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NTR Ltd transfers ownership to employees through an EOT government scheme

For over 46 years Wetherby-based engineering company NTR Ltd has supported and serviced thousands of businesses around the world in the repair and servicing of precision cutting tools and driven/live tooling.

With so many years of experience and a loyal workforce, some of which have worked for the business for over 25 years, the future has looked promising for quite some time.

Owners Mike Shotton, Graeme Allison, Martin Allison and Chris Weeds, however, were looking towards retirement. They quickly agreed that there was only one fair-minded option for the business and team: an Employee Ownership Trust (EOT).

The UK government backed scheme, created over 10 years ago, enables companies to become owned by employees, as part of an exit and succession planning strategy.

Chris Weeds, who remains in his role as NTR's managing director, explains: "This move will see NTR enter a new era, ensuring a sustainable future for the business and for the people who have worked tirelessly to see it thrive.

"It's incredibly gratifying to know that the future of the business lies in the hands of those who have been through both the toughest and the most successful times. The employees are the backbone of this company, and this transfer ensures that they will continue to benefit from the growth they've helped build."

As NTR continues to be successful, with prestigious customers such as Rolls Royce, JCB, Balfour Beatty, Forgemasters and Jaguar Land Rover, there is a real sense amongst the employee trust that the company is ready to take on bigger challenges.

Sam Wood, operations director and who sits on the EOT Board, enthuses: "When the suggestion of the EOT was first made, I wasn't entirely sure what it would be like, however, the more we looked into it, the more it felt like an opportunity of a lifetime.

"When the four former owners bought NTR in 2016, we were in very difficult circumstances. Their strategic investment, drive and determination turned the business around in less than six months. We already had a lot to be grateful for and now they have handed us this amazing opportunity too."

Contact NTR for the repair of metal cutting tools and the servicing and maintenance of driven/live tooling by the Tool Health Heroes.

NTR Ltd Tel: 01937 845 112
Email: Chris.Weeds@ntrltd.co.uk www.ntrltd.com

Adam Ball takes over as Lantek UK commercial director

It is all change at Lantek UK as Rob Powell hands over the reins to Adam Ball who has taken over the role of commercial director for Lantek UK. Lantek is recognised as a market leader in the sheet metal industry opening its UK office in 2000. Rob Powell, who has been working in the industry for over 40 years, says: "I joined Lantek in September 2000 with only one Lantek Expert system installed in the UK. It was hard at first to get the name known in the market but, once companies understood that Lantek was one of the best CADCAM systems for punching and profiling and backed this up with top class support, the business flourished with 20 systems installed by 2005 and around 1,500 in the field now."

Rob Powell will continue as director of OEM Partnerships in the UK for the first quarter of 2025. This has been an area where Lantek has excelled with over 120 OEM partnerships with sheet metal machine tool manufacturers worldwide. Its Expert software has been tailored to optimise the particular strengths of each make and model of machine, covering laser, punching, waterjet, oxy cutting, plasma, tube cutting and combination machines all within one integrated system.

During Rob Powell's tenure as commercial director, Lantek UK has grown to 14 people dedicated to sales and customer support, providing the highest levels of service for its users. He adds: "2010 was a milestone for Lantek with the launch of the Integra ERP software. This was an innovative step, offering the industry a business system designed to suit the specialist requirements of the sheet metal industry. The demand for this software is taking off as the UK market is becoming more mature and it is set to be a major part of our offering, producing a step change for our customer's operations."

Adam Ball, the new commercial director has over 20 years of experience in sheet metal machinery gained in senior roles in service, applications and sales. This in-depth and diverse knowledge of machinery and manufacturing processes will bring a thorough understanding of every aspect of business to Lantek's clients, providing them with real world solutions that will reduce costs and increase productivity.

Adam Ball says: "It is an exciting time at Lantek, software development is continuing at an increasing pace through AI and Cloud applications and it is a privilege to build on Rob's achievements. Lantek is unique in the depth, capability and integration of its sheet metal software which enables manufacturers to choose the most suitable machining and cutting technologies for their company, integrating this with the administrative aspects of their business for maximum efficiency, productivity and profitability. I am really looking forward to the challenge and to playing my part in the continued growth of our business."

About Lantek

Lantek is a multinational which is leading the digital transformation of companies in the sheet metal and metal industry. With its patented manufacturing intelligence software, it enables factories to be connected, turning them into Smart Factories.

It rounds off its range of services with CADCAM, MES and ERP solutions for companies that manufacture metal parts from sheet metal, tubes and profiles using any cutting technology: laser, plasma, oxycut, waterjet, shearing and punching.

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A new era for Floyd Automatic Tooling Ltd

On 6th January, leading UK cutting tool distributor Helix Tool Company Ltd acquired Baldock-based Floyd Automatic Tooling following Richard and Chantal Floyd's decision to retire from the business after 35 years.

With branches in Leeds and Durham, Helix Tool has an ambitious growth strategy that includes consolidating the industrial tooling distribution market. With a reputation built upon 30 years of delivering exceptional product lines and performance-based industrial solutions, the acquisition of Floyd Automatic will enable Helix Tool to penetrate a new target audience. In an undisclosed transaction, the Leeds-based business has made a double acquisition of Floyd Automatic Tooling Ltd and Nsert-UK Ltd based in Washington, Tyne and Were. The acquisitions are highly complementary and in line with Helix's organic and M&A-led strategy.

