comprising 33 joints, 26 bones and more than 100 muscles, tendons and ligaments that all work together to bear weight, allow locomotion and transmit force. Fractures and other injuries are varied and complex, so OrthoSolutions offers a myriad of products that provides a solution for the majority of debilitating conditions that occur within the foot and ankle complex.

After in-house design of a new product has been completed, the first stage of the prototyping process involves 3D printing a plastic model. Next a steel prototype is manufactured, which in the past was subcontracted out, adding up to 16 weeks to the



lead-time. A further complication was that surgeons would often ask for small design changes or improvements, which could double the delay.

So, to speed up the prototyping phase, OrthoSolutions has invested in a new, purpose-built production facility and purchased a pair of Hurco machine tools to bring the work in-house. A Hurco VM10i vertical machining centre with a 4th axis rotary table and tailstock

arrangement plus a TM6i 2-axis CNC lathe have been installed to perform a majority of the milling and turning operations required. They have greatly improved speed of turnaround and at the same time allow programs to be edited and prototypes to be remade quickly in response to surgeons' instructions.

Kevin Stamp, design director at OrthoSolutions says: "We chose Hurco because they are a long-established business in the UK

and their machines have a reputation for reliability and accuracy.

"The competitive price of the machines and the ease of programming made the choice an easy decision.

"Furthermore, the customer support is great. I have instant access to experienced engineers that can help me if I have any issues."

He is particularly pleased with the way the screen graphics on Hurco's WinMax control support the prototyping process. The ability to visualise the component, toolpath and tool simultaneously gives confidence that collisions will be avoided. He currently programs parts conversationally at the control, but to improve the cosmetic appearance of products even further, he intends to install a CAD/CAM system.

Although the machines have only been in operation for a short time, OrthoSolutions is already reaping the benefits. Kevin Stamp gave the example of a steel prototype reamer, which would previously have taken 16 weeks for a subcontractor to supply, that is now being machined in four days in-house.

Toolmaker invests in high-speed machining

Based on the Ballymote Business Park in County Sligo, Ireland, Mito Precision Engineering provides a toolroom service to manufacturers in the medical devices and automotive industries, as well as jigs and fixtures to the medical and pharmaceutical sectors.

Since the company's establishment by Malachy Towey and Michael Taheny in 2010, manufacturing capacity has steadily expanded and now encompasses surface grinding and both wire and sink EDM in addition to turning and milling. The latter machines have been mainly sourced from preferred supplier Hurco.

In total, Mito operates 11 Hurco CNC machining centres and two Hurco CNC lathes. They range from early models of the compact VM10 milling centre to a TM8i turning centre purchased last year and the latest investment, a VMX42HSi vertical machining centre with 20,000 rpm HSK63A spindle. The combination of ease of programming, robustness and high power make Hurco machine tools ideal for manufacture of one-off, often complex parts in tool steels or stainless steel.

Mito now has three different model variations of the Hurco VMX42. Known as an industry workhouse, it is a one-metre X-axis machine with a generous 610 mm Y-axis travel and the same in Z plus a table load capacity of 1,750 kg, allowing the company to produce large mould tools.

Recent design enhancements mean that direct drives are provided in X, Y and Z and roller guideways are used in all axes for precise, rigid dynamics. The machine cabinet has full washdown in addition to the spindle coolant ring, while chip evacuation is via a swarf conveyor.



Mito provides customers with a top-quality service, offering competitively priced tools, advice and guidance. Having forged long-term relationships with customers of varying sizes from a variety of industries, Mito has gained new business through personal recommendation. Attention to detail in the tools it supplies and ongoing investment in new machinery and technology underpin its success.

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Tel: 01494 442222
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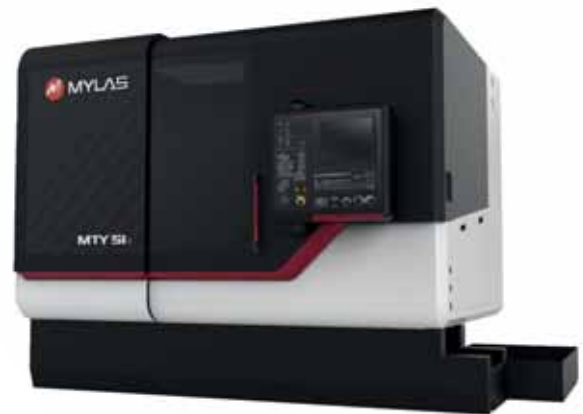
Dugard launch most capable multi-axis turning centre

Since Dugard Machine Tools was announced as the UK distribution and technical partner for the high-end MYLAS range of multi-axis turning centres, the popularity of the brand has been evident. Standing above its competitors, the class-leading MYLAS brand has demonstrated unparalleled flexibility, precision and productivity in the small to medium-sized turned parts arena.

At the top of the MYLAS portfolio of multi-spindle multi-axis turn/mill portfolio is the exceptional new MTY Series of twin-spindle, twin turret, and triple channel turn/mill centres. Designed to create unparalleled productivity gains, the MYLAS MTY range from Dugard can be easily programmed to simultaneously engage three cutting tools on the workpiece through a range of configuration options. As a production centre, the MTY Series has a slant bed monoblock design that evacuates swarf at speed. Incorporated into this robust base are THK double screwnut ballscrews and THK ball guideways with 6-piece blocks, a combination that delivers exceptional stability and rigidity while providing the foundation for precise, repeatable heavy-duty machining.

The MYLAS MTY is available in two models, the MTY 51 and the MTY 65 that offer 51 and 65 mm bar turning capacity. Within the two models are a series of configurations that can be specified to best meet the needs of the end user. The MTY 51A or 65A configuration offers a single Y-axis with two tools cutting in tandem, the B type machine offers a single Y-axis, tailstock and two tools in simultaneous cut whereas the MTY 51C and 65C type provides 2-tools on the part with double Y-axis. The MTY D is a double channel machine with a double Y-axis and tailstock and the MTY51E and 65E offer 3-tools in simultaneous cut with double Y-axis and tailstock. The incredible flexibility means that Dugard has the optimal solution for all your turned parts, from the simple to the most complex.

Within these options, MYLAS offers a 5,500 rpm main spindle on the MTY51 and 4,000 rpm on the MTY65 with a power rating of



7.5/11 kW plus NN bearing type and roller bearings at the front and rear of the spindle to deliver cutting power directly to the cutting surface resisting axial and radial forces. Complementing this on the sub-spindle is a powerful 6,000 rpm unit with 5.5/7.5 kW that sits alongside an optional tailstock with 100 mm travel to increase turning length up to 5XD.

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Machines from XYZ offer classic performance in vintage car part machining

Thetford-based RKE Engineering and its sister company ROTOSHIM are benefiting from the arrival of a new ProTURN RLX 1630 lathe, supplied by XYZ Machine Tools. The machine joins four other XYZ models on site, including an RMX 2-OP portable machining centre. Technical partner and founder Craig Harvey is a career-long fan of XYZ's ProtoTRAK®-controlled machines thanks to their ease-of-use and reliability. A core activity of the machines at RKE Engineering is the production of parts for pre-war vintage cars, including iconic classics such as Ford Model A and Model B automobiles.

maintenance and repair jobs. Production machining is typically the territory of ROTOSHIM, which produces vintage car parts, including shock absorbers, oil pumps, water pumps, pulleys and flywheels.

"We invested in the new ProTURN RLX 1630 because we needed another lathe to undertake our shock absorber work," explains Craig Harvey. "We originally started making dampers for vintage cars to fill dead time in the workshop, but it soon turned into a beast of its own. We supply parts to customers around the world now. I knew the RLX 1630 would fit the



RKE Engineering was established in 2018 as a precision subcontract machine shop, taking on a wide variety of projects. As a machinist at his previous company, Craig Harvey became very familiar with XYZ machines and their ProtoTRAK® controls. This experience led him to choose XYZ as the preferred machine for RKE.

"From the outset we were always going to invest in XYZ machines," he says. "The machines work well and are so easy to use. We have five XYZ models now, all bought from new with the exception of a pre-owned Edge 2000 turret mill. Even though that machine is nearly 25 years old, it gives me virtually no problems whatsoever, which speaks volumes."

The core business at the six-employee company is largely R&D work, alongside

bill perfectly, offering plenty enough performance to undertake both our production and R&D turning work."

The XYZ ProTURN RLX 1630 offers 400 mm swing over bed, 760 mm between centres, a 54 mm bore and a 2,500 rpm spindle benefiting from constant surface speed capability.



Complementing the machine is the ProtoTRAK® RLX control, with users able to enjoy rapid production of programs thanks to its conversational programming software on the 15.6-inch touchscreen. The machine is helping RKE Engineering and ROTOSHIM increase capacity, efficiency and output due to its ability to operate either manually or under full CNC control.

"I love the ease-of-use that ProtoTRAK® controls provide," says Craig Harvey. "New operators get up to speed very quickly. I can also step in if required. It doesn't happen often but with ProtoTRAK® it's like riding a bike, you never forget. I'm not sure I could say the same if we used any other type of control."

Business at RKE Engineering and ROTOSHIM is currently strong, with vintage car work performing particularly well. The company manufactures parts that are no longer commercially available for classic vehicles, including three variants of the Ford Model A: 1927-31; 1932 and 1933-34.

For example, the design of the ROTOSHIM lever-arm shock absorber uses the essential elements of telescopic dampers: steel shim stacks control fluid flow, while pressurised oil prevents cavitation. These elements combine to allow damper tuning and provide the optimal ride based on vehicle weight and spring stiffness. The company supplies the dampers pre-set without any need of adjustment, just bolt on and drive.

"One of our operators machines the

aluminium damper body from a drop forging on the XYZ 2-OP,” explains Craig Harvey. “We complete these high-precision components, four at a time, in two operations using just eight tools. During machining, our operator can walk away and get on with something else. This approach makes it a very cost-effective part for us.”

A full in-house design and consultancy service allows all vintage car components to be overhauled to improve characteristics such as strength and performance. This combination of traditional engineering excellence with modern, forward-thinking solutions is a real market differentiator. Importantly, all ROTOSHIM products undergo a stringent QA process, including testing to failure under extreme conditions.

Craig Harvey continues: “Our passion lies in enhancing the driving experience by pushing the boundaries of classic car part technology to meet modern standards for vintage car enthusiasts.”

A recent case-in-point involved a racing shock absorber for an Austin 7. With the help of its new shocks, the Austin 7 was able to ride the apex of bends much better and break the lap record in its class by 12 seconds. The car went



on to win several first places in a series of significant races.

Craig Harvey concludes: “Due to achievements like this I can honestly say we never lose a customer. The XYZ machines are a big part of that success. Having these machines in-house means we can offer a wider range of

services and attract the best staff, which in turn promotes growth.”

XYZ Machine Tools
Tel: 01823 674200
Email: sales@xyzmachinetools.com
www.xyzmachinetools.com

Quaser fits the bill for Beechwood

As a family-run business that started trading from a small unit near Blackpool town centre, Beechwood Engineering Ltd has evolved into a major local manufacturer with a capital investment of more than £1m in the last 12 months. Part of this acquisition trail has seen the company invest in a Quaser MV184EH machining centre from the Engineering Technology Group (ETG).

Founded in 1977 and now managed by the third generation of the family, Beechwood is predominantly a 5-axis machine shop with ambitions of implementing automation throughout the shop floor. Despite manufacturing everything from simple to complex 5-axis parts for the F1, nuclear, offshore and food industries, the company that is now located in Poulton-le-Fylde needed a 3-axis VMC with a HEIDENHAIN CNC control unit. ETG answered the call, delivering the Quaser in August 2023.

Labelling itself as a ‘one-stop-shop’ for machined components, Beechwood has a plethora of high-end machine tools.

With HEIDENHAIN CNC control systems on its machining centres throughout the machine shop, Beechwood wanted a 3-axis



HEIDENHAIN-controlled VMC with a rapid delivery time that could fit into the floor area of an ageing outgoing 3-axis machine. The 23-employee ISO: 9001 certified manufacturer still has other machines on its shopfloor from ETG such as a Nakamura-Tome NTRX-300 multi-axis turning centre. It is therefore fully aware of the quality and service from ETG, both factors in the latest acquisition.

As standard, the Quaser MV184 has a spacious 1,200 by 600 mm bed with X, Y and



Z-axis travel of 1,020 by 610 by 610 mm with BT40 taper spindle options from 9,000 rpm to 24,000 rpm. From an optional extra perspective, the Quaser MV184 is available with 30, 48 or 60-position ATC, spindle oil chiller, BBT spindle attachment, 4th axis preparation, linear encoders, tool and workpiece probing, a choice of high-pressure coolant systems, filtration unit, oil mist collector and much more.

Engineering Technology Group (ETG)
Tel: 01926 818 418
Email: sales@engtechgroup.com
www.engtechgroup.com

Part picking or pallet loading - Which automation technology is best for your business?

by Luke Puplett, external sales manager at YMT Technologies

In the competitive world of manufacturing and factory production, it makes sense to optimise your CNC machine tool to reduce its non-productive periods. This applies across all sectors: from automotive and aerospace to general part manufacturing. The ability to automate, not only the setup and machining processes, but also the production queue, raw part loading and finished part stacking, are among the main benefits, purpose and function of robotics. Automating your processes correctly will reduce idle spindle time on your machinery enormously. Machine automation makes it easier to run second shift operations and an automated system is one of the best ways to start running a lights-out operation. What's more, automated machining lets you keep one or more machines running while your skilled workforce carry out tasks on other machines or in other areas.

The decision to invest in new machinery becomes easier when you validate an automation plan. Not only does your machinery become more productive with automation and robotics, but employees do as well. Automation allows your equipment to increase output with the same, or less, the amount of operator hours required to run the machine. With less time spent on redundant tasks like setup, your employees are released for more productive, high-level productivity resulting in greater efficiency and output. An automated facility makes it easier to scale down production when demand is lower and scale up significantly when demand is higher without any major adjustments. Essentially, automation gives businesses a much

greater opportunity to accept work they normally wouldn't, increasing potential business growth while greatly decreasing the risk.

There are two popular methods to automate the loading and unloading of parts: part picking robots and pallet loading robots. With many companies exploring automation to increase their productivity, it's important that you understand the characteristics of each technology so you can make a more calculated choice between these two preferred automation solutions.

Part picking technology

As the name suggests, part picking robots transfer parts directly to and from a machine tool without the use of an intermediary pallet or fixturing unit. To achieve this, the robot arm uses a gripper to pick and place the part into a pneumatically operated clamping head within a

CNC milling machine or CNC lathe. Robot arms are available in numerous specifications to cover a diverse range of applications and industries with payloads beyond 2 tonnes and reaches of over 4 metres. The grippers, which are used to move the components, are also available in various configurations, with options to hold square and round material and grippers to collect more complex finished parts.

Many see part picking robots as a solution for high volume, repetitive work. This is not always the case. Many part-loading robots, including Cellro solutions offered by YMT Technologies, can be configured to pick and place various parts of different shapes and sizes using just one cell. There are limitations, of course, as there are with any automated process, but essentially, they are a more flexible technology than some are led to believe. Typically, the raw material is positioned onto shelves and/or within drawers. The number of parts and the



number of variable jobs you can produce within one operating cycle is dependent on the provider. Cellro, as an example, can house hundreds of parts with their Xcelerate range, making it one of the most economic automation systems available on the market today.

Different grippers can be docked within a robot cell to enable you to move contrasting types of stock, round or square raw material and finished machined parts. If the geometries of the finished parts are diverse and complex, part picking technology could become problematic because the gripper must be able to efficiently remove the parts from the clamping head. There are a lot of

advantages to part picking robots, notably the lower fixturing costs and less operator labour compared with pallet loading solutions. A parts picker doesn't require an operator to secure each part to a fixture; they only need to stage the parts onto the feeding station which means changeovers are less labour intensive. Fixturing costs will be substantially lower than palletised automation solutions too. This alone is a good reason to explore this technology first because it could be a much more cost-effective solution, especially for parts that have simple starting and resulting geometries. High volume, low mix production is commonly where part picking technology excels.

Pallet loading technology

Pallet loading automation systems transport pallets to and from a single CNC machine tool or multiple CNC machine tools. Unlike part loading robots, pallet loaders are typically a solution for vertical and horizontal machining centres, rather than CNC lathes. Each pallet will house a fixturing device to clamp one or more parts to a pallet. Fixturing a pallet pool can be overwhelming, not only because of the cost, but because there are many different fixturing solutions available on the market. Many opt to fill their pallets with self-centring vices, YMT Technologies offer some outstanding workholding solutions, such as the Jergens Fixture-Pro and Tuscan T series vices, which



offer unrivalled performance and fundamentally, the flexibility to accommodate parts of most, if not all materials, shapes and sizes. In any instance, the modularity of workholding is critical, but more so when investing for a palletised automation system. It's more important than ever to future-proof your investment.

Leading pallet automation solutions from Erowa, supported by YMT Technologies, offer compact standalone loaders to feed one machine tool, as well as rail-type systems which can feed multiple CNC machines. There are several pallet sizes available to accommodate large or small workpieces, or large or small fixtures. Typically, the pallets house a spigot in the base, which engages with a pneumatic chucking system located on the machine tool bed. The pallets will also have a cleat on the face of the pallet, which the robot grips to carry the pallet between its home-position and the chuck. Essentially, with the robot transferring a pallet each time, the parts and fixtures transported can be more complex.

A key advantage of a pallet loader over a parts picker is that you can gang multiple parts onto one pallet, which will increase the capacity and can therefore increase the efficiency of your automation investment. For automation feeding 5-axis machines, many businesses choose to mount pyramid fixtures onto their pallets, either manufactured in-house, or

choose to use an off-the-shelf solution, such as the three or four-faced pyramids offered by YMT Technologies. The angled faces permit multi-part loads while still providing the part access needed in 5-axis machining.

Fundamentally, workpieces used in a pallet loader can be much more diverse and with that in mind, could be more suitable for machine shops who manufacture parts of more varied geometries, or those who are likely to attain work of differing sizes and complexes. What works for you today may not work tomorrow. That must be the primary thought of those looking to invest in automation.

YMT Technologies has a dedicated automation team who will take the time to understand your needs and who will make a calculated recommendation on the best automation solution for your business, the best solution for today and for you moving forward. Over several years, YMT Technologies has carried out numerous automation installations across the UK on a diverse range of machinery and for varied applications. With that experience, its highly skilled team has developed a series of new automation solutions, developed and built at HQ in Yeovil.

YMT Technologies

Tel: 01935 428375

Email: sales@ymtltd.co.uk

www.ymtltd.co.uk

1st MTA launches advanced automation solutions from Breuning IRCO

Under an exclusive partnership agreement, 1st Machine Tool Accessories (1st MTA) is delighted to announce that it is introducing to the UK and Irish markets the extensive range of bar feeders, load/unload systems and custom solutions manufactured by German automation specialist Breuning IRCO. The equipment is suitable for automating CNC sliding-head and fixed-head turning centres, including multi-tasking lathes, and also mill-turn machining centres, rotary transfer machines and special purpose machine tools.

This strategic collaboration introduces a new era of innovative standard and tailor-made automation solutions for CNC machine tools, including short and long bar feeders, workpiece handling systems and hybrid automation arrangements, that will bring significant benefits to manufacturers seeking to enhance productivity, efficiency and profitability. As a result of the new partnership, 1st MTA is able to offer local expertise and consultation to users, as well as installation services and ongoing after-sales support, all designed to maximise the performance and longevity of Breuning IRCO automation systems.

The modular design of the products allows for fully customised solutions that fit the individual requirements of the customer. Irrespective of material size, shape, length or diameter, the systems adapt seamlessly to a manufacturing operation and offer a high level of flexibility. The loading and unloading systems for handling individual billets and workpieces have compact footprints to fit into tight production environments, allowing customers to maximise the use of floor space.

Notable is the advanced vibration damping built into the barfeeds, which improves the reliability of feed and positioning, as well as machining stability, especially when turning



long or heavy bars, or indeed any bar at high speed. Accurate alignment of stock with the machine tool and precise synchronisation of barfeed and machine ensures smooth operation, efficient production and superior process control. Feeding of stock is consistent, resulting in high quality components, few machining errors, and minimal scrap and material wastage. Added benefits are that tooling lasts longer, saving cost, and the absence of vibration also extends the operational life of the machine itself.

A wide range of material sizes from 3 mm to 104 mm in diameter can be handled up to 6 m long, optionally 10 m. Many different bar cross sections are compatible with the systems, not only round and hexagonal but also octagonal, square, rectangular and parallelogrammic. A broad spectrum of materials may be processed, from light metals to tough alloys, offering versatility of use across multiple industries and types of production plant, including autonomous production lines and flexible manufacturing systems. Energy-saving features reduce power consumption, contributing to cost-effective and sustainable manufacturing operations.

The build quality of Breuning IRCO products is highly regarded. Robust, durable materials used in their construction are designed to withstand

harsh industrial environments and are engineered to ensure long service life. Likewise, the industrially-hardened components require less frequent maintenance compared with other makes of barfeed, translating into lower operational costs.

One of the key benefits of Breuning IRCO systems is how well they work with existing CNC systems. Intuitive interfaces designed for easy integration with all

variants of machine tool control minimise setup time, simplify maintenance and allow operators to manage the systems with ease, contributing to smooth production workflows and minimal costly downtime.

Whether a customer is purchasing an automation system via a machine tool importer or retrofitting one to existing CNC plant, 1st MTA together with Breuning IRCO will provide a solution tailored to the user's specific requirements. Once in place, it will enhance precision, achieve faster cycle times and higher throughput and streamline production, delivering a powerful route to driving efficiency, reducing costs and improving the overall quality of CNC machining operations.

In conclusion, 1st MTA summarises the benefits of Breuning IRCO automatic bar loading and feeding as well as the workpiece loading and unloading systems. The automation equipment, the quality of which is undisputed, can be integrated seamlessly with virtually any CNC machine tool. Manual intervention is minimised, saving labour cost and minimising the risk of human error. Extended periods of continuous, uninterrupted, unattended running, often around the clock, result in elevated levels of long-term production efficiency, leading to rapid return on investment.

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- Advanced vibration control for precise, consistent bar feeding and precision machining

1ST MTA
Machine Tool Accessories

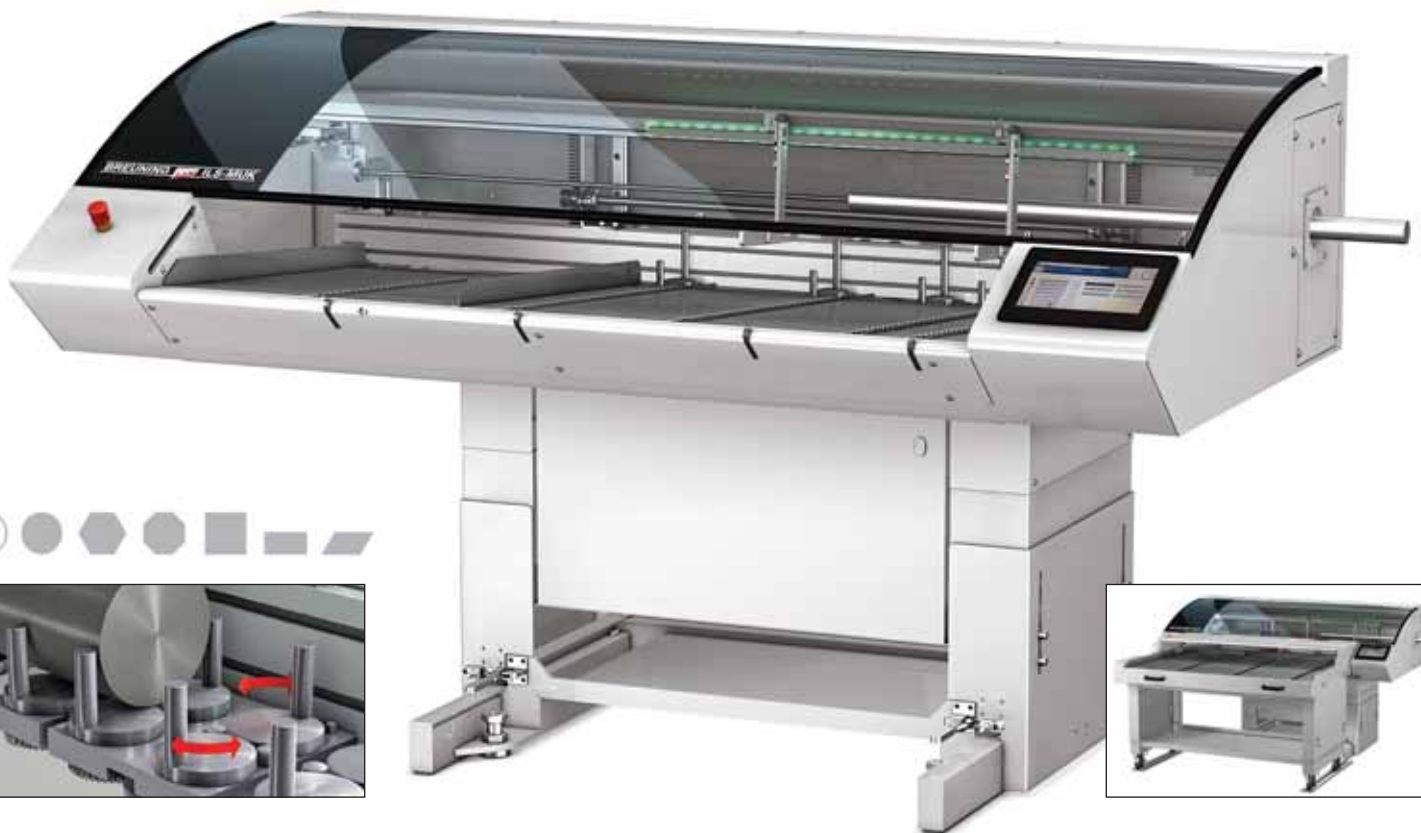
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FANUC's annual automation showcase set to address manufacturing challenges



FANUC's Open House has now firmly cemented itself as an unmissable highlight of the automation calendar, attracting a mix of over 600 manufacturers, robotics experts, academics, students, MPs and press.

Shining a spotlight on the key challenges facing UK manufacturers and the ways in which automation can address them, FANUC UK's annual Open House returns this autumn.

Taking place at the company's UK headquarters in Ansty Park, Coventry on 12-14 November 2024, the event will bring together speakers from global giants such as Airbus, Amazon and Cummins with automation influencers from Make UK, Automate UK and FANUC Europe. In addition to 30+ exhibitors, live robot demonstrations and the live final of the WorldSkills UK Industrial Robotics competitions, visitors can enjoy presentations, panel debates and discussions from over 20 automation experts on such hot topics as the current state of UK manufacturing, how to attract young people into manufacturing, and the adoption of robotics into SMEs.

Hands-on robot experiences

FANUC's Open House has now firmly cemented itself as an unmissable highlight of the automation calendar, attracting a mix of over 600 manufacturers, robotics experts, academics, students, MPs and press.

Each morning is focused on speaker presentations and panel debates, while the afternoon sessions are devoted to hands-on robotics experiences. Visitors are encouraged to take part in FANUC Academy taster sessions, enjoy live demonstrations of the latest automation innovations, network with peers, seek solutions from FANUC's exhibitor partners and support the talented young people competing in the WorldSkills UK finals.

In-depth presentations: Airbus' automation journey

Reflecting the key challenges facing today's manufacturers, each day has a distinct theme:

Day 1 (Tues 12 Nov): Enabling step change for automation adoption

Following the opening address by managing director Tom Bouchier, Marco Chacin of Airbus will take to the floor with FANUC's Oliver Selby to discuss the aerospace company's automation journey in conjunction with FANUC.

Further sessions will focus on 'Successes and challenges of global automation', 'The current state of UK manufacturing and the future for the sector', plus a panel debate focusing on an SME stakeholder's perspective, featuring speakers from Cummins and Hennik Research.

Day 2 (Weds 13 Nov): Education for automation adoption

Highlighting the importance of inspiring and supporting the next generation of manufacturers, Day 2 will feature presentations from current Amazon apprentices, Rosa Wells of University College Birmingham and the 2023 winners of the WorldSkills UK industrial robotics competition.

A panel debate with insight from automation influencer Mike Wilson and other UK Automation Forum members will also discuss what needs to be done to attract more young people into manufacturing.

Day 3 (Thurs 14 Nov): UK automation 2030

The final day of the Open House will begin with an address from FANUC's European president, Marco Ghirardello. Chris Corkan of Make UK will then consider the 'State of the nation: UK manufacturing', before Automate UK's Peter Williamson discusses 'Changing culture and policy to drive greater robot adoption in the UK'.

The event's seminar programme will close with a panel debate by the West Midlands Robotics Cluster featuring Mike Wilson, Tom Bouchier and Rachael Eade MBE discussing ways to increase the adoption of robotics into SMEs.

Inspirational young talent

"After the success of last year's event, which attracted a record number of visitors, I am even more excited to open our doors this November



The event will bring together speakers and over 30+ exhibitors. Visitors can seek solutions from FANUC's exhibitor partners and support the talented young people competing in the WorldSkills UK finals.



Visitors are encouraged to enjoy live demonstrations of the latest automation innovations and take part in FANUC Academy taster sessions.

and show the manufacturing community just what automation can do for their business," says FANUC's UK managing director, Tom Bouchier.

"From alleviating labour challenges and increasing productivity to improving sustainability credentials, there are so many ways in which automation can empower British manufacturers to future-proof their enterprises and ensure that as a nation, we can continue to compete on the world stage. Encouraging young people into the industry is essential to this vision and the array of burgeoning manufacturing talent on display at the Open House will be an inspiration to many. I look forward to welcoming visitors to our Coventry HQ this November."

To register your interest in attending the FANUC UK Annual Open House go to:
<https://ukopenhouse.fanuc.eu>

FANUC UK Ltd
Tel: 024 76 05 3000
Email: sales@fanuc.co.uk
www.fanuc.eu/uk

Robotic handling of randomly-stored steel bar and tube

German sawing machine and storage system manufacturer Kasto has introduced an automated magnetic handling system for long stock, enabling steel stockholders to speed and simplify order picking. KASTOpick bar is available in the UK and Ireland through the group's subsidiary in Milton Keynes, Kasto Ltd, which will supply the equipment with newly purchased storage and retrieval systems or retrofit it within existing warehouse operations.

Automatically handling long stock that has been placed randomly in a cassette is challenging, as the position of each item is difficult to predict. KASTOpick bar incorporates a pair of robots that allows users to autonomously pick magnetic bright drawn or black steel material of flat, square or round cross section, both bar and tube, lying in any orientation.

There is no need for users to teach-in the robot movements. To start the process, the system deploys an optical sensor to scan the storage cassette, which can be up to six metres in length. An algorithm developed by Kasto processes the 3D point cloud generated by the scan.