Discussing the purchase of Floyd Automatic, Matt Cattell, CEO of Helix Tools holding company, said: "We are thrilled to welcome Floyd Automatic into the Helix family. Today's announcement signifies a strong start to 2025 for Helix, and we are confident that customers will see significant benefits in terms of product offering and exceptional technical expertise."

Discussing the transition to new stewardship for the previously owned family business, retiring owner and managing director of Floyd Automatic, Richard Floyd, says: "I started Floyd Automatic Tooling in 1990 with the support of my father, Bill. Over the last 35 years, we have built a fantastic business and an incredibly talented team that I am extremely proud of. We aimed to introduce Swiss-type tooling innovations to provide solutions for sliding head-turning centres and CAM-auto users. Over the decades, our offering has expanded exponentially in line with both the technology and the requirements of the marketplace. We have built partnerships with suppliers and clients that have spanned decades; many business relationships are now close friendships. The staff and management team at Floyd Automatic will undoubtedly take the Floyd brand, relationships, service and product portfolio forward with new vigour and I wish our new owners every success in the future."

Adding his sentiment, Helix Tool managing director Paul Lynch says: "As part of our strategy to consolidate the industrial tooling supply network in the UK, Floyd Automatic is a fantastic acquisition for our business. Floyd Automatic has always had a reputation for delivering high-end niche solutions with expertise that reaches far beyond that of its rivals. This acquisition will allow Helix customers to have streamlined access to Floyd Automatic's products, solutions and technical expertise. We want to extend our gratitude to Richard Floyd for building a robust, unique and successful business and we are relishing the opportunity to take the company forward with the talented staff that will now be part of the Helix family."

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NCMT continues sponsorship of university racing team

Reinforcing its commitment to fostering talent and innovation in motorsport and in engineering and manufacturing generally, machine tool sales company NCMT has announced the continuation of its sponsorship of the University of Wolverhampton Racing (UWR) team for the 2025 season.

Building on a successful partnership that started in 2023, NCMT will support the renowned Morgan Racecar and the innovative UWR Revolution 500 EVO racecar. The latter was launched in conjunction with British manufacturer Revolution Race Cars on 9th January at the Autosport International motorsport show in Birmingham.

NCMT is continuing to sponsor University of Wolverhampton Racing. The team's new Revolution 500 EVO racecar is seen here being launched during the Autosport International show at the NEC in early January 2025.

This season, the car will compete in the newly-formed Equipe Sports Prototypes series, a multi-class racing championship for lightweight prototype sports cars. Behind the wheel will be racing driver and UWR team manager, Shane Kelly.

Assembly of the car and its maintenance throughout the season are the responsibility of the university's student-run racing team. The partnership with Revolution Race Cars will see the manufacturer work closely with the university to create additional learning opportunities, including valuable hands-on experience of competitive motorsport at the factory in Peterborough.

Students will consequently benefit from an engineering environment that blends academic theory with real-world application, in return for which the university will offer Revolution access to its advanced prototyping facilities.

The collaboration not only sets the stage for a thrilling racing season, but also reinforces the university's commitment to producing aspiring motorsport professionals and other engineering graduates who are industry-ready when they leave.

Ian Horton, sales director at NCMT says: "We are thrilled to continue our partnership with UWR. The team's dedication to pushing the boundaries of engineering performance is incredible.

"We look forward to seeing the new 500 EVO racecar in action and are proud to support UWR's journey to even greater achievements in the 2025 season."

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Eco-friendly sliding-head lathe to be launched at Citizen Machinery Open House

On 8th and 9th April, Citizen Machinery UK will hold an Open House at its Bushey, Hertfordshire headquarters, showroom and solutions centre. It is where the UK and Ireland supplier of the Japanese parent company's sliding-head (Cincom) and fixed-head (Miyano) bar-fed turn-mill centres configures and proves out complex automated machining cells. They often incorporate additional functions like in-cycle laser cutting, peripherals, automation and special software.