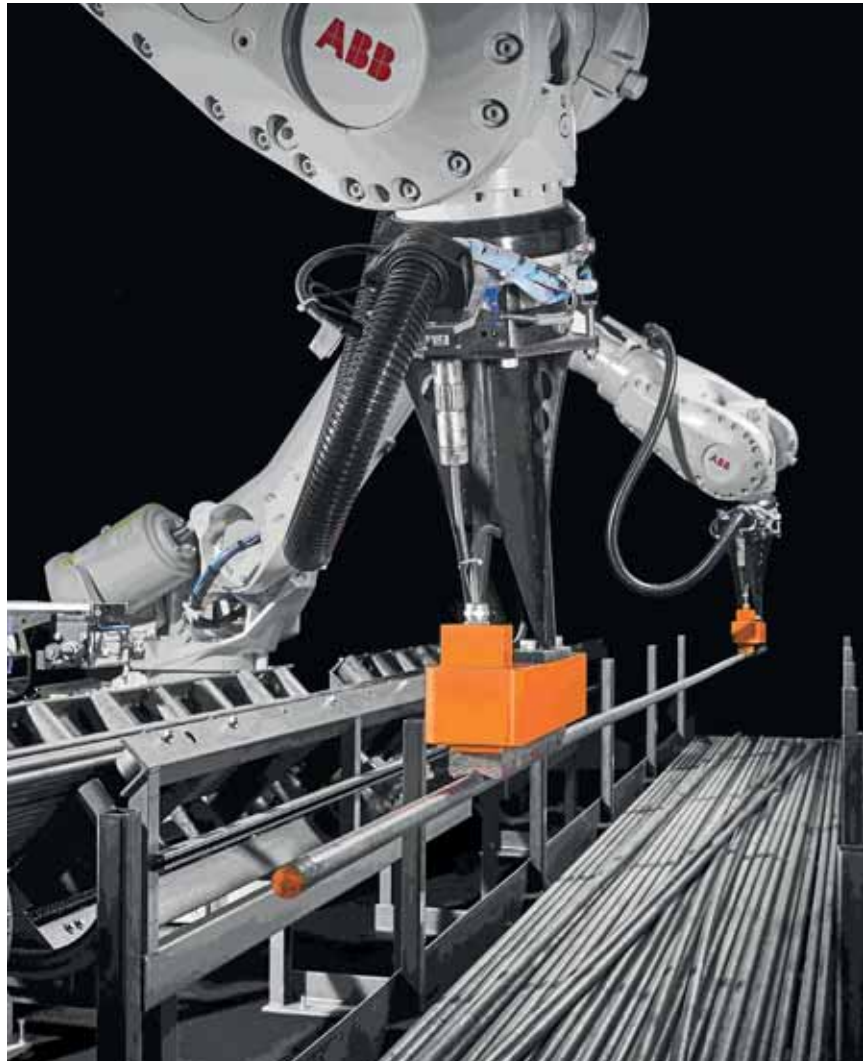
Intelligent software analyses the data to identify the location of each stock item as well as potential gripping points for the robots. Points are only considered if they allow stock to be picked up and deposited without collision. The software then optimises movement to the target position, after which the process starts anew with the next scan.

The handling system communicates with the stockholder's enterprise resource planning system to provide the right material at the right time and location if on-site processing is required, such as cutting to length by a saw. The software also directs placement of material to ensure that it is stacked in an ideal pattern for bundling and strapping, based on material dimensions and order volume.

In its standard version, KASTOpick bar handles loads up to 500 kg, although systems capable of lifting heavier loads may be supplied on request. A range of grippers is available to provide customised solutions to suit the shape and size of the items to be moved. The system automatically selects the ideal magnetic gripper for each task to ensure material is transported carefully and safely, so high-mix, low-volume requirements are as easily addressed as those involving large volumes.

With its intuitive interface, KASTOpick bar is easy and efficient for operators to use without extensive training or specialised technical knowledge. The advantages of the automated solution are many. Warehouse staff no longer have to remove and transport heavy and cumbersome material by hand or crane. Companies therefore minimise physical demands on employees, preventing injuries and accidents. Labour can be used more efficiently in the workplace, lowering operating costs and speeding added-value processing and deliveries.

The compact system joins existing KASTOpick handling solutions. KASTOpick select supports manual picking by crane. KASTOpick sheet is able to separate sheet material that is accurately stacked on load carriers. KASTOpick split separates bars of larger cross section that have been placed neatly next to and on top of each other. This system is not suitable for dealing with random stock orientation, however, so KASTOpick bar has been introduced to fulfil this requirement.



The new, twin-robot KASTOpick bar system for automatically picking up randomly-placed magnetic steel long stock and stacking it neatly for subsequent added-value processing or for bundling ready for delivery to customers.

KASTO is a worldwide partner for sawing and storing of metal bar stock and sheet metal. It has a vast product range and offers planning, design, software development, project work, execution, service and support from a single source.

Whoever wants to achieve more, must do more. Risk more, Invest more and integrate more performance. Think outside the box. This is the reason KASTO develops comprehensive machines and systems with interlocking components for metal sawing and storage technology. Perfectly complemented by industry and customer-oriented services. Complete solutions provide profitability and competitiveness to ensure investment security. This means more advantages for all users.

KASTO Ltd
Tel: 01908 571590
Email: sales@uk.kasto.com
www.kasto.com

Powerful milling with built in sustainability

ProACT-Mill from CERATIZIT, manufactured from 99 percent reprocessed carbide

A milling cutter which is extremely powerful, universally applicable and at the same time manufactured in a resource-efficient manner. Sounds unlikely? With the ProACT-Mill UNI and ProACT-Mill UNImax from CERATIZIT, a tool series is now available that easily meets every requirement. It's all thanks to the latest geometry and coating technologies combined with the carbide grade CT-GS20Y, which offers unbeatable sustainability.

Machining a wide variety of materials means constantly adapting to new challenges. The solution takes the form of universal milling cutters that can cope with steels, stainless steels and cast materials in equal measure. Alongside the targeted process efficiency, the aspect of sustainability is increasingly growing in importance. CERATIZIT shows how the two objectives can be reconciled with the ProACT-Mill universal solid carbide milling cutter series. The milling cutters are manufactured from a particularly sustainable carbide, which CERATIZIT calls upGRADE.

Full performance from 99 percent reprocessed raw material

The upGRADE CT-GS20Y grade is the ideal choice for a wide range of applications.

"What's special about it is the significantly smaller carbon footprint generated during production, compared to carbides from conventional production. We achieve this by using 99 percent reprocessed cutting tools as a raw material," explains Michael Wucher, global technical product manager at CERATIZIT.

Customers enjoy both economic and ecological advantages, thanks to a specific Product Carbon Footprint (PCF).

The test results of the new series underline its potential: ProACT-Mill milling cutters deliver up to 30 percent higher performance compared to



other universal tools. The newly developed coating, which brings with it additional performance and tool life reserves, further contributes to this.

The new ProACT-Mill UNI and UNImax power milling cutters

"With the ProACT-Mill Series, we've developed our most powerful tool for universal milling, packed with everything that modern milling cutters need including CT-GS20Y, our most sustainable carbide grade to date," says Michael Wucher, global technical product manager at CERATIZIT. The variable helix pitch ensures extremely quiet running and optimum chip removal. The ProACT-Mill UNI has an HB shank for perfect force transmission, while the reinforced tool core ensures even force distribution throughout the milling process.

To guarantee unbeatable cutting-edge stability, the milling cutter has been given a radial clearance face. The face finishing chamfer promises top surface quality with base machining, while cutting edges with an irregular pitch specifically suppress vibrations. Ramping milling and helical milling are possible up to an angle of 30°. Thanks to the impressive milling acoustics of the ProACT-Mill UNI, even with high infeed values and full-face milling, the machine room is never too noisy.

The ProACT-Mill UNI with a cutting-edge length of 3xDC is particularly suitable for series production and trochoidal machining. Innovative chip breakers in a radial design deliver the longest possible tool life and break the chips to a length of 1xD; these are then evenly and consistently removed due to the special shape of the chip space. Thanks to the

minimal conical tool core, the 5-edge cutter runs very quietly even with a high lateral width of cut.

When it comes to maximum material removal rates, the ProACT-Mill UNImax is the ideal solution. A special geometry design has been selected for this purpose and is perfectly suited for depths of cut of up to 2xDC. The tool is available with HA and HB shanks for unbeatable force transmission and balance qualities. With the variable tool core, optimum force distribution was the key focus.

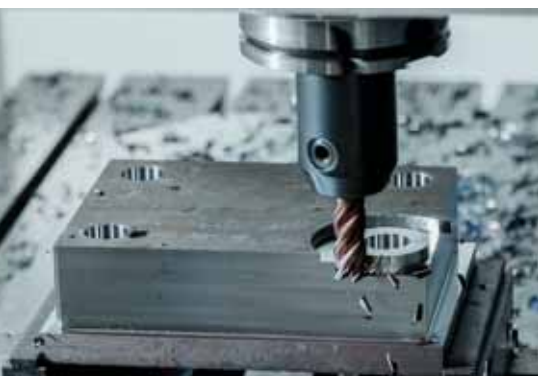
Data Matrix Code has all the details

All tools in the series bear a laser-applied Data Matrix Code (DMC), which can be used to call up the data of the "digital twin".

"This DMC contains all the information needed. Once scanned, the tool can be correctly identified and its relevant technical data displayed. The customer can also see whether the tool is new or reconditioned and how often it has already been sent to CERATIZIT for regrinding. There is of course also a link to the online shop to make reordering quick and easy. We'll be expanding the DMC functions in the future to deliver an even more comprehensive service," Michael Wucher concludes.

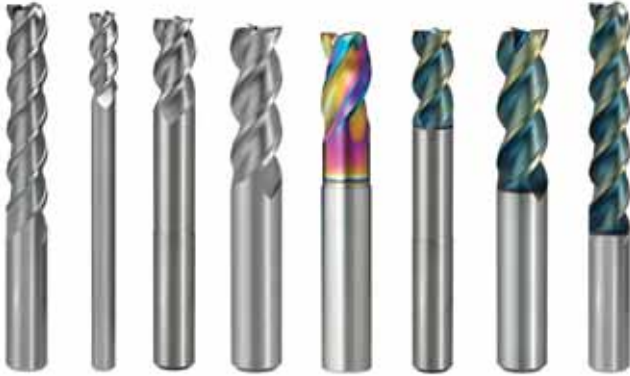


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Tel: 0800 073 2073
Email: info.uk@ceratizit.com
www.ceratizit.com



Additions to the Alimaster range

Mitsubishi Materials renowned range of solid carbide end mills includes the Alimaster series, designed specifically for ultra-high efficiency milling of aluminium alloys.



The latest additions to the series are two and three flute square corner types. With a medium cut length, the new C2MAL and C3MAL together with the DLC coated types of the same geometry provide the ideal end mill for standard depth applications. Also new is a three flute extra-long cut length in coated and uncoated varieties for extra deep pocketing and shoulder milling. The new additions are completed with a standard cut length of flute but with an extra-long shank. Both types are available uncoated and also with the DLC coating.

Development of the whole Alimaster range has progressed by optimising the micro grain carbide substrate together with the latest ideas in flute and cutting-edge geometry. The combination of these features has been proven over time and has enabled Alimaster to gain an advantage in today's ultra-competitive aluminium alloy material machining market. Some of the range now comes with a new and technologically advanced, eye-catching, DLC coating.

The DLC coating provides the ultimate welding resistance during high-speed machining and is especially effective when the coolant supply is reduced. Additionally, the low coefficient of friction reduces cutting resistance in all modes of cutting and helps to provide smooth chip evacuation to prevent the common problem of flute clogging when machining aluminium alloys at high feeds and speeds.

Optimum end and flute geometry

Alimaster end mills feature irregular helix and polished flutes. The irregular flute geometry suppresses chatter to enable excellent surface finishes and the highly polished flute surfaces prevent built up edge and aids chip evacuation during full width cutting and plunging. In addition, the centre cutting edges have been optimised to provide extra strength and reliability even during plunging.

To complete the innovative range of features on all of the new types, a smooth radius geometry is formed at the exit of the flutes that prevents tool overlap marks on the workpiece after deep wall machining.

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Tiny turning offers for massive results

Tungaloy-NTK UK is giving the small turned parts industry a 'shot-in-the-arm' with a multitude of irresistible offers on its latest range of advanced turning technologies. As part of its 2024 promotional offering, the company has a number of special offers that range across the company's expansive range of small-part turning, high-feed milling and indexable drilling lines.

As a leading manufacturer of cutting tool innovations for the small turned parts sector, Tungaloy-NTK UK has a series of enticing offers on its most popular lines with the DuoForceCut, MiniV-LockGroove, FaceMiniCut and the TinyInternalCut among the insatiable autumn promotions.

Designed for CNC sliding head turning centres and cam-driven lathes, the DuoForceCut is an innovative range that is ideal for turning parts up to 12 mm in diameter. With the ability to undertake parting-off, front and back turning, threading and grooving, the DuoForceCut can immediately reduce tooling inventory and maximise machining performance. As part of the 2024 promotional offer, Tungaloy-NTK UK is giving away a free toolholder when customers buy 10 inserts.

The toolholders are available in shank sizes from 6 by 6 mm to 10 by 10 mm to fit all compact turning centres and their common tool platten types and configurations. Furthermore, the free toolholder has a rigid and ground insert seat with an optimised clamping screw design that minimises movement, improves repeatability and creates a stable environment for high-quality precision machining while protecting unused cutting edges during



The impressive MiniV Lock Groove from Tungaloy-NTK UK.

machining. The DuoForceCut is applicable for a wide range of applications with insert geometries and grades available for parting-off, front turning, back turning, threading and grooving with insert groove widths from 0.5 to 1 mm. Perfect for machining everything from low carbon steel to alloy steel, stainless, aluminium and copper alloys, titanium and superalloys with remarkable performance levels, isn't it time you tried this exceptional offer?

For machining intricate and detailed work, Tungaloy-NTK UK has introduced its MiniV-LockGroove range of high-precision grooving and threading tools. Perfect for sliding head and CNC turning centres, the MiniV-LockGroove delivers astounding performance in both grooving and threading

with exceptional accuracy and reliability. This performance is credited to a V-shaped insert pocket that securely clamps the insert whilst providing maximum machining clearance. With a secure V-shaped insert seat and high pressure through coolant nozzles directed to both the rake and face cutting edges, swarf evacuation, insert life and machining performance are all significantly improved.

With slim shank toolholders available from 8 by 8 mm to 12 by 12 mm, the MiniV-LockGroove is available as a toolholder with interchangeable inserts or as a modular head system with the corresponding ModuMini-Turn heads and shanks. Like the DuoForceCut, Tungaloy-NTK UK offers a vast selection of VGP insert grades for grooving and VGT inserts for threading applications in steel and stainless. If you would like to have the confidence to run lights-out machining with exceptional productivity rates and astounding tool life, Tungaloy-NTK UK is offering manufacturers the opportunity to buy a pack of 10 inserts and get a free toolholder or buy 10 inserts and get one CHP toolholder or CHP head with an additional 50 percent discount.

Complementing the MiniV-LockGroove tools is the FaceMiniCut, the new benchmark in deep face grooving. Specifically developed for deep grooving applications, the FaceMiniCut can groove up to 10 mm DAXN and 9 mm deep. The impressive machining parameters are the combined result of an extremely rigid insert clamping system, inserts with a sharp cutting edge and optimised geometry with a 'chip redirector' and an advanced SH7025 PVD grade.