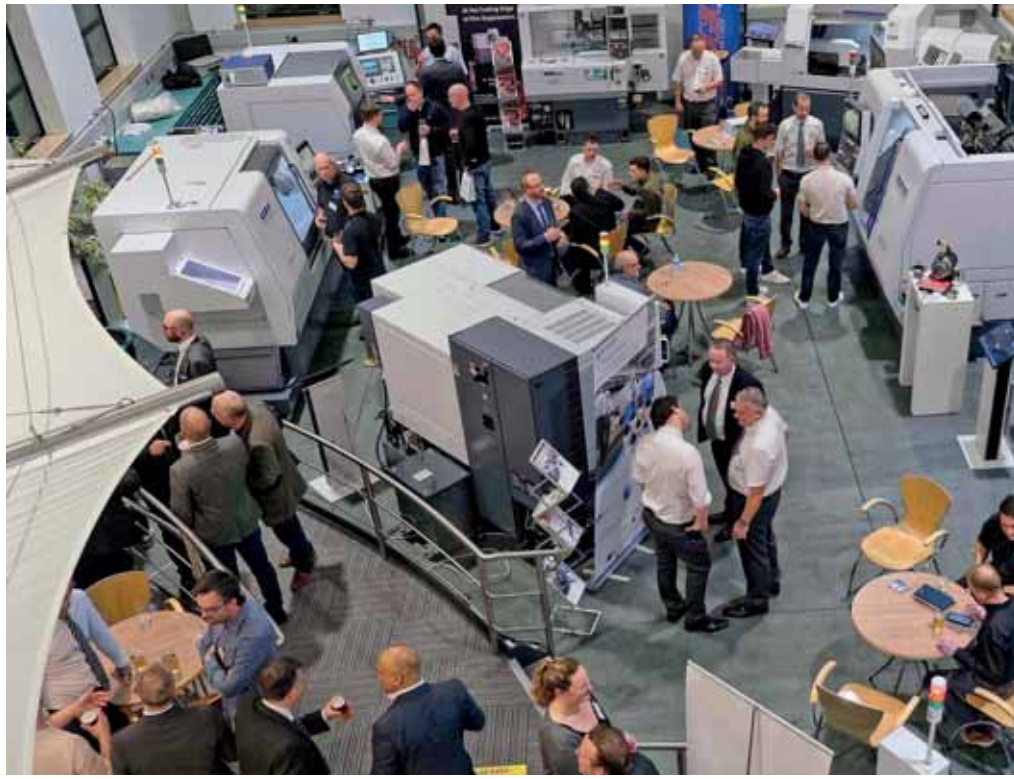
The occasion will mark the UK launch of a new range of sliding-head lathes, the third generation of the Cincom L20, a best-selling model with platen-type tooling and front and rear tool posts. It is offered in five variants, including a top model with or without B-axis automatic tool change, both of which support simultaneous 5-axis control for performing complex machining cycles.The turning centre's specification has been considerably uprated for improved performance and operability. The lathe retains the manufacturer's unique LFV function that has revolutionised chip-breaking in recent years, especially when machining malleable materials.

New at the event will be Alkart Wizard 2025, Citizen Machinery's CNC lathe programming software, which includes for the first time a CADCAM Toolpath Import function in addition to its user-friendly interface, step-by-step guidance and built-in library of machining processes, code examples and reference materials. An automated Miyano BNA-42SY5, which is now available with LFV chip-breaking, will be demonstrated to illustrate unattended machining possibilities.

Visitors will learn more of Citizen Machinery's Eco II suite of energy-saving features, designed to optimise power consumption, reduce compressed air usage, minimise CO_2 emissions and promote environmentally friendly manufacturing practices by allowing operators to monitor and understand energy utilisation patterns.

A touchscreen Eco Monitor continuously displays in graphical form the power drawn and regenerated to ensure the lathe always runs at peak efficiency.

Finally, there will be deals on the first five orders placed at the event for a third-generation Cincom L20, as well as special offers on the last remaining second-generation stock L20s. Anyone interested in attending the Open House is invited to register via the company's website: ***www.citizenmachinery.co.uk/cincom-l320-launch-event***



A previous Open House held at Citizen Machinery UK's Bushey centre.

Citizen Machinery UK Ltd, based in Bushey, is a CNC machine tool specialist supplying the latest CNC turning technology to UK industry. Following a merger in January 2011 the company incorporates staff and resources from the UK machine tool operations of both Citizen, Citizen Machinery UK Ltd, formerly NC Engineering Ltd and Miyano, Miyano Machinery UK Ltd, formerly Macro Machine Tools Ltd.

It has been successfully serving UK manufacturing industry since 1974, now as part of the Citizen group, famous also for it's precision watches and electronics its product range focuses specifically on Citizen's range of high performance Cincom Sliding Head CNC lathes and Miyano Fixed Head CNC lathes.

Following its merger with Miyano Machinery UK in 2011, Citizen now has one of the largest in-house and field-based service and applications support teams in the industry. Its field-based engineers, strategically placed throughout the UK and Ireland are on call to provide you with an unsurpassed level of support in the event that you encounter a problem ensuring that downtime is kept to an absolute minimum. With remote diagnostics capability, they deliver same day support to maximise uptime and maintain a low cost of ownership.

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Fast, versatile machining centre helps win new business

Michael Phillips, joint owner with partner Wayne Robins of contract machining firm Atomic Precision, describes their recently-purchased, Japanese-built Brother Speedio U500Xd1 as "a Swiss army knife of 5-axis machining centres". His comment is due to the 30-taper machine's high quality, versatile functionality, compactness and ability to complete an extensive range of jobs quickly and efficiently. Brother machines are sold and serviced in the UK and Ireland by sole agent Whitehouse Machine Tools, Kenilworth.

Founded in East Hendred, Oxfordshire, in 2020 by the two time-served mechanical engineering apprentices, who both previously worked in the machine shop at nearby Rutherford Appleton Laboratory's space development facility, Atomic Precision specialises unsurprisingly in manufacturing components and assemblies for the space and scientific research sectors.

A succession of 40-taper Vertical Machining Centres (VMCs) from another supplier arrived on the shop floor over the next four years, three 3-axis models and two 5-axis machines. During that time, the subcontractor enjoyed an impressive growth rate of 50 percent year on year.