Providing unsurpassed levels of stability and



The new Duo Force Cut from Tungaloy-NTK UK.

precision with exceptional tool life and surface quality, this innovative tool effectively removes chips with its through coolant system and chip redirector that prevents bird nesting and ensures a clean cutting area by rapidly removing swarf from the cutting area. The result is prolonged unmanned operation with the confidence that the machine can be left unattended to maximise your profitability. To maximise your profitability even further, Tungaloy-NTK UK is now giving machine shops the opportunity to try this exciting new system with an offer to buy 10 inserts and receive a corresponding toolholder free of charge. Make sure you take advantage of this limited-time offer now.



The Tungaloy TinyInternalCut system.

Completing the seasonal offer on small turning tools is the 'ultimate' series for internal grooving and thread turning in bores down to 5 mm diameter: the TinyInternalCut. With a truly unique clamping system, the TinyInternalCut is available with a steel or carbide tool body for maximum rigidity and three insert geometries: the MGR for grooving, the MGR with full radius for profiling and undercutting as well as the MTR for threading.

Precisely secured to the through coolant toolholder via a 3-point precision clamping

system, the three distinct insert geometries make the TinyInternalCut a versatile option for manufacturers. With the latest SH7025 PVD insert grade, the TinyInternalCut guarantees superior surface quality and process security, making it the ideal choice for internal machining small-diameter bores. With a quick-change insert system, the TinyInternalCut is perfect for the modern sliding head machine shop and small turned part manufacturer. If you want to

witness how this remarkable product can revolutionise your turning, you can buy a pack of 10 inserts and get a corresponding toolholder free of charge, but hurry as this offer ends soon.

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Lightweight angle heads enhance versatility

Industrial Tooling Corporation (ITC) has now introduced two new lightweight angle heads from BIG KAISER. One is a small bore version suitable for tools with a diameter from 0.25 to 6 mm and the second head has been optimised for high torque tapping. The new models complement the existing devices that are tailored to general machining applications.

Incorporating a BIG KAISER angle head from ITC allows UK manufacturers to extend their existing machine's capabilities without the cost of new equipment. These heads facilitate vertical, horizontal and angular operations without the need to reposition the workpiece, thus increasing accuracy and productivity. This enhancement not only saves machining time but also accelerates production workflows.

Weighing less than 2 kg, the new angle heads are part of BIG KAISER's compact series that is exclusively available in the UK from ITC. Their reduced weight makes them compatible with the Automatic Tool Changers (ATC) of small dynamic machines, such as those from FANUC and Brother, thereby making the machines even more versatile. The lighter weight also enables the ATC to operate more swiftly, reducing tool change times and shortening overall cycle times. This results in significantly enhanced productivity whilst placing less stress on the machine spindle.

Designed specifically for BBT30 machine spindles, the new angle heads include a high-precision BBT30 interface. The lineup includes three variants that are tailored for



general machining, high torque tapping and small bore applications.

Giampaolo Roccatello, chief sales & marketing officer for BIG KAISER Europe says: "These latest models expand the range of angle heads to offer greater choice and flexibility for customers. For instance, Brother CNC machines, which are frequently used in mass-production of small components like valves and mechanical parts, benefit significantly from the reduced weight. This results in improved productivity, speed and shorter cycle times."

The angle heads feature a compact design that minimises overhang, enhancing both rigidity and strength. An advanced non-contact seal offers superior protection against coolant and particulate contamination compared to

traditional sealing methods. Additionally, a unique coolant jacket effectively directs coolant to the cutting edge while cooling the angle head, which helps to reduce noise and vibration.

Crafted from high-quality components including hardened and ground chrome-nickel steel spiral bevel gears, super precision hardened and ground spindles and high-precision angular contact ball bearings, the lightweight angle heads are available for order from your local ITC representative.

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rose plastic ErgoLine cases are now available made from 100 percent recycled plastic

If you are looking for functionality and aesthetically attractive plastic cases to protect sensitive equipment and instrumentation, rose plastic has the solution with the RoseCase ErgoLine. The ErgoLine is extremely adaptable to specific product requirements and it can be configured to your exact needs. The ErgoLine range is also available in Bio HDPE and PCR (Post-Consumer Recycled) material.

From a functional perspective, the ErgoLine is available in a vast range of standard sizes with bespoke solutions available. To ensure unparalleled protection for your products and instruments, the ErgoLine is manufactured from a robust, hardwearing Polypropylene with the option of plain, convoluted or custom-made foam inserts.

The RoseCase ErgoLine combines functionality with fashion, incorporating modern design while offering customers a complete range of colour combinations, interior designs, polished or textured surfaces, ergonomic handles with 'soft-touch' options, concealed hinges and sturdy feet and a selection of lids and bases that can be custom printed with logos. If you want to combine functional user-friendly design with attractive aesthetics, the ErgoLine protective cases are the solution for your business.

Would you like more information? rose plastic can post out its catalogue or send you the information on email or you can call the team on 01709 721794.

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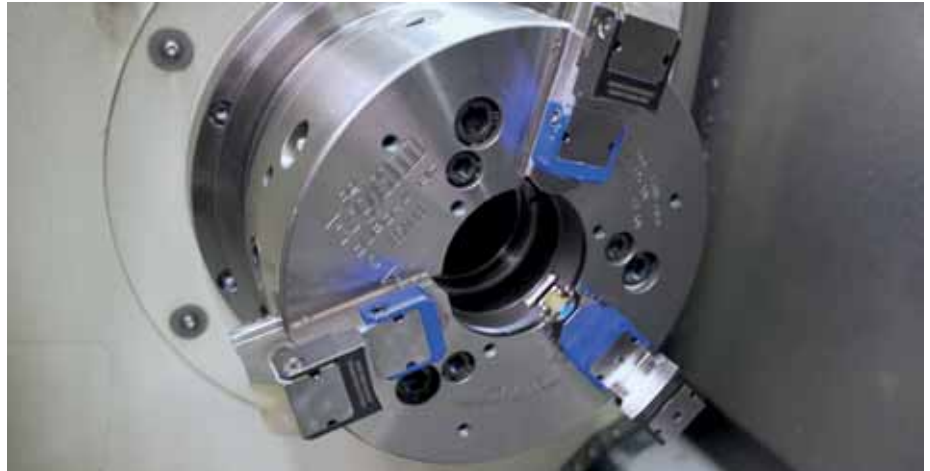
Higher machine availability, lower part costs, greater safety during machining and comprehensive documentation of measurement data. The new sensorised iJaw clamping jaw from Röhme has all these benefits. The specialist for precision tools, Hellmerich Precision Components (HPC), in Seeboden on Lake Millstatt in Carinthia, Austria, has confirmed that the iJaw fulfils the promises made by clamping and gripping specialist Röhme in practice.

At Hellmerich, the new iJaw from Röhme is part of the original equipment of the new CTX beta 1250 TC complete turning and milling machining centre from DMG MORI. "Initially, I was very skeptical as to whether the clamping force could actually be measured, documented and monitored in real-time as described," says Manuel Pleschberger, production manager at HPC. In the meantime, he and his team are not only convinced, but delighted.

Manuel Pleschberger explains: "Thanks to the iJaw, we can clamp and produce with absolute process reliability. We have been able to drastically reduce rejects in production, in some cases by up to ten percent and the reworking of the workpieces that was often necessary in the past is now largely a thing of the past. In addition to process reliability, this also increases our productivity."

High-precision components for machine tools

Hellmerich Precision Components manufactures high-precision components in Seeboden, such as multi-spindle heads, disc and crown turrets as well as many other types of



special machining units, tool changing systems and driven tools for machine tools, which are used in high-end production lines in the automotive industry, among others.

Hazardous deformation averted

"The biggest challenges we face in production are with very thin-walled components. Up to now, we have not been able to track the clamping pressure here. This is now possible with the iJaw. This means we can always work with a clearly defined clamping pressure. This is a great advantage, especially for follow-up orders, because thanks to the iJaw we have absolute process reliability in the production process from the very first component and do not run the risk of a workpiece becoming deformed," says Manuel Pleschberger.

No more reworking

Productivity has also increased at HPC thanks to

the smart clamping jaw from Röhme. With components made of soft aluminum material, Manuel Pleschberger and his team had problems with clamping marks on the components. "This is no longer the case with the iJaw, as we can work precisely with a defined clamping pressure. This also saves us this reworking," says the production manager.

Game-changer in metalworking

Gerhard Glanz, CEO of Röhme GmbH, is delighted with the positive feedback from the customer: "The aim of us and our development partners such as DMG MORI is to provide professionals with the best tools for their demanding metalworking tasks. As the example at HPC in Seeboden shows, the iJaw with its sensor technology is the game changer in production."

This is how the iJaw works: The forces introduced are detected by an integrated sensor and the data is processed accordingly. The iJaw measures not only the actually applied forces of the internal and external clamping but also its own temperature. The charging status of the battery is also always displayed. In addition to displaying the clamping pressure data, Manuel Pleschberger and his team can also monitor the efficiency of the power chuck. The iJaw measures in real-time during machining. For this purpose, it has a suitably robust hardened steel and waterproof (IP 68) design.

Röhme GmbH specialises in the development, design and manufacture of high-precision, robust and durable clamping and gripping devices. The products are "Made in Germany." Röhme's clamping and gripping devices are used worldwide by almost all renowned



manufacturers in the automotive industry, railroad technology, watches, medical technology, power engineering as well as in woodworking. Röhms also manufactures special clamping devices and handling equipment for use in cleanrooms in accordance with cleanroom class ISO 7.

Röhms has its own subsidiaries in France, Italy, Switzerland, Spain, Poland, the UK, the USA, China and Mexico. Founded in 1909, the company quickly became known worldwide for its drill chucks. To this day, Röhms develops and manufactures drill chucks at the Sontheim location that are used worldwide by almost all manufacturers on stationary as well as hand-operated electric tools for screwing and drilling.

The new Pro versions of the Röhms live centres

With its new Pro lines HP Pro and HVLP Pro, the clamping and gripping specialist offers its live centres in precision design. With a concentricity of 0.003 mm, the new HP Pro and HVLP Pro live centres from Röhms set standards when it comes to the precise counter-clamping of workpieces on lathes and grinding machines. The live centres of the HVLP Pro series are equipped



with an extended centre point. This enables better tool accessibility thanks to a smaller interfering contour and therefore more space between the centre point and the workpiece. Each of these live centres is carefully checked for concentricity on the test bench after assembly.

"Our live centres with the blue ring have always been the benchmark for precision and durability in efficient workpiece machining. I am therefore pleased that we can take this precision to the extreme, so to speak, with the Pro lines," says Gerhard Glanz, CEO of Röhms GmbH.

High stability and accuracy

Like all Röhms live centres, the Pro line centres also have triple bearings. They have been

specially developed to absorb high axial and radial forces. This feature makes them the ideal choice for particularly demanding machining operations where the focus is on stability and reliability. Thanks to the lifetime lubrication, Röhms live centres are maintenance-free.

"Many lathe operators and machining specialists know this: Röhms live centres are not only highly precise, but also very durable. It's great that we can now offer precision centres with the Pro versions," says Gerhard Glanz.

The HP Pro with classic Röhms live centre, angle 60 degrees, is available in MK 2, size 102, to MK 6, size 114, the HVLP Pro variant with extended centre point is available in MK 3, size 106, to MK 6, size 114.

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Thame Workholding expands product range with high-quality magnetic solutions from Flaig Magnetsysteme

Thame Workholding is excited to announce a new partnership with Flaig Magnetsysteme GmbH & Co KG, a well-regarded German manufacturer specialising in magnetic workholding technology. This collaboration, which began in October, sees Thame Workholding expanding its extensive portfolio to offer Flaig's premium magnetic solutions, emphasising their FXL electro-permanent magnetic clamping systems and FX lifting magnets.

This partnership allows Thame Workholding to diversify its product offering further, giving manufacturers access to top-quality magnetic workholding solutions that enhance precision and streamline processes. Flaig's magnetic products, known for their reliability and ease of use, offer a dependable option for modern production environments, ensuring safety and performance across a variety of machining applications.

FXL electro-permanent magnetic clamping systems for safety, power and precision

Flaig's FXL electro-permanent magnetic clamping systems are designed to deliver powerful holding force while maintaining the highest standards of safety. The FXL system blends the strengths of both electromagnets and permanent magnets, requiring power only to switch on or off, while maintaining its hold even in the event of a power failure. This makes it an ideal solution for high-precision machining tasks where reliability is crucial.

Whether for milling, grinding, or other high-accuracy operations, the FXL system reduces setup times, speeds up workflows and offers consistent performance. Available in

multiple sizes and configurations, it provides manufacturers with flexibility, fitting seamlessly into various setups. Flaig's FXL magnetic clamping systems are not only reliable but also simplify complex workholding tasks, allowing businesses to improve efficiency with confidence.

Optimising material handling with FX lifting magnets

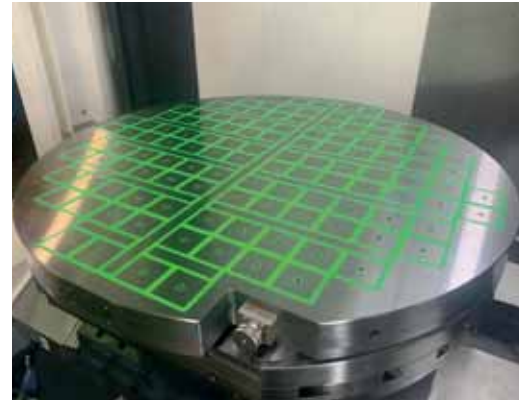
Alongside the FXL clamping systems, Thame Workholding is introducing Flaig's FX lifting magnets. These advanced lifting systems provide manufacturers with a safe and efficient solution for handling heavy ferromagnetic materials, such as steel plates and blocks. The FX lifting magnets deliver secure, stable control, reducing the need for traditional lifting tools like slings and hooks.

Flaig's FX lifting magnets are designed to ensure safer, faster and more productive material handling, particularly in environments where bulky or awkward items must be moved regularly. By reducing the complexity of lifting operations and improving stability, these magnets contribute to enhanced productivity and safety in busy production settings.

A strategic partnership for the future

Commenting on the partnership, Marcus Hamlyn, sales director at Thame Workholding, says: "We are thrilled to launch our partnership with Flaig and offer the company's exceptional magnetic workholding solutions to our customers. Magnetic workholding represents a transformative step forward for us, offering innovative solutions that enhance efficiency, precision and safety on the shop floor."

This new partnership represents a strong alignment between Thame Workholding's mission to provide innovative, high-quality workholding solutions and Flaig Magnetsysteme's expertise in delivering reliable magnetic products. Flaig's systems, while not the only magnetic workholding products on the market, are recognised for their superior engineering and quality, making them an ideal addition to Thame's robust product range.



With Flaig's premium magnetic workholding solutions now available through Thame Workholding, manufacturers have even more options to enhance their machining and material handling processes. For more information about the FXL electro-permanent magnetic clamping systems, FX lifting magnets, or any other workholding solutions, get in touch with Thame Workholding today.

Thame Workholding is a leading international provider of workholding solutions, with a history dating back to 1946.

The company, trading as Thame Workholding, operates under the umbrella of Thame Engineering Company (TEC) and has evolved over the years, relocating to its current facility in Buckinghamshire and investing in modern machinery and technology.

With a comprehensive range of chuck jaws and specialised workholding designs, Thame Workholding offers standard products and bespoke design and manufacturing services to meet customers' unique needs.

In addition to its products, the company also represents a range of partner brands, offering a one-stop shop for customers' workholding needs. In 2022, the company changed leadership, with a new team of directors taking the helm, bringing fresh perspectives and expertise to drive the business forward. Building on its expertise in workholding, Thame Workholding has also expanded its portfolio to include automation and robotics solutions, with a dedicated team focused on developing innovative solutions for customers.

Thame Workholding

Tel: 01844 208050

Email: sales@thameworkholding.com

<https://thameworkholding.com>



Electric swing clamps introduced by Roemheld

A new range of electrically actuated swing clamps capable of generating high forces for securing workpieces during machining has been introduced by Roemheld UK. Manufactured by its German parent company alongside established pneumatically actuated variants, the latest clamps are controlled individually or in multiples. The maintenance-free units may be mounted vertically or horizontally and are ideal for automated workholding applications.

Driven by a wear-resistant, brushless, 24V DC motor via a gear and threaded spindle, the device requires only 3 mm of axial lift before the clamping arm swivels. According to the model in use, it rotates by either by 90 or 180 degrees, clockwise or counter-clockwise. Other swing angles may be supplied on request. The electronic control for the motor is built into the swing clamp housing and has its own 24V DC / 100 mA power supply.

Two variants of swing clamp are available, 1833 and 1835, the latter having a higher clamping force. For both models, which are IP67 rated, the force is adjustable and monitored, its maximum value depending on the length of arm

used. It takes approximately three seconds to secure or release a component. Should the power supply fail, there is no loss of clamping pressure.

During unclamping, the arm swings back to its starting position. Should it meet an obstruction while in motion in either direction, the mechanism is protected from overload by the motor instantaneously and automatically switching off.

A video illustrating the operating principle of the electric swing clamps is available to view at:

<https://ws.roemheld.de/en/products/electric-swing-clamps~psnY7PGDROQX>

As a leading manufacturer of workholding products, Roemheld is committed to researching and designing technological innovations that are driven by customer need. It delivers high quality and high accuracy workholding and handling technology solutions to companies throughout the UK. It also supplies hydraulic workholding solutions to a



number of the UK's leading fixture builders. Its diverse product range covers all aspects of workholding.

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ANT Industries reflects on 10 years of using the RONDCOM 65B

As one of the world's leading manufacturers of precision aerospace parts, UK-based ANT Industries has built its reputation on producing components of uncompromising accuracy and quality. With extreme precision key to everything that ANT Industries produces, in 2014 the Warwickshire SME invested in a RONDCOM 65B ultra-high-precision roundness and cylindrical surface measuring machine from Accretech, the industrial metrology and semiconductor equipment specialists.

"The time had come to update our existing roundness and radial form measuring capability," comments Jordan McAllister, manufacturing engineer at ANT Industries. "Having considered various measuring machines, a conversation with one of our aerospace customers led us to look at and ultimately purchase, the RONDCOM 65B. Our customer had been using an Accretech machine for quality assurance at one of its in-house facilities for a number of years and couldn't fault its capabilities.

"As you can imagine, component accuracy and repeatability are critical to our business," adds Jordan McAllister. "Hence, the RONDCOM 65B's ability to identify rotational measurement inaccuracies down to 10 nanometres, $\pm 0.01 \mu\text{m}$, was incredibly reassuring when we were looking to purchase. Additionally, over the years, the machine's considerable throughput capability, thanks to automatic component centring and tilting, a process that typically takes less than 60 seconds, has saved us a vast amount of process time."

Week-in, week-out, ANT Industries' RONDCOM 65B is used to confirm the precise cylindricity, concentricity and run-out of various aerospace components. Parts measured typically comprise engine bearing sleeves of up to 400 mm in diameter with a roundness tolerance of below nine microns. Thanks to a maximum loading diameter of 680 mm, however, the machine is also well-suited to R&D work completed on behalf of the company's extensive customer base, while its class-leading accuracy has removed any need for outside verification of components on even the most demanding of projects. Combined, these attributes, along with the RONDCOM's exceptionally competitive purchase price, have ensured the machine has paid for itself many times over.

The RONDCOM 65B's easy integration with ANT Industries' previous and current CMM systems has also proved a major advantage for the aerospace parts manufacturer, as has the machine's intuitive ACCTee user



interface, where simple, straightforward operations for component measurement through to printing of analysis results, enable instant corrections for cylindricity, straightness and concentricity. Extensive component data storage capabilities also ensure rapid comparison and identification of even the smallest deviations or trends in repeatability.

Often an additional-cost option with metrology equipment, active anti-vibration isolation is standard on all RONDCOM 65B machines. A high-precision, air-bearing spindle of $\pm 0.01 \mu\text{m}$ accuracy ensures wear-free rotation of the measuring turntable. Additionally, Accretech's use of gabbro, a highly dense igneous rock, provides high strength, low thermal conductivity and a low expansion coefficient. Non-magnetic, with minimum age-related deterioration, gabbro is practically maintenance free. These attributes further contribute to the RONDCOM's industry leading accuracy and stability. Gabbro is used in the machine's column, base and measuring arm for consistent, unwavering results.

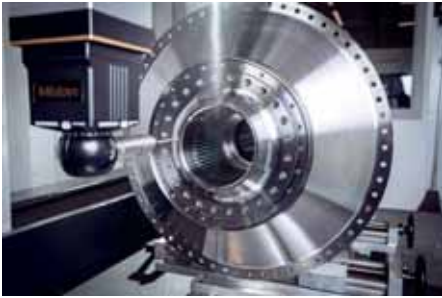
What ANT Industries didn't perhaps anticipate, however, when purchasing its RONDCOM 65B in 2014 was just how consistently reliable it would be. After almost ten years of regular use, the only work required was an adjustment relating to the machine's R-axis. "This was dealt with promptly by Accretech's Coventry-based service and support team," says Jordan McAllister. "Although it wasn't needed, Accretech also offered to fulfil any calibration requirements we might have while the machine was offline. Accretech are always quick to respond, are genuinely interested in supporting our production goals and provide the highest levels of service."

"Although 10 years old and in regular use, ANT Industries' RONDCOM 65B is in first-class condition, delivers class-leading accuracy and shows no signs of age. These are all virtues which are typical of our measuring machines and are directly related to their exacting build quality and future-proofed technology," adds Tim Wood, head of industrial metrology at Accretech Europe. "It is an absolute pleasure to be able to support ANT Industries in the smooth running of their RONDCOM 65B machine and, in doing so, help them maintain the high standards they are renowned for across aerospace manufacturing and MRO."



Accretech-SBS UK Ltd Tel: 024 76 651 774
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Mitutoyo CMM ticks all the boxes for AML



Just as manufacturers look to achieve increased production efficiencies and improved quality levels by investing in the best available machine tools, farsighted businesses are increasingly applying the same criteria to their Coordinate Measuring Machine (CMM) purchases. A major reason for this is, although premium quality machine tools are able to reduce manufacturing times, as components cannot be dispatched and invoiced until they are inspected, it helps that the use of rapid acting CMMs considerably reduce inspection times, while also improving quality standards.

Furthermore, the speed of the latest generation of CMMs allows much quicker feedback to production staff related to

component features that are drifting towards out of specification situations. This rapid feedback enables prompt interventions to be made.

AML is recognised as a leader in the delivery of flexible manufacturing capability at the leading edge of machining technologies and efficiencies. Utilising the very latest technologies, AML manufactures the highest quality precision parts including highly complex gas turbine components, such as blades, shafts, discs, blisks and bearings.

In accordance with AML's policy of regularly investing in its inspection and quality control equipment, the company recently purchased a second advanced CRYSTA-Apex V122010 CMM from Mitutoyo UK.

Mitutoyo's recently launched CRYSTA-Apex V1200, 1600 and 2000 series CMMs were developed for supporting the quality evaluation of volumetric parts and offer users up to 12,8m³ of measuring volume. The robust machines were designed and constructed according to Mitutoyo's extensive experience in CNC CMM technology. The flexible range is able to accept touch trigger probes, scanning probes and both laser and scanning probes.

CRYSTA-Apex CMMs make use of a proven, lightweight bridge-type construction with high rigidity air-bearings on every axis, helping to deliver excellent levels of accuracy in addition to high speed and high acceleration rates. ABS linear scales provide high environmental resistance and save time at start-up as, unlike some other CMMs, homing is not necessary. A UC480 controller supports Multi-sensor and SMS (Smart Measuring System) functionality.

Although CRYSTA-Apex V Series machines are suitable for use within temperature-controlled environment, thanks to their robust construction and features such as an advanced, real-time thermal compensation system, the range is also able to provide high levels of precision when installed close to the point of production, such as with machine tool cells.

The CRYSTA-Apex V122010 variant, as purchased by AML, provides a generous X,Y,Z, capacity of 1,200 x 2,000 x 1,000 mm.

Mitutoyo

Tel: 01264 353123

Email: info@mitutoyo.co.uk

www.mitutoyo.co.uk

Boneham & Turner achieves new levels of accuracy with Baty Venture FV

Boneham & Turner, a leading precision engineering company, has significantly improved its inspection process by investing in the Baty Venture FV 3020 from Bowers Group. Allowing for faster, more accurate batch inspections and maintaining tight tolerances, particularly in the measurement of micro pins, the implementation of the Baty Venture FV has boosted inspection speed while increasing accuracy and repeatability.

Stacy Denton Beaumont, group general manager at Boneham & Turner says: "Many of our customers require parts to very intense specifications. Previously, we could only inspect a maximum batch of 5 micro pins at a time, but with the Baty Venture FV 3020 now we can check significantly larger quantities quickly and reliably, maintaining very tight tolerances. We've experienced higher levels of repeatability, a faster inspection process and overall improvement in the quality of our parts. With the right equipment in place, we've reduced return rates and eliminated repeated inspection errors."

As Boneham & Turner continued to grow and meet the increasingly stringent demands of its clients, the company faced challenges in its inspection processes. A key issue was the difficulty in inspecting micro pins, which could only be measured in batches of up to five. This limitation not only slowed down the workflow but also left room for potential errors during the inspection phase.

Faced with the growing need for higher precision and faster turnaround times, the company identified that inadequate inspection equipment had become a major bottleneck in its operations. This led to recurring errors and compromised both efficiency and consistency, highlighting the need for more reliable measurement solutions to maintain the high-quality standards expected by its clients.

To address these challenges, Boneham & Turner made a strategic investment in a range of high-precision measurement tools from Bowers Group. This included the new Baty Venture FV 3020, an instant, non-contact measuring system designed for precision



inspection, offering fast and accurate measurement of complex components through advanced vision technology.

Introduced to improve in-process checks and final inspections, with a focus on critical components such as dowel pins, drill bushes and shims, the Baty Venture FV 3020 has proven to be highly effective in streamlining Boneham & Turner's batch inspection process.

The Baty Venture FV 3020 is a versatile, fully automated, non-contact measuring system designed for precision inspections.

Bowers Group

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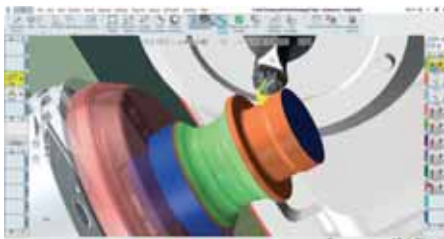
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GibbsCAM 2025 AI features launched in September

GibbsCAM, a leading CAD/CAM innovator in the production machining industry, has announced its latest software release that includes AI.

The latest version was launched in the USA at IMTS in Chicago and in Germany at AMB in Stuttgart. In this new release, GibbsCAM 2025 places a strong upgrade to incorporate cutting-edge turning technologies, equipping clients with AI capabilities and offering convenient access to extensive manufacturing and tooling expertise. GibbsCAM continues to integrate Sandvik's cutting-edge manufacturing and tooling know-how into its development efforts. Giving customers significant improvement in efficiency and productivity, both in engineering and production.



Y-axis Turning enhances stability, chip control, surface finish and cutting speeds.

Unlocking the full potential of turning

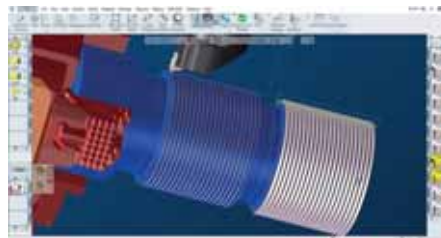
In its latest version 2025, GibbsCAM provides full support for Sandvik's OptiThreading™, further enhancing its CAM solution. GibbsCAM took the first step towards integrating and supporting multiple turning technologies from Sandvik by introducing Sandvik Coromant's PrimeTurning™ technology into GibbsCAM 2023. With the implementation of enhanced Y-axis turning capabilities, simultaneous sweeping, in last year's release, GibbsCAM continued to work towards its goal of becoming the CAM solution of choice for Sandvik Coromant's turning technologies.

With the insert positioned in the Y-Z plane, Y-axis Turning effectively directs the primary cutting forces into the milling spindle, providing exceptional stability. This yields superior chip control, improved surface finish and increased cutting speeds. Furthermore, the inclusion of a third axis for tool rotation allows for optimal positioning of the tool, enabling the cutting of intricate shapes with a single tool. This also enables a seamless "sweeping" motion for cutting complex shapes, preventing any blend

marks and ensuring precise control of the insert wiper effect.

Sandvik Coromant's OptiThreading provides a pioneering thread-turning technology. GibbsCAM's new turning strategy for OptiThreading enables controlled chip breaking to eliminate long stringy chips that can damage a component's surface and interfere with the cutting zone. It is just as suitable for simple threads as it is for cutting complex thread profiles, in high-strength alloys or exotic materials.

Using cutting data from the CoroPlus® Tool Library, OptiThreading enables users to develop optimised thread-turning tool paths that specifically overcome the challenge of chip control with these operations. This is achieved by specialised GibbsCAM tool paths that use controlled, oscillating movements in and out of the cut for interrupted cuts on all passes except the last one. The result is controlled chip control for improved component quality, faster cutting speeds and less manual work by reducing the need to manually clear long chips during the machine run cycle.

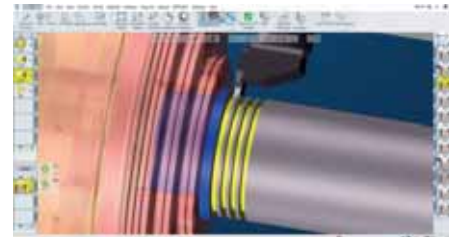


OptiThreading enables controlled chip breaking to eliminate long stringy chips that can damage a component's surface.

For both Y-Turning and OptiThreading GibbsCAM 2025 offers best-in-class programming strategies unlocking the full potential of these fantastic technologies.

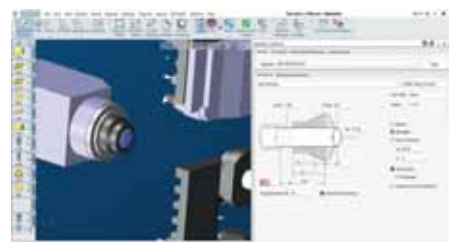
With Rib Cut Plunge, GibbsCAM 2025 offers another powerful new turning strategy. This special turning strategy for roughing reduces tool deflection, improves tool life and guarantees excellent chip control. Within a preliminary operation, the tool repeatedly plunges into the part at full engagement to create a series of cuts with each cut more than a tool-width away from the previous one. The following pass cuts the remaining ribs at a 30-50 percent increase in feed.

As a leading CAM solution for Swiss-type



Rib Cut Plunge strategy improves roughing by starting with a series of cuts that are more than a tool width apart.

machines GibbsCAM 2025 introduces a new option for the headstock origin. This allows the NC programmer to define a value for the distance between the front of the guide bushing and the headstock's 0 position. With that, the correct positioning of simulation bodies on the headstock axis becomes easier. It provides a more intuitive interface in the dynamic coordinate definitions for Swiss-style machines.