It was clear to the two partners, who work alone, that the ongoing rate of growth was unsustainable without progression on the shop floor to more efficient machine tools and perhaps also automation to gain substantial periods of unattended production. They operate a single day shift and working longer hours is not part of their game plan.

As a first step to raising productivity, the high-speed Brother U500Xd1 was installed and commissioned by Whitehouse Machine Tools in September 2024. The partners became aware of the machine at the Southern Manufacturing exhibition in Farnborough in early 2023. After early hesitation regarding the smaller spindle

interface, which later proved to be a non-issue and benchmarking a couple of other 30-taper machines on the market, the order was placed.

Michael Phillips comments: "The area taken up on our shop floor by the U500Xd1 is half of the space that one of our 40-taper 5-axis machines occupies, yet the 30-taper VMC actually produces larger parts.

"Not only that, but the Speedio finishes an identical component in two-thirds of the time, as the non-cutting elements of cycles are incredibly short, so tools are in-cut for typically 90 percent of the time during a cycle.

"The linear axes accelerate at 2.2 g up to 56 m/min and chip-to-chip time is 1.3 seconds. Rotary positioning by the trunnion and table are similarly fast and parts come off complete, resulting in really quick floor-to-floor times."

The machine installed in East Hendred is a well-specified version of the Speedio model, with a 16,000 rpm/15 kW spindle, 28-position tool turret, high pressure coolant and Blum tool and part probing. Axis strokes are 500 x 400 x 300 mm, but multi-face machining of components up to 500 mm in diameter by 270 mm high and weighing up to 100 kg is possible owing to the layout of the machining area. Remarkably, this happens in a 1,500 x 2,490 mm footprint.

As well as producing parts up to the maximum working envelope, the Speedio also machines very small components requiring complex features cut with a 0.2 mm diameter end mill, hence the decision to opt for the highest speed spindle Brother offers. Extensive use is made of towers for fixturing multiple smaller parts to extend walk-away time from

the machine if individual cycle times are short. Batch size is normally up to 10-off, although often single prototypes are machined.

However, in November 2024, Atomic Precision received an unusually large order from a new customer for 400-off aluminium brackets requiring a 3+2 machining strategy, using the rotary axes to position the part. The subcontractor could not have accepted the contract if it had been unable to use the elevated speed of the Brother machine. A 5-axis, 40-taper VMC would have been too slow to meet the three-week lead-time, so the subcontractor would have had to turn down the work. If more jobs involving quantities of several hundred start coming in, automating the Brother and indeed other VMCs on-site will go ahead imminently.

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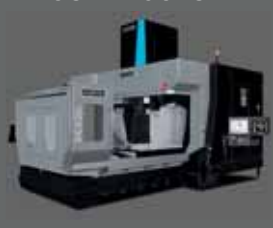


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Hitting the ground running

New engineering business start-up invests in a new, high-performance DN Solutions' vertical machining centre from Mills CNC

Mills CNC, the exclusive distributor of DN Solutions' and Zayer machine tools in the UK and Ireland, has recently supplied Custom Metalworks Ltd, a new precision engineering specialist start-up providing high-precision CNC machining, customised fabrication and welding, and CADCAM consultancy services, with a new DN Solutions', 4th-Generation, DNM 5700 vertical machining centre.

The new machine, installed at the company's machine shop facility in Ormskirk, Lancashire in June 2024, is powerful, fast and accurate. It is equipped with the latest advanced FANUC i Plus control with a 15" touchscreen iHMI and features an 18.5 kW/12,000 rpm directly-coupled, high torque spindle, 117.8 Nm, a 1,050 mm x 570 mm worktable, with a 1,000 kg maximum table load and a 30-tool position ATC.

The machine, supplied to Custom Metalworks as part of the investment package, was also delivered with a Detron GFA-200EH, 5-axis, rotary table, Renishaw tool and table probing systems and a FilterMist extraction unit.

The DNM 5700 in action

Since being installed, the DNM 5700 has been put through its paces machining a range of performance-critical plastic components for a leading manufacturer of innovative patient positioning products and equipment, i.e. support frames, sets, extensions, systems and attachments etc, designed for a range of surgical procedures where the patient lies prone on an operating table.

Custom Metalworks machines parts and sub-assemblies for this customer's best-selling spine frame systems which, essentially, are versatile, cost-effective table-top platforms, positioned underneath the patient, that can be easily fitted to any standard operating table and that enables patients to be safely and securely positioned/re-positioned during spinal operations and procedures.

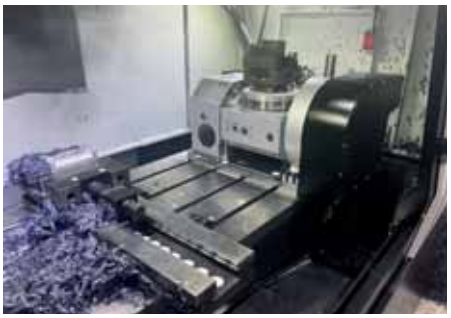
Spine frames are fully radiolucent and feature spine, hip and chest supports that can be easily adjusted to accommodate different patients' height, weight, body-types etc.

These supports, made from Nylon 6, are fixed to each frame system's, parallel, rails by clip locks with a quick-release function.