The new option for headstock origin makes it easier to position simulation bodies on the headstock axis.

Fast and effective AI support

GibbsCAM's goal is to make manufacturing knowledge more accessible through AI, empowering human creativity at every stage.

The introduction of the GibbsCAM Copilot is part of Sandvik's commitment to embrace AI for the user's benefit. It represents just the start of a longer-term initiative to maximise productivity and profitability by implementing AI technology. Accessible directly from the Online Help menu, GibbsCAM Copilot uses



GibbsCAM Copilot offers rapid 24/7 support for user queries.

Microsoft Azure Open AI on top of a dedicated database, trained by the GibbsCAM team, to offer rapid user support at any time without the need to hunt through documentation or reach out for first-line support.

GibbsCAM 2025 offers a

new plug-in to up2parts autoCAM and makes this powerful tool for automatised NC

programming available for its users. Utilising 3D models with tolerance information, up2parts autoCAM automatically

generates proposals and recommendations for six-sided machining, including clamping, machining steps, operations and tools by using AI technology. This leads to reduced engineering time by automatising the NC programming based on geometry and PMI. GibbsCAM users can upload the information into GibbsCAM, post process immediately, or simulate and edit before if needed.



up2parts for GibbsCAM provides automated AI-driven NC programming.

Comprehensive performance boost throughout GibbsCAM 2025

Visualisation of multi-flow operations

Within its powerful Multi Task Machining solution, GibbsCAM supports the most complex machining centres with an unlimited number of axis and any axis orientation. To always give the user the best view on the defined multi-flow operations, GibbsCAM 2025 provides additional Operation Tile Modes to display multiple flows independent of the MTM Sync Manager. Users can choose to Show All Flows for a comprehensive view, Show Each Flow for focused management, or use Sync Flow Mode to coordinate displays across operations, improving organisation and control of multi-flow processes.

Facet Body Function

Facet bodies can play an essential role in modern CAM workflows, bridging potential gaps between design and manufacturing, and enabling precise and optimised production processes. GibbsCAM 2025 provides users with powerful tools for manipulating facet body models without the need for external CAD software.

The new Facet Body Modelling palette supports a wide range of specific editing functions, including Tessellate, Simplify, Re-facet, Heal and Smoothing of facet bodies. Many existing Solid Modeling functions now support FB such as Booleans, Slice, Separate, Offset/Shell, History, and more. With this new functionality, GibbsCAM users can now easily work with FB models such as parts, machine components, fixtures and In-process Stock Models directly within GibbsCAM.

Simulator enhancements

The Simulator in GibbsCAM 2025 offers enhanced features for superior control and visibility during simulations, ensuring program accuracy. A new stop option allows the simulation to pause before each operation. Additionally, a new scrolling bar in the Sync Manager tracks simulation progress, providing real-time feedback for MTM machining operations. The innovative "Rotary Hint" option graphically displays the spindle direction for both Turning and Milling. To enhance safety, collision detection and alerts are now activated by default.

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On the right track with VISI

As one of the world's leading manufacturers of model railways, PECO is a forward-looking family business that started trading back in 1946. Initially concentrating its manufacturing skills on the production of trackwork for model railway enthusiasts, the company has grown exponentially. To support its expansion, the Devon company relies on VISI CAD/CAM/CAE software from Hexagon in its design and manufacturing facility.

Located on the idyllic South Devon coast, PECO is a company that has expanded from its humble beginnings of manufacturing individual components to producing HO/OO ready-made track and then on to all things 'model railway'. This includes 'Pecorama' one of Devon's leading tourist attractions with a model railway exhibition and model shop, a ride-on miniature steam railway, a gallery and award-winning gardens and leading model railway publications. As a company with a 'fan base' as well as a customer base, PECO is a world-renowned brand in the model rail industry. From the foundations that stem from manufacturing a simple coupling, PECO now runs a facility that makes over 3,000 product lines.

Discussing this, Simon Cockerham from PECO says: "We make everything that is part of the hobby building model railway industry. We have been in business since the 1940s and started as a company making very small couplings that hook two pieces of rolling stock together. It has expanded from there to a business that makes everything from concepts to the final product."

With a manufacturing site that hosts state-of-the-art technology, PECO relies on VISI CAD/CAM/CAE software for its workflows. Simon Cockerham continues: "We use VISI throughout our manufacturing facility, from concept through to the final press or mould tool being created. We have numerous licences of VISI throughout our many departments and we also use VISI to generate laser-cut wooden kits for customers with textures upon them. It is also used to create the instructions that will guide enthusiasts and users on how to assemble the equipment."

"VISI has always been very good for our business as it focuses on just what you need to do the job. Some other software packages that we had before VISI had caused issues due to the high tolerancing of our components and the very deep nature of the machining processes that we have to undertake to achieve the geometries that we require in our press and mould tools."



PECO's Simon with a Hexagon engineer discussing press tooling that has been developed with VISI.

As one of the leading PC-based CAD/CAE/CAM software solutions, VISI incorporates modules such as Modelling, Analysis, Mould Design, Flow, Electrode Design, Die Tool Design, 2.5, 3 and 5-axis Toolpaths, Blanks and Reverse. This provides PECO with the facility to create solid models, design, analyse, validate and prepare mould tool geometries, and perform pre- and post-production analyses of plastic parts. With dedicated modules for creating electrodes, designing dedicated progressive die design and press tools, comprehensive machining strategies and even reverse engineering of editable solid models from scanned data, VISI provides the complete package for the company.

Simon Cockerham adds: "One of the key reasons that we have VISI in our environment and that we have been customers for almost 17 years is because it is very reliable and comprehensive. We have an intimate knowledge of the VISI environment and systems throughout our experienced generations of designers and toolmakers who are here. This means we have the experience to support more junior members of the team here but even we need assistance now and again because every engineer looks at things differently from time to time.

"Another key reason why we use VISI is due to the complexity of our products. We need jobs to be correct the first time. We use very expensive machine tools from Roders, Sodick, and Hurco, as well as high-end peripheral equipment and cutting tools. VISI has always kept us safe throughout the entire process of generating these tools."

The holistic Hexagon mould and die workflow removes blockers so the team can try new ideas. Simon Cockerham explains: "We use VISI throughout most of our departments, especially within the wider 'innovations department'. This



From concept through design and production with VISI.

means we use VISI for everything from design to producing wooden laser-cut kits for the factory to producing custom machinery for our production facilities. We also use VISI for all of our press and mould tooling too. The benefits of having VISI in the workplace are the integration between plot view, CAD/CAM and the ability to create surface translations for mould flow analysis and laser ablation files. It streamlines integration between departments."

Many other features the business needs are all connected within a single environment, which makes PECO's training and application of VISI a lot easier for everybody concerned.

Over the 17 years, PECO has standardised its workflows on Hexagon's mould and die software and positively impacted its business. Simon Cockerham concludes: "We know we have saved a lot of time and money with VISI. The savings are down to the VISI software having all of the components and modules we require to take our products from concept through to production and export all around the world, all from under one roof."

Hexagon is a leader in digital reality solutions, combining sensor, software and autonomous technologies. It is putting data to work to boost efficiency, productivity, quality and safety across industrial, manufacturing, infrastructure, public sector and mobility applications.

Its technologies are shaping production and people related ecosystems to become increasingly connected and autonomous, ensuring a scalable, sustainable future. Hexagon's Manufacturing Intelligence division provides solutions that use data from design and engineering, production and metrology to make manufacturing smarter.

Hexagon Manufacturing Intelligence
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Hybrid CAD modelling for reverse engineering

Tebis is a leader for CAD/CAM/MES technology with vast experience serving customers in many industries. Tebis offer specialist solutions for model, pattern, die and mould making as well as component manufacturing. Tebis also offer advanced hybrid CAD modelling for reverse engineering.

Reverse engineering generates a CAD surface model that precisely represents a scanned object. Reverse engineering is used everywhere where work is performed manually on real objects and a CAD model is required for the subsequent process.

Automatically generate high quality surfaces

Tebis CAD/CAM software automatically generates high quality and high precision surfaces from STL triangle mesh data, combined with conventional wireframe and surface modelling tools. Tebis software also offers advanced reverse engineering tools to automatically segment and create planar surfaces and free-form surfaces on triangle meshes.

Surface design and reverse engineering in a single application

In the same CAD file, the Tebis user analyses and optimises the quality of the digitised data and then creates a wire-frame model and then the surface model is created based on that. Using the practical curve and surface functions, the user supplements the surfaces generated by reverse engineering. Free-form surfaces can be quickly generated using Tebis surface technology and in class-A quality.

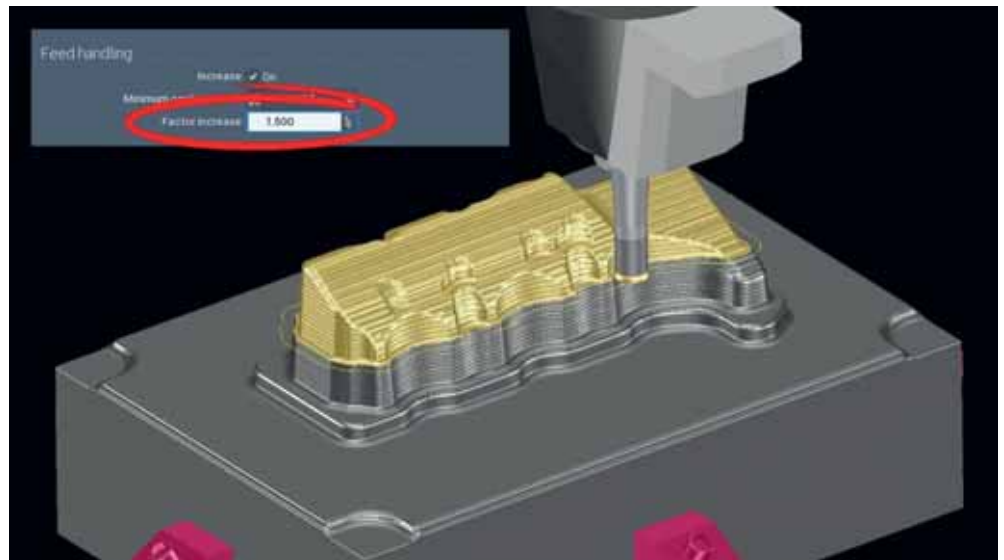
Precisely adjust surface quality in transition areas

High-quality design surfaces require first-class CAD surface quality, especially for defined characteristic lines. Tebis CAD/CAM software enables precise control of the transition areas between two main surfaces or connecting surfaces, natural or trimmed surfaces, in addition to the basic surface approximation settings. The user specifies an area around the edge where the surface approximates the boundary curve rather than the scan data. The change in the CAD surface is immediately visible in Tebis. The affected area can be easily adjusted until the optimal surface quality is achieved.

Tebis AG is a leading global provider of CAD/CAM and MES software. With its high degree of expertise in consulting, implementation and support, it has been implementing highly efficient and safe process solutions for its customers since 1984. Its customers use Tebis solutions to manufacture single parts like models, moulds and dies as well as the highest-quality series parts made of metal or plastic.

Tebis is a privately-owned company headquartered in Planegg near Munich, Germany, with locations in 17 countries. Its 400 employees around the world support customers in the automotive, aerospace and industrial industries. For 40 years, Tebis has delivered process efficiency and technological advantages to manufacturers worldwide.

Its CAD/CAM software lets you quickly, easily and automatically create collision-free NC programs for many manufacturing methods. Designers,



planners and NCC programmers use Tebis CAD modules for manufacturing-related design tasks.

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European debut among Mazak laser innovations at EuroBLECH

At EuroBLECH in October, Yamazaki Mazak gave a European debut to the OPTIPLEX 3015 Ez its latest affordable laser processing machine. This cutting-edge technology offers high-quality laser processing capabilities at a cost-effective price point, making advanced technology more accessible to a wider range of businesses. Mazak came to the exhibition intent on demonstrating its ability to support customers with end-to-end automation, high-power, high accuracy cutting of thick material and how the synergy between the organisation's laser processing and machine tool portfolio can help customers become more productive and more profitable.

With the launch of the OPTIPLEX 3015 Ez, which offers customers a user-friendly experience, affordability and exceptional performance, Yamazaki Mazak continues to demonstrate its commitment to delivering innovative solutions that meet the evolving needs of the manufacturing industry.

Designed for a large variety of materials and thicknesses, the machine offers precision cutting, high mechanical rigidity and unwavering reliability. Intelligent Functions empower users with efficient supportive and preventive measures, minimising setup time to achieve optimised productivity.

The 6 kW machine on display

at EuroBLECH was exhibited as part of a fully integrated manufacturing cell, which takes the workpiece from raw material through to the finished parts.

In addition to the OPTIPLEX Ez, which is equipped with a three-pallet changer to optimise cycle time, the cell comprises a Mazak CST 3015 storage automation system featuring eight shelves: six for the loading of raw materials and two for unloading of remnant sheets. It also features a Mazak SMART MANUFACTURING CELL robot sorting system to separate the finished parts and place them on a pallet ready for the next process.

Each component in the cell is coordinated centrally by the new Smooth Line Controller software. Built into the CNC, the Smooth Line Controller app allows the entire process to be

integrated, from order receipt and program arrival from the CAD/CAM office through to material arrival, cutting, sorting and finished part shipment. The system, which can be used to schedule production, is also able to send critical production data back into the ERP system.

Also on display at EuroBLECH was Mazak's latest fibre laser processing machine, the OPTIPLEX 3015 NEO. The 20 kW variant exhibited at the show belongs to Mazak's NEO series of high-performance machines that excel in delivering exceptional productivity and precision, while also providing best-in-class environmental performance.

The machine's working area allows the processing of workpieces up to 1,525 mm x 3,050 mm through a new 20 kW fibre laser



resonator. Thanks to a high-power laser and a new GRAND CUT technology the machine provides high-accuracy and stable cutting for thick material.

One of the machine's standout features is Mazak's Beam Shaping Technology which, complemented by the Beam Diameter Control in the machine's Multi-Control Torch three cutting head, delivers substantial productivity enhancements and superior cutting quality for sheet metal processing.

By adjusting the beam shape, operators are now able to cut material up to 50 mm with four times more stability compared to conventional cutting. Adjusting the beam shape can also improve the bevel angle by more than 80 percent versus conventional machines, significantly increasing the accuracy of the cut.

Visitors to the Mazak stand can witness the innovative Beam Shaping and GRAND CUT technologies in action and evaluate the quality of Mazak through the demonstration pieces being cut.

The synergy between Mazak's laser and machine tool portfolio can reduce cycle time and tooling costs for end users. This will be demonstrated by the OPTIPLEX 3015 NEO 20 kw and Mazak's new Friction Stir Welding (FSW) machine, through laser processing an aluminum sheet on-stand and passing the cut sample to the machine tool to be friction stir welded.

Purpose-built to overcome the key challenges faced by manufacturers adopting FSW technology to join materials, Mazak has created the heavy-duty and highly rigid FSW-460V with a sizeable 900 mm x 460 mm table that can accommodate loads up to 500 kg. This provides a foundation for the FSW-460V spindle to



reliably and consistently generate a maximum thrust force of 14 kN with a spindle speed of up to 10,000 rpm for high-speed welding.

Gaetano Lo Guzzo, director of laser business Europe at Yamazaki Mazak, says: "EuroBLECH is the pre-eminent laser processing show in Europe and we are excited to once again return with three innovative laser processing solutions

that can help our customers to become more productive and more profitable.