Custom Metalworks machines and supplies batches of supports, which comprise brackets, clips, modular sides etc., to the customer.

Batch sizes vary depending on the support itself and the customer's order requirements but can be up to 200-off per month for certain products and less for others.

Part cycle times are typically around 30 min allowing time to focus on other activities whilst the machine is running.



In addition to Nylon 6, Custom Metalworks has also machined stainless steel and aluminium components and fixtures on the new machine.

Custom Metalworks

Custom Metalworks was established in 2023 by owner and director, Jack Eckersley, an apprentice trained, time served and entrepreneurial engineer.

He started his engineering career at a leading design and manufacturer of innovative, high-quality products and solutions for the glass container manufacturing industry.

Having completed his 4-year apprenticeship at the company, plus an additional period of time on the machine shop floor working as a manufacturing engineer, Jack Eckersley made the decision to leave and start up his own precision engineering subcontract business, providing specialist high-quality CNC machining and fabrication and welding services to customers.

"It's something I always wanted to do", states Jack Eckersley. "I was confident that my toolmaking background combined with experience in CADCAM, CNC milling, inspection, reverse engineering and design for manufacturing would stand me in good stead and ensure that the new venture would be a success."

At around the same time as setting up the new company, Jack Eckersley was presented with an opportunity that ultimately shaped the direction of travel for his fledging business.

Opportunity knocks

"I was introduced to a local medical equipment company that specialised in the design and manufacture of innovative patient positioning products," he explains.

"The company had, for a variety of reasons, recently decided to bring its manufacturing operations in-house and had, already, invested in a number of CNC machine tools, including a

simultaneous 5-axis machining centre, but needed help in setting up and organising its machine shop and in developing secure and efficient programs and processes to machine components for its product ranges."

Jack Eckersley took the decision, monumental as it transpired, to join the company, working during the day in its machine shop while focusing on his new business venture in the evenings and at the weekends.

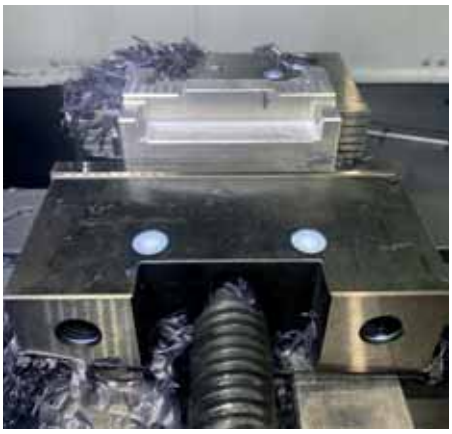
This arrangement enabled him to build good working relationships with the customer, acquire a thorough understanding of its product ranges and, seeing as he had developed many of them, know its manufacturing methods and processes, inside-out.

However, after a few months, instead of 'burning the candle at both ends', trying to run the customer's machine shop whilst, at the same time, getting his own business off the ground, a mutually beneficial decision was made to transfer all of the customer's machining operations over to Custom Metalworks.

The DNM 5700 investment decision

Jack Eckersley did his homework and narrowed down his search of potential machine tool suppliers.

Having already had experience of Doosan



machines and Mills CNC from his time at the glass container manufacturing company, he approached Mills to find out more about the company's 3-axis milling ranges and was introduced to popular and proven DNM series.

This ultimately culminated in a visit to Mills' stand at MACH 2024 where he saw the new, 4th-generation, DN Solutions' DNM 5700 in action.

Explains Jack Eckersley: "I was looking for a machine that delivered fast processing speeds, high accuracies and good surface finishes and that would enable us to machine large and/or smaller multiple parts in a single setup.

The DNM 5700, with its advanced spindle technology, rigid and thermally stable build, fast rapids and large working envelope seemed to offer the ideal solution. Having talked to Mills, I placed the order there and then at the show. Since being installed in June 2024, the DNM 5700, following on-site training, has been in full operation ever since."

Future

Custom Metalworks offers something unique to the market and its customers, high-quality machining, customised fabrication and welding services, design for manufacturing consultancy etc.

The investment in the DNM 5700 has improved the company's machining capacity, capabilities and flexibility.

As far as the future is concerned, Custom Metalworks, never a company to rest on its laurels, is looking at the potential of streamlining its machining operations by investing in automation, i.e. robot handling system, to further increase productivity and improve process efficiencies.

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Small but ambitious APF Services moves into CNC machining and sees immediate gains

APF Services, a small but progressive two-man business specialising in hydraulic repair work, has invested in its first CNC machine, a Proturn RLX 425 CNC lathe with ProtoTRAK® control from XYZ Machine Tools. Despite concerns about the cost and learning curve involved in transitioning to CNC, the portfolio of cost-effective, easy-to-use machines available from XYZ completely allays such apprehensions for small manufacturing businesses. APF Services is a case in point, where the arrival of the new XYZ CNC lathe is driving cycle time reductions of up to 90 percent on certain jobs.

Located near Peterhead, Aberdeenshire, APF Services was founded in 2012 by Chris Dawson to provide hydraulic repairs for a host of local industries, including agriculture, forestry, fishing, oil & gas, and waste/landfill.

"We have a good regional niche in these sectors," he says. "However, we were managing our workload using two manual lathes and a manual mill, which started to prompt concerns about getting left behind. Turnaround time is paramount for our customers, with requests for next-day delivery commonplace. However, I'd never dreamed of going into CNC as I didn't know the first thing about it."

By chance, Chris Dawson noticed that a nearby customer in the forestry industry was benefiting from a range of CNC machines with ProtoTRAK controls from XYZ.

"I subsequently went to see a demonstration of a Proturn RLX 425 CNC lathe at XYZ's Scotland facility in Livingston," he says. "As my first-ever experience of a CNC machine, I wanted to be 100 percent sure I could get to grips with the programming, but I needn't have worried. For first-time CNC machinists like me, the ProtoTRAK control is absolutely excellent. The 15.6-inch touchscreen makes the control simple and intuitive, while the TRAKing® feature allows us to wind the handwheel through the program with complete control, providing peace of mind as we cut our first chips on a new part."

With the XYZ Proturn RLX 425 lathe and its ProtoTRAK® control, programming takes just minutes at APF Services.

XYZ's Proturn RLX 425 CNC lathe with ProtoTRAK control, which is now fully operational at APF Services, offers a 7.5 kW spindle and delivers power through a three-speed headstock running up to 2,500 rpm. The machine features an 80 mm spindle bore, provides 700 mm swing in the gap and 480 mm swing-over-bed and is available with a distance between centres of either 1.25 or 2 m.

"We had our training at XYZ's Livingston facility and could ask as many questions as we wanted. Nothing was too much trouble."

APF Services uses its RLX 425 to produce a host of hydraulic cylinder rods, pins and bushes, typically as one-off jobs but occasionally in small batches. Features include threads, shoulders, chamfers, O-ring grooves and circlip grooves.

"With so many different hydraulic cylinder designs, we can find ourselves machining almost anything," says Chris Dawson. "Materials extend from EN8 and EN24T steels, through to chrome-plated steel, stainless steel and cast steel. Having a machine that's versatile and quick to program is a real blessing."

Cycle times are dramatically shorter, as revealed by a recent in-house time study involving a machining operation on a batch of hydraulic cylinder components.

"It took just four minutes 30 seconds on our new RLX 425 and we weren't even pushing it hard," says Chris Dawson. "The same job took

APF Services reduced the cycle time for hexagon end caps from 12 hours to 2 hours using its XYZ Proturn RLX 425.

45 minutes on one of our manual lathes. That's a 90 percent reduction in machining time."

The company also reduced the cycle time for hexagon end caps, machined from 9-inch diameter stainless steel bar, from 12 hours to just two hours. He also recalls saving a staggering five days of machining time on a batch of cylinder parts.

He states: "We completed them in five days, instead of the 10 days it would have taken us to do them manually and that is when we were still learning about the RLX 425."

EN8 and EN24T steels, chrome-plated steel, stainless steel and cast steel are among the many materials machined on the XYZ Proturn RLX 425.

According to Chris Dawson, customers return because he understands the demands of their industry, particularly the agriculture and oil & gas sectors, as he comes from a farming background. Furthermore, there is little anyone can teach Chris Dawson about customer support, having worked in the North Sea drilling and subsea construction industry for many years and subsequently as a hydraulic mechanic for a major subsea engineering company. With this experience, he knows what is expected of third-party companies and the demands put upon them.

A small plastic component produced by APF Services on its new XYZ Proturn RLX 425.

"If one of my agriculture customers damages or even destroys a hydraulic cylinder in the middle of harvest, for example, time is literally money," he explains. "We can be looking at several days for the delivery of a replacement component in our part of the world, which is disastrous for harvesting. We can measure the broken part or make it from the cardboard cut out that is sometimes supplied, repair it or reverse engineer a replacement in ultra-quick time. Sometimes there are no drawings or CAD models, so it relies on our engineering background/expertise to get these customers going again."

Fortunately, the arrival of the Proturn RLX 4525 is making the process easier than ever before.

Chris Dawson states: "The speed of the machine and quality of finished parts is top notch. The business was already growing, but the RLX 425 has taken us to a whole new level."

Such has been the positive experience that APF Services has just ordered another XYZ machine, an RMX 3500 CNC bed mill, again with ProtoTRAK control.

A selection of shafts turned by APF Services on its XYZ Proturn RLX 425 CNC lathe using its XYZ Proturn RLX 425.

"Once I'm happy with a supplier they'll continue to get my business," concludes Chris Dawson. "I like the way I can pick up the phone and get advice from someone in the UK. It feels like we've got proper support with XYZ. This level of customer service is priceless for a small company like ours, which is new to CNC machining and has customer jobs that often cannot wait."

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Heller welcomes H.I.G. Capital as a strategic partner

H.I.G. Capital is taking a significant stake in the Heller Group, a machine tool and manufacturing system manufacturer. The partnership will ensure the success of its transformation and open up many new opportunities for Heller in the areas of investment, efficiency improvement, product development and international market development.

Heller CEO Dr Thorsten Schmidt says: "The partnership with H.I.G. is a milestone for our company. H.I.G.'s additional financial resources and global network will enable us to more rapidly achieve our strategic goals. Our aim remains clear: to secure and expand our innovation leadership in the market to reach new industries and customers."