"The OPTIPLEX Ez is the culmination of years of R&D to bring to market an affordable laser machine that is easy to use and maintain without compromising on the quality synonymous with Mazak. Displaying it as part of a turnkey cell that automates the entire process, from raw material to finished parts, shows its true potential for helping customers seamlessly integrate laser processing into their manufacturing operations.

"For more established laser users, the new Beam Shaping and GRAND CUT technologies built into the OPTIPLEX 3015 NEO will enable thicker material to be cut much more accurately, with a higher surface finish.

In turn, this will reduce the amount of post-processing work needed, once again helping operators to increase their productivity and profitability."

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Eggleston Steel returns to TRUMPF

Eggleston Steel, a leading steel stockholder that stocks, processes and supplies a wide range of ferrous and non-ferrous metals, has returned to TRUMPF as its sole provider of CNC laser cutting machines after a brief and unsuccessful foray with another supplier. Since returning, the company has invested around £3 million in a trio of TRUMPF laser cutters, receiving a welcome boost in uptime, quality and speed.

With a reputation among customers for manufacturing excellence and class-leading customer service, Eggleston Steel is a family-owned company with 54 employees who help generate annual turnover in the region of £13 million. Although its core business is

review of the marketplace for laser cutters.

“We began looking at alternative suppliers, whereas with hindsight we should have remained with TRUMPF,” admits John Ready.

Eggleston Steel acquired two flat-bed laser cutters from a European competitor of TRUMPF, with the first machine arriving in 2019. However, from day one the company experienced problems that got progressively worse. John Ready was calling engineers out at least twice a month, costing thousands of pounds in downtime and scrap workpieces. Eggleston Steel deemed the performance of the new laser cutters disappointing and well below expectations.

Eggleston Steel subsequently replaced its two flat-bed laser cutters with TRUMPF TruLaser 3040 and 3060 12kW fibre models, which arrived in December 2023 and January 2024. The company deploys the machines across the entire range of sheet thicknesses, from 2 to 25 mm, on a daily basis.

“The quality and reliability of the machines is absolutely fantastic,” reports John Ready, who adds: “We receive very good customer feedback about our sheet profiling capabilities.”

In total, the ISO9001 and ISO14001 accredited business invested around £3 million in its new TRUMPF machines and has now reinstated TRUMPF as its sole laser supplier. The



general fabrication, Eggleston Steel serves a wide range of sectors that include architecture, construction, yellow goods, rail and aerospace.

To help boost revenue, around 15 years ago the company took a strategic decision to migrate steadily from its stockholding-only business model towards added-value processing, notably profiling.

“We started with a plasma cutter and within three years added our first TRUMPF laser, a new 6kW, 4x2 m CO₂ model, to deliver higher levels of precision,” explains operations director John Ready. “The machine proved hugely successful and it changed our fortunes quite dramatically. We soon introduced a second, pre-owned, TRUMPF laser to support our growth in a busy period that saw us add a night shift, rent a nearby satellite facility and expand our main site.”

Eggleston Steel’s first TRUMPF laser cutter was approaching the company’s five-year replacement policy. However, around the same time, an unforeseen set of circumstances prompted the business to undertake a full

“The harsh realisation dawned upon us that alternative machines do not offer the same levels of reliability that TRUMPF machines provide,” he states. “It was clear we had to rectify the situation and therefore returned to TRUMPF for our next three laser cutters.”

Eggleston Steel started its new investment programme with a TRUMPF TruLaser Tube 7000 tube laser featuring 10 m infeed and 6 m outfeed, the first such model in the UK. Installed during the summer of 2023, the business uses the machine to process 50-120 mm diameter tube/box, with up to 12 mm wall thickness. Although designed as a tube laser, the company also uses the machine cut angle bar, channel sections and non-standard items.

“TRUMPF have been amazing at problem-solving; they find a solution for every application,” says John Ready. “Tube cutting was a new service for us, but since investing in the TruLaser Tube 7000 this activity now represents 10-15 percent of our business. Customers are really impressed with the cut quality.”

company cites machine uptime and quality as the major benefits of this decision, along with speed.

“The TRUMPF machines cut a lot quicker than our previous laser cutters. We had to slow the speed of our previous machines to get a better cut, whereas we can run at optimal speeds with TRUMPF laser cutters. We’re profiling at least four times faster on our core thicknesses of 6-12 mm. With improved cutting speeds and production efficiencies, we roll these benefits out to our customer pricing structures.”

Looking forward, the company aims to standardise on TRUMPF machinery. Like many aspects of business, Eggleston Steel views investment in the latest manufacturing technologies as a means of providing strong foundations for growth.

TRUMPF Ltd
Tel: 01582 725 335
Email: sales@uk.trumpf.com
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Kerf unveils new tech centre with Open House event

As a premier manufacturer of advanced cutting and profiling technology, Kerf Developments recently hosted a hugely successful Open House event at its Rochdale headquarters to celebrate the opening of its new technical and demonstration centre.

This fully refurbished facility is where engineers can investigate the complete range of profile cutting disciplines, including fibre laser, Oxy-fuel, ultraSharp plasma and waterjet cutting solutions. This differentiation between Kerf and its competitors has taken the service to a new level and this was evident at the Open House. Some attendees arrived with a pre-conceived perception of what machine they needed based upon their cutting requirements and workload. However, the expert advice and the ability to offer a full suite of technologies enables Kerf to determine the 'best-fit' solution based on customer requirements.

This technology diversity allows Kerf to deliver the optimal solution for the end user. At the event, Kerf experts demonstrated the full suite of technologies that will be permanently

sited at the Rochdale headquarters for engineers to investigate. The benefits of this are that it gives Kerf the ability to enhance manufacturers' capabilities, diversity, productivity, and efficiency levels while reducing production costs.

The facility's four new machines permanently sited include the exciting new LINC-CUT FIBER 1530A fibre laser system, an Optima 420 waterjet system, the Kerf Ultra Oxy-Fuel machine and the Ultrasharp plasma machine. Introduced to the UK at MACH 2024, the Lincoln Electric LINC-CUT FIBER 1530A fibre laser system has linear guidance, dynamic kinematics, helical drives and rigidity and precision, the industry's benchmark. The LINC-CUT FIBER 1530A is available as a 3 kW, 6 kW or 12 kW machine with a 2 m by 1 m, 3 m by 1.5 m or 4 m by 2 m bed. It incorporates state-of-the-art features such as Flycut, Fast-Cutting, Smooth Microjoint, Frame Border, Circle Centring and Collision Avoidance that will all enhance productivity and cutting speed for the end-user.



The Ultrasharp Plasma machine at the facility has the FineLine 300 Plasma unit from Lincoln Electric that introduces Advanced Piercing Technology and an innovative Watermist system. The FineLine 300HD delivers exceptional cut quality when cutting mild steel, stainless steel and aluminium whilst providing superior cut quality that minimises the need for grinding, edge preparation or other secondary operations.

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AMADA presents wide portfolio of innovative solutions at EuroBLECH

Under the motto “Growing together with our customers”, AMADA once again demonstrated just why it is the perfectly positioned partner to actively shape the future of sheet metal processing for and with its customers. To do this, AMADA presented its wide portfolio of innovative solutions at the 27th EuroBLECH international technology trade fair in Germany.

From laser cutting and stamping, through bending and welding and on to automation solutions, visitors to the live demonstrations and specialist discussions were granted access to a range of in-depth insights. They could be secure in the knowledge that AMADA’s experts always focus on finding the best possible way to help customers achieve their objectives. Whether by combining different technologies or using forward-looking solutions for the digital transformation (DX) and Artificial Intelligence (AI), AMADA is always driven by the vision of exceeding its customers’ production expectations. At the same time, the company does not concentrate only on finding the best possible technological solution, but also focuses on the issue of sustainability and takes account of the imperatives of environmental protection during its development work.

As you would expect from a good partnership, service also plays an important role at AMADA. That is why, at EuroBLECH, the company explained how its European service structure is to be redesigned in order to further



enhance its already high-quality level. What is more, visitors had access to first-hand information about the benefits and synergies that will result with immediate effect from the new Welding Technology Centre in Italy.

AMADA introduces new lasers and features for increased profitability

New versions of AMADA’s ground-breaking laser range were on display at EuroBLECH, incorporating AMADA’s original beam control technologies and Laser Integration System functions for higher autonomy and profitability. Fibre Silky Cut for very high-quality stainless-steel processing and the ultra high-speed small hole processing LBC Flash Cut feature will be combined with new developments for reduced running costs. Simple operation and higher productivity will be enhanced by various automation systems, including storage towers and part picking modules. The class leading EM ZRTE punching machine will also be exhibited, with unrivalled forming possibilities and a

capacity of 300 tools, linked to an intelligent tool grinding system to extend tool life.

Hybrid lineup of servo electric and hydraulic press brakes

Building on the success of the EG bending machine, AMADA has developed a new series of servo-electronic press brakes. These range from ergonomic and standalone benders, available with or without an automatic tool changer, to robotic models. This new range of machines complements the existing HRB hydraulic series,



a well-established product that is perfectly suited to customers’ usual production needs.

Welding range expansion

Offering enhanced customer solutions based on a long history of welding expertise, the AMADA group presented at EuroBlech everything from sheet metal part marking and welding, to resistance welding and weld monitoring. The new midrange FLW3000Le robotic fibre laser welding cell will feature a new setup function for increased throughput. The flexible, expandable Jupiter system can be utilised for resistance and fibre laser micro welding. A revolutionary weld monitoring system which can be integrated into a production line was on display, as well as a desktop, high speed fibre laser marking system.

AMADA
Tel: 01562 749500
Email: info@amada.co.uk
www.amada.eu/uk-en



Biogas boosts green credentials with on-site nitrogen generation from MSS

Innovative renewable energy technology specialists, Biogas Products Ltd in Dudley have recently added a new MSS Nitrocube high pressure nitrogen generation system to its laser cutting operation.

Having used bundled gas cylinders to supply its fibre laser previously, Biogas decided that it benefit from the flexibility and convenience of a Nitrocube system.

Tony Smith, managing director, comments: "We often experienced some production issues and inconvenience directly connected with our use of bundled cylinder pack gas, we knew that our gas use was only going to increase so we felt that a change was needed.

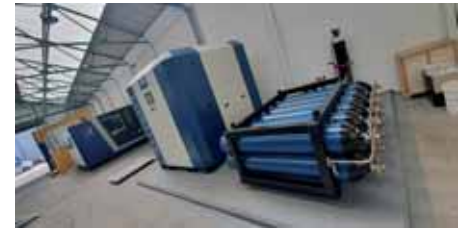
"MSS were able to demonstrate to us an excellent understanding of our nitrogen cutting gas requirement from early enquiry stage and this expertise has continued through to the successful installation and operation of our new Nitrocube system."

MSS sales director Chris Smith says: "Biogas needed a reliable and economic solution that

also offers future-proof capacity and our Nitrocube 2 system met their requirements very well. This model is extremely powerful for the floor space required taking up only 2.2 x 2.4 m with stackable high pressure gas storage cylinders taking up less than 2 x 2 m square space."

The Nitrocube 2 system supplied provides high pressure nitrogen at 20 m³/hour flow and 99.9975 percent purity which is ideal for high quality laser cutting, especially for thicker stainless steel. The system features 288 m³ of storage at 300 bar pressure. All the latest generation MSS Nitrogen systems use the very best components available today which combine to make each system super-efficient. Typically using 25-40 percent less energy to generate higher purity nitrogen than other systems available. The new system also features MSS' unique touch screen control panel that allows remote system performance and status monitoring.

Tony Smith adds: "The MSS Nitrocube has



now proven itself to be more economical than bundled gas cylinders and also delivers higher quality nitrogen which has improved our cutting quality and reduced the amount of cleaning up needed. We now don't have to worry about running out of gas as we have our own dedicated supply which generates the right quality nitrogen only when we need it."

With over 1,200 systems installed in the UK and US, MSS are global leaders in high pressure generation systems for laser applications.

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Window manufacturer sees clearly with Filtermist

As a leading manufacturer of steel windows, Crittall Windows manufactures a vast range of bespoke windows, doors and screens that range from residential and commercial applications to everything from new buildings to architecturally significant historical buildings. With a proud history that dates back to 1849, the Essex company applies the latest manufacturing technologies to deliver products that are the envy of the industry. In the new machining department, the FX Series of compact oil mist collection systems from Filtermist has made a dramatic impact.

Crittall Windows has a fascinating history that includes producing windows for the fateful Titanic, manufacturing munitions during World War I and prefabricated truss bridges for World War II. However, innovative window manufacture has always been the core business at Crittall and its production processes incorporate a series of hot-dip galvanising and polyester powder coating to strict BS and ISO: 9001 standards that differentiate the quality and prestige of this brand over its rivals.

The Witham-based manufacturer that exports worldwide has implemented a series of modernisation strategies that have seen Crittall upgrade its machining division. Discussing this, Darren Joyce, production director at Crittall Windows says: "We manufacture complete windows and doors, we do everything here. We cut the steel, machine it, weld it, galvanise it, powder coat and ship our products around the world. We are having a transitional period where our older machinery, which was very heavy-duty and made to stamp big slots and holes in steel sections, is now being replaced as the old method isn't following how we manufacture things nowadays. We now require a lot more one-offs rather than hundreds of parts made to the same size. So, we have moved to more modern and flexible CNC machining to deal with one-offs a lot easier."

The transition to new manufacturing systems and machines is an ongoing project that has taken a few years but is paying dividends for the company celebrating its 175th anniversary this year. One issue the company recognised from transitioning to CNC machining from older punching and stamping technology was coolant mist and fumes from the machine tools. This is where Filtermist stepped in to solve the problem. Recalling the situation, Darren Joyce



Darren from Crittall Windows with Filtermist extraction systems on specialist machines to the right as well as on CNC machines in background.

continues: "One of the biggest challenges we faced when we moved over to CNC machining was that steel profiles are not like aluminium or PVC. Steel takes longer to process and there is a lot of machining that goes on. This needs a lot of coolant and this gave us an issue with the creation of fumes and in particular oil-laden fumes. We rapidly found that the factory was starting to mist up. This wasn't a good workplace environment for our staff. Additionally, there was far too much coolant on our parts which are being welded further downstream and this creates even more fumes."

"We wanted to revise the way we work with coolant and cutting fluid on our machines. One of the biggest challenges was trying to move away from paper-type filters that are used on our type of machine tools. We needed to find something that would take the oil out of the air. If we could take the oil out of the air inside the machines, then when the machine doors open, you don't get puffs of oil-laden air giving you a cleaner working environment."

Alluding to how the company started working with Filtermist, Darren Joyce recalls: "We did a lot of investigation work and we spoke to a lot of machinery manufacturers, which brought us to Filtermist. Filtermist effectively manufacture what is a drum that centrifugally spins and removes the oil out of the air and filters it out.

We thought it sounded too good to be true but it works. We have now installed them in all of our CNC machining centres. The Filtermist FX5002 unit successfully spins the oil out of the air, but we have taken that a step further. We have modified further, so we are recycling that oil and using it on our flood-based coolant machines, extending the service life of the oil."

The company has also applied its innovation to several other areas. As Darren Joyce



The Filtermist FX5002 system with monitoring at Crittall Windows.

continues: "We have also made changes where the door of the machines open. Now, after a 10-minute time-lapse the machines will cut off, not wasting electricity on equipment that is not being used. We are delighted that we found Filtermist, it's a fantastic product that does 'exactly what it says on the tin'."