Innovation, growth and global presence

The partnership with H.I.G. Capital represents a significant development for Heller and opens up numerous prospects for the future:

1. Investments in pioneering technologies

Heller and H.I.G. plan to invest additional funds in the development of innovative technologies. The focus will be on:

- **Digitalisation and automation**
  The expansion of digital solutions will enable Heller customers to organise their production even more efficiently and flexibly. These include artificial intelligence on the machine, the digital twin and other simulation and analysis tools, combined with the continued expansion of automation solutions for the networked production environment.
- **Sustainable production technologies**
  Heller will continue to invest in environmentally-friendly and resource-efficient production technologies to meet the growing demand for sustainability. This also includes the development of energy-efficient machines and processes.

2. Expansion of the product portfolio

Heller will expand its existing product portfolio to address new industries. It's high-precision machines are specifically designed to meet the needs of diverse industries, including mechanical engineering, aerospace, energy, defence, commercial vehicles and e-mobility, structural components. The integration of additional manufacturing modules and flexible production systems meets the increasing demand for customisation and batch size flexibility.

3. Expansion of the global market presence

With H.I.G. Capital as a partner, Heller will be able to continue its international expansion. The plan is to:

- **Develop new markets**
  H.I.G.'s global network will give Heller access to previously untapped markets and industries.
- **Strengthen global sales**
  Heller will continue to expand its sales and service subsidiaries to be closer to customers in strategically important regions.
- **Foster local partnerships**
  Regional partnerships and joint ventures will be used to provide customised solutions for specific market needs.
- **Cooperate with industrial customers**
  Close cooperation with leading companies in a variety of industries will enable Heller to develop customised solutions.

4. Improving efficiency and competitiveness

H.I.G. brings extensive experience in operational improvement to companies. Heller will benefit from this expertise to:

- **Optimise processes**
  Targeted measures will be taken to make internal processes more efficient and increase the company's agility.
- **Increase competitiveness**
  Investments in state-of-the-art production methods and the digitalisation of internal processes will further increase competitiveness.

Comments on the partnership

Christian Kraul-von Renner, managing director of H.I.G. Capital, explains: "Heller is a technology jewel. We are impressed by the engineering capabilities, the expertise of the workforce and the competence of the management. The company has been around for over 130 years and we are confident that it has a bright future ahead of it. We look forward to working with the Heller family and the management team to realise the full potential of this company. Our goal is to further strengthen Heller's role as a global leader in innovation and to expand the success of the company on a sustainable basis."

Nicole Pfleiderer and Marc Heller, representing the fourth generation of the family owners, emphasise: "This partnership allows us to actively shape the company's transformation, while preserving our roots. Together with H.I.G., we are laying the foundations for sustainable growth and success."

About Heller

Heller was founded in Nürtingen/Germany in 1894 as a small craft business. Today, the multinational group develops and produces state-of-the-art CNC machine tools and manufacturing systems for highly productive metalworking. Five production facilities in Europe, Asia and North and South America ensure a reliable supply to customers in many different sectors. In addition, Heller is represented in all major markets with its own sales and service subsidiaries as well as qualified service partners.

The Heller product range comprises 4-axis and 5-axis machining centres, mill/turn machining centres, special-purpose processing machines, machines for crankshaft and camshaft manufacture and cylinder bore coating modules. The portfolio is supplemented by a modular range of services and an expanded spectrum of solutions for the digitalisation and automation of production.

About H.I.G. Capital

H.I.G. is one of the world's leading alternative investment firms, with $67 billion in assets under management. Headquartered in Miami with U.S. offices in Atlanta, Boston, Chicago, Dallas, Los Angeles, New York and San Francisco in the United States and international offices in Hamburg, London, Luxembourg, Madrid, Milan, Paris, Bogotá, Rio de Janeiro, São Paulo and Dubai.

H.I.G. specialises in providing debt and equity capital to mid-sized companies with a flexible and operationally focused, high value-added approach.

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The innovative SediVac offline filter system from Pumps and Equipment Ltd

Tappex Ltd, a renowned leader in the development and manufacturing of high-quality threaded inserts, headquartered in Stratford-upon-Avon, (***www.tappex.co.uk***) has joined forces with Pumps and Equipment (Warwick) Ltd, a premier supplier of machine tool pumps and high-pressure coolant systems, to conduct a trial of the SediVac Offline Filter System.

Tappex were looking to optimise maintenance schedules, specifically the time-consuming cleaning of machine coolant tanks. This cleaning process invariably leads to significant machine downtime and subsequent production losses. Recognising the critical need for improvement, Tappex partnered with Pumps and Equipment to explore potential solutions.

With over four decades of experience serving the machine tool industry, Pumps and Equipment has engineered the Sedivac offline filter system to address this challenge.

This innovative system allows the machine to continue operating seamlessly while the coolant is circulated between the machine tank and the Sedivac unit. This continuous filtration process effectively reduces the accumulation of debris within the coolant tank, significantly minimising production downtime and maximising machine utilisation.

After a successful four-month trial period, the Sedivac system has demonstrably proven its value as a crucial asset in optimising Tappex's coolant maintenance procedures. By efficiently removing contaminants and substantially extending the lifespan of the coolant, the Sedivac system has delivered significant benefits, including a dramatic reduction in machine downtime, considerable savings in maintenance costs, and a marked improvement in overall production efficiency. The trial has clearly demonstrated the Sedivac system's potential to streamline operations and enhance productivity within a demanding manufacturing environment.

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Seyer productivity levels set to take-off with Starrag

If there was ever a 'cracking' story of a company's rise to prominence, you wouldn't have to look much further than Seyer Industries. As a world-class manufacturer investing in machine tools from a world-leading brand like Starrag to manufacture critical aerospace components, growth at the Missouri, USA-based manufacturer conceived in a farmer's garage in 1957 is reaching boiling point.

It was self-taught tinkerer and inventor Lou Seyer who made enough money in the 1950s from his 'Easy Egg Cracker' invention for boiled eggs to partner with Harold Buckner and purchase machinery from a failing business. In the early 1980s, the company started manufacturing support equipment for the military as well as working on McDonnell Douglas Aircraft, the success has been exponential ever since.

Now, Seyer is a 3rd generation family-owned aerospace company that has developed into a world-class manufacturer with four primary product groups operating from a 210,000 sq/ft facility. This includes supporting customers in the commercial aerospace, military aerospace, military support equipment and maritime industries. The investment strategy is proving so successful, the AS:9100D, ISO:9001, ITAR registered and NADCAP-certified company has grown 20 percent year over year for the last five years.

One impressive element of the company's investment strategy is its 1.8MW solar panel system that generates over 30 percent of Seyer's electricity needs. Covering three of its four buildings, the only reason the 4,216-panel installation doesn't qualify as Missouri's largest commercial solar-powered system is because it is spread over three buildings. Despite this, Seyer's commitment to minimising its carbon footprint is admirable and exceeds the largest in-state installation of 4,085 panels on top of a globally renowned Swedish furniture store.

Mark Seyer states: "This machine has been selected because of the need for a high material removal rate while maintaining accuracy, precision and reliability."

Discussing the company's activities, Mark Seyer director of operations at Seyer Industries says: "Our mission is to be the best-in-class supplier of complex aerospace products. Seyer specialises in hard metal machining and deep bills of material. We offer great value through vertical integration and a high degree of collaboration with customers. As part of our efforts to take complex problems off our customers' hands, we have built our process offering to support large, hard-material machined parts and assemblies. As price and lead time are everything in aerospace, adding the capability of large-capacity machining will help Seyer offer a complete partner solution for more of our customers. To achieve this, we have decided to invest in machine tools from Starrag."

Starrag's reputation as a leading machine tool partner for the aerospace industry is beyond reproach. Working with most of the world's aerospace primes and their supply chains, Starrag was the obvious choice for Seyer when it won a contract to manufacture defence industry components. With the project requiring the machining of hard metal parts with dimensions of 1 m by 300 mm by 300 mm, the billets had to undergo high material removal machining with impeccable precision and surface finishes on the finished parts. The solution was the Starrag Heckert 800 X5.

The Heckert 800 X5 is a 5-axis horizontal machine with a trunnion design that delivers both the precision and rigidity required for Seyer to machine the hardest materials with high material removal rates. This is complemented by a powerful 12,500 rpm mechanical spindle that was specifically selected by Seyer to deliver the torque needed for milling hard aerospace grade alloys as well as the higher RPM and horsepower to machine softer materials. The pallet changer allows the operator to set up the next part while the machine is in operation. This ensures the spindle is always turning, maximising efficiency, output and minimising setup idle times for Seyer. Setups and downtime are further minimised by a 180 position tool changer with temperature-controlled coolant, part probing and laser tool probing to deliver unparalleled process control and efficiency.

These features enable the new Heckert 800 X5 to run for prolonged periods unmanned while providing maximum productivity output with minimal operator intervention.

Commenting upon the relationship with Starrag, Mark Seyer from Seyer Industries adds: "Starrag comes with a great reputation of providing robust machines with top-notch accuracy and precision. There is no room for error with the parts we plan to produce on this machine. That is why we have partnered with Starrag. The exceptional build quality, rigidity, stability, performance and precision that is backed by Starrag's excellent support network and technical experts will ensure we attain impeccable quality levels to exceed our customer expectations."

"During the sales portion of our journey, Starrag sold itself as an 'engineering company that manufactures machines.' From contract negotiations through the build cycle of the machine, the Starrag Group has come through on their word and they have been fantastic to work with, especially regarding the customisation and design elements of the machine."

Looking to the next step in evolution for this department at Seyer, the company has already committed to machine number two, a 6-axis Starrag STC1800-170 set to be delivered in the Autumn, this investment in Starrag machines will help accelerate growth at Seyer.

The 6-axis Starrag STC1800-170 has been purchased for manufacturing large titanium structural parts for the defence industry and with a 3.3 by 2 by 2 m capacity, the new Starrag STC1800-170 will add both capacity and capability that will give Seyer a huge competitive advantage. Discussing the parts lined up for machining on the STC1800-170 when it arrives, Mark Seyer continues: "We expect this machine to mainly process stainless steel, titanium, and Inconel structural aerospace components, typically in smaller batch sizes in the realm of 2 to 10 pieces." To manufacture these challenging materials, Seyer has specified its STC1800-170, with a 70HP, 53kW, mechanical spindle that boasts over 958ft