Crittall has gone from not knowing the Filtermist brand to having 12 of its FX5002 units installed in less than a year. Furthermore, Crittall has specified the Filtermist units with an F Monitor 2 that gives customers live readings of the Filtermist systems' efficiency level - notifying staff when service and maintenance is required.

The Filtermist FX5002 is a popular model that is powered by an extremely efficient 1.5 kW 60 Hz motor that generates an airflow rate of 2,000 m³/hr at 60 Hz. Exceptionally easy to install, operate and maintain, the Filtermist FX5002 is a compact 357 mm diameter unit with a height of just 613 mm, 751.50 mm with an after filter unit.

Commenting upon the evident changes the Filtermist systems have made to the working environment at Crittall, Darren Joyce continues: "Not long after installation, we could see the difference. We could see the mist clouds dissipating. The health & safety and well-being of employees have always been our number one priority. In a steel window manufacturing plant where you also have welding operations and pre-treatment processes, there are evidently fumes, so we have large extraction facilities to manage this. However, the localised filtration of oil out of the air by Filtermist was so important that is where we have seen the biggest improvement. There is no longer any oil on employees' clothes, on their hands, faces or on the workpieces and it's not on the floor. So, it's a much nicer environment and a healthier place for our staff to work in. We have also seen a significant improvement in the air quality checks that we do every year. That has come through in numbers and is based on facts which is even better for our business."

Of course, the Filtermist systems can add so much more than an improvement to the working environment. Darren Joyce concludes: "We have also found economic benefits from the Filtermist systems. We take the oil from the Filtermist systems, recycle and use it on other machines. Coolants and cutting fluids are not cheap, especially as we have moved to

a water-based coolant as opposed to an oil-based coolant. We have to get the water and oil solubility mix correct, so it can burn off without creating too much fume. All in all, if you package all of those things together, you end up with a much healthier working environment. We have also cut down on our oil consumption and expenses. Additionally, the Filtermist filters are cutting in and out to coordinate with our machine usage as opposed to constantly running like extraction units, so we are also



Filtermist extraction systems sitting neatly above the Crittall Windows machine tools.



The Crittall Windows shopfloor that is moving to CNC machine tool technology.

seeing energy savings. All of this really does make the Filtermist extraction systems a 'no-brainer'."

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Cerro EMS unveils new website aimed at elevating the welding industry

Cerro EMS, a leading UK manufacturer of non-ferrous forged components, has announced the launch of its newly redesigned website. With a renewed focus on procurement professionals and technical engineers in the welding industry, the website offers a seamless, user-friendly experience that reflects Cerro EMS's commitment to quality, innovation and British manufacturing excellence.

As the welding industry faces increasing demands for precision, quality and efficiency, the new Cerro EMS website provides a vital resource for industry professionals. With easy access to processes, service information and product details, the site is built to support those navigating today's complex industry landscape. Backed by the financial strength of Marmon Holdings, a Berkshire Hathaway company, Cerro EMS continues to solidify its reputation as a trusted partner for welding and engineering firms worldwide.

Reaffirming the benefits of buying British

In an increasingly globalised industry, the advantages of sourcing British-made components have never been clearer. With the UK's strong regulatory standards and a reputation for manufacturing excellence, companies that choose to buy British are not only investing in superior products but also in ethical practices and a shorter, more reliable supply chain.

By keeping all production within the UK, Cerro EMS mitigates many of the risks associated with long international supply chains. This not only results in faster delivery times but also ensures that customers can rely on consistent quality with every order. The new website highlights these benefits, offering potential buyers and engineers the information they need to make informed decisions that will ultimately improve their operational efficiency.

"The welding industry relies on precision and quality and that's exactly what we deliver," says Mark Jones, director at Cerro EMS. "By sourcing from the UK, customers benefit from shorter lead times, stringent quality control and a commitment to innovation that is second to none. Our new website reflects these values and is designed to make life easier for procurement teams and engineers alike."



Mark Jones, director at Cerro EMS.

Targeting procurement teams and engineers

The redesigned website was specifically developed with two key audiences in mind: procurement professionals and technical engineers.

"Our goal with the new website is to offer a comprehensive resource that caters to both the commercial and technical aspects of procurement," explains Mark Jones. "We know that procurement teams need quick, accurate information to make informed decisions, while engineers require detailed specifications and data to ensure that our components meet their exacting standards. The new site delivers on both fronts."

Looking ahead

Cerro EMS's new website launch marks an important milestone in the company's ongoing mission to support the welding industry with cutting-edge products and services. As the

industry continues to evolve, Cerro EMS remains committed to leading the way with innovative solutions, strong financial backing and a dedication to quality that has been the hallmark of British manufacturing for decades. Cerro EMS is a UK-based leader in non-ferrous forging and machining, providing precision-engineered components to global markets for over 40 years. Backed by Marmon Holdings, a Berkshire Hathaway company, Cerro EMS delivers innovative solutions to the welding and engineering industries, with a focus on quality, reliability and sustainability.

Working in partnership with customers is critical to its success. This focus has aided Cerro EMS to build a strong client base, many of whom have been customers for over 20 years, across a multitude of industries and sectors including: gas utilities, electrical, welding, security, health care, automotive, marine, defence, hydraulic, amongst others.

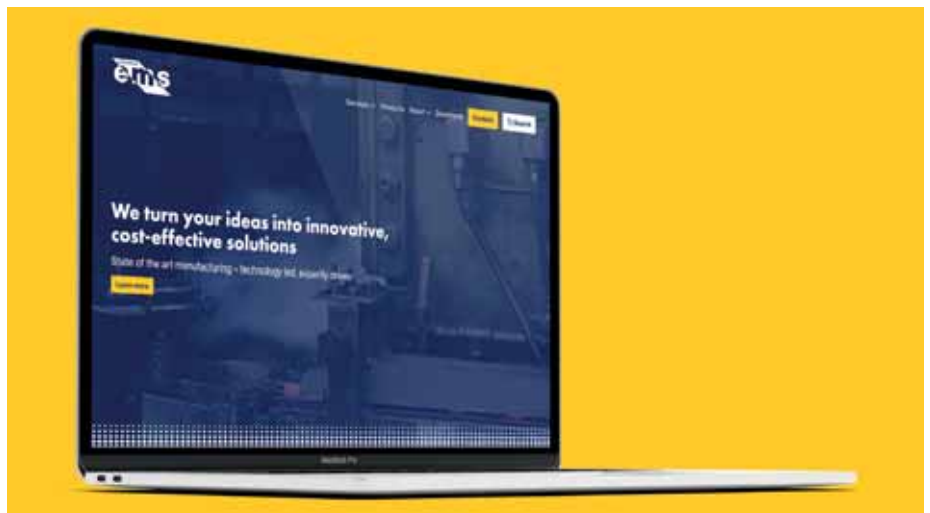
Its top priorities are delivering efficiency, cost-effectiveness and reliability. Using high-quality materials and advanced forging processes, it ensures optimal value for your investment. The company offers collaborative relationships with suppliers that embrace innovation, offer competitive pricing and deliver peace of mind regarding availability. It is passionate about providing successful procurement strategies in the non-ferrous forging industry.

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Metal 3D printing perfected in one welding characteristic



Using additive manufacturing, components, spare parts and even prototypes can be manufactured in a way that's flexible, resource-efficient and profitable. The required components can be produced quickly and from virtually nothing, regardless of the location. With CMT Additive Pro, Fronius presents a revolutionary, 3D-optimised welding process with impressive features such as an especially even layer structure, as well as high quality and stability. On request, the Austrian company is also happy to use its welding expertise to provide tailored support. At the company's prototyping centre, component geometries that may have once seemed impossible are made into a reality, layer by layer.

Metal 3D printing is on the rise in many industries including automotive, oil and gas, aerospace engineering, ship and train building and the manufacture of construction equipment and tools. Compared to conventional production processes, such as casting, machining or milling, here the requirements in terms of moulds and materials are low. This process saves a lot of time and material and provides enormous flexibility when designing and adapting different components.

More competitive and more flexible

Additive manufacturing has enormous potential, especially where the degree of individualisation is high. Today, unique metal

components can be printed in highly complicated geometries that have previously been difficult or even impossible to achieve. One example of this is rapid prototyping, which allows manufacturers to quickly adapt and refine their product designs before moving to mass production. Topology optimisations that could not be achieved using conventional methods are now possible.

Metal 3D printing also simplifies repairs and on-demand printing of spare parts. It allows components to be manufactured 'just in time', eliminating the need for storage and the costs associated with it. Companies who use this

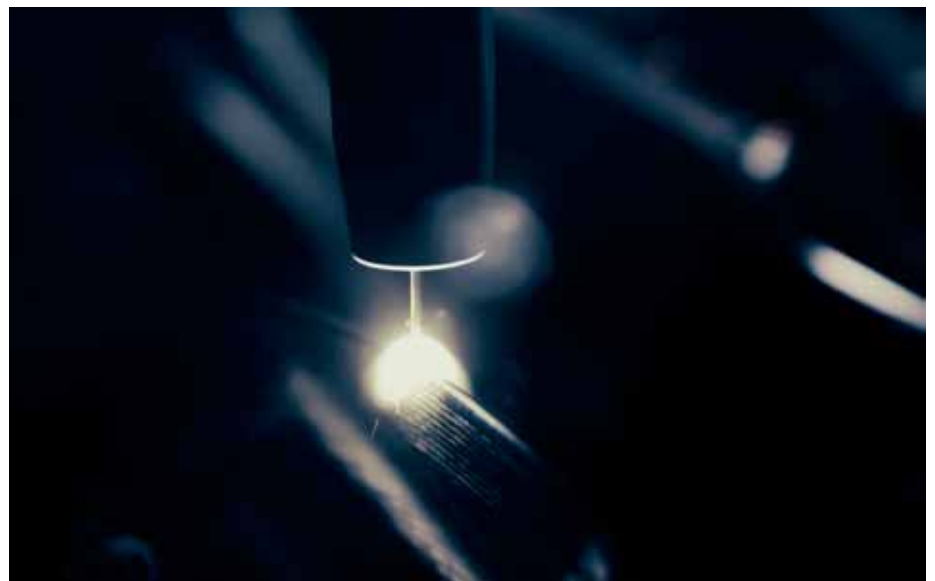
method become more competitive and can significantly shorten their development cycles, which is a great advantage in our turbulent and volatile times.

Reliable high-end welding technology

"The right welding path with the right welding parameters and processes is crucial for a good result in metal 3D printing," explains Philipp Roithinger, an expert in additive manufacturing at Fronius International GmbH. "However, this requires a high-performance welding system that precisely ensures the accuracy of the welding torch." The new iWave Multiprocess Pro combined with the Fronius CMT Additive Pro characteristic is optimised for metal 3D printing. This perfectly adapted equipment is now available. The complete solution is compatible with common robot systems for additive manufacturing and opens up a whole host of possibilities.

Exclusive 3D features combined in one welding characteristic

With CMT (Cold Metal Transfer), Fronius has been offering a highly stable, easily controllable and comparatively cool welding process for decades. This is already the preferred method for 3D printing around the world. It therefore makes total sense that the company has now optimised CMT specifically for metal 3D printing and put all the know-how it has amassed into the development of Fronius CMT Additive Pro. The integrated arc-on rate stabiliser ensures a



consistent wire speed, resulting in an even and predictable build-up of layers. This significantly improves the overall stability of the manufacturing process.

“Another innovation is the adjustable heat input, which ensures consistency in the height and width ratio of the bead, regardless of the current temperature of the base material or the previously welded layer. Weld layers usually become wider and flatter as the component heats up,” explains Philipp Roithinger. “The power correction feature counteracts this, so that identical welds can be stacked on top of each other, layer after layer.”

The start of the weld within the construction process is another important criterion for metal 3D printing. Welding errors or cambers in the area where the weld was started can affect the quality of the result. Fronius has the perfect solution to this with the Pulsed Hot Start function, which simultaneously achieves sufficient penetration and a constant layer height by starting welding within the pulsed arc. Here, the whole process is controlled automatically, so no extra settings are necessary.

The Fronius development team has added valuable features to CMT for optimal 3D printing results and combined everything in one



characteristic. The team of experts at the Fronius prototyping centre are on hand to come up with even more solutions for demanding welding challenges.

360° service from the feasibility study to the pilot series

In its prototyping centre, Fronius provides a comprehensive service package. Here, tailor-made solutions are developed for individual requirements and customers' additive manufacturing processes are optimised, or highly complex components are realised. From the initial consultation and feasibility check to the development and manufacturing of parts, everything is carried out in close coordination with the client and with the highest degree of discretion. The aim is to minimise the time-to-market and fully utilise

the potential of innovation and technology in the projects.

The experts support the production of the initial prototypes and pre-series and enable a smooth entry into the additive manufacturing process. In addition, you will receive valid recommendations on the welding process, profitability, quality and implementation options, or the costs for the prototype and the start of production. The 900 m² prototyping centre in Wels, Austria, has several isolated robot cells and systems and offers full service, including offline programming and simulations, metallurgical investigations, 3D component measurement, complete data documentation and much more.

Fronius unleashes customers' welding potential

Anyone interested in benefiting from Fronius' know-how in 3D printing and solving complex welding challenges is welcome to contact the specialists in the Fronius prototyping centre.

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Powerfully simple welding machine from Kemppi

New MIG/MAG welding machine built specifically for demanding jobs in difficult environments

Introducing the X3 FastMig

Kemppi has released a powerful new MIG/MAG welding machine that's simple to use. With 420 amps at a 60 percent duty cycle, the X3 FastMig is ready for heavy industrial welding. It's an extremely durable system-class welding machine with simple and precise controls, a new icon-based user interface saves time with a fast setup and easy parameter selection. The X3 FastMig gives you immediate control over key functions for a simple and reliable way to create high-quality welds. In addition to the synergic MIG/MAG welding process, the X3

FastMig includes MMA and gouging processes.

The X3 FastMig has two synergic power source options for gas- and water-cooled welding. In a water-cooled power source, the cooler is integrated into the power source. Both power sources include over 40 welding programs that are ready in the machine.

The X3 FastMig has a robust-build and durable wire feeder with dual-wall construction and a 4x4 wire drive mechanism for effective use in a wide range of working conditions. It has been designed for all-day heavy welding but is also simple enough for lighter, precision-focused tasks.

As usual, the X3 FastMig can be complemented with several optional accessories, depending on the needs. Accessory selection includes 2- and 4-wheel trolleys, on-torch and handheld remote controls, a wide selection of cables and a boom hanger.

Kemppi supplies advanced products, digital solutions and services for professionals from industrial welding companies to single



contractors. The usability and reliability of its products is its guiding principle. It operates with a highly skilled partner network covering over 70 countries to make its expertise locally available.

The company is at the forefront of arc welding, with 70 years of experience in shaping the future of the market and solving customers' arc welding challenges with advanced products, digital solutions and services. Delivering benefits is teamwork, both internally and externally, as it collaborates with its partners and customers. It aims to design products that are easy to use and are constantly interested in what customers need.

It is proud of its heritage and expertise. With roots in Finland, it has grown from humble beginnings into a multinational welding equipment manufacturer whose innovations have shaped arc welding time after time. When you choose Kemppi, it will do everything to make sure you feel secure and that your business is in safe hands.

Kemppi has a long track record of helping customers improve their welding productivity with premium products, intelligent digital solutions and accessible services. It will help you to increase your output and reduce welding production costs with success measured in customer satisfaction. It strives to deliver solutions that are reliable, functional and easy to use.

Its welding-related operations, ranging from welding research and the development of welding equipment arc properties to the demonstration of welding equipment and welding consultancy, provide you with top-notch expertise in any situation. The quality of its solutions is based on its skilled and professional personnel.

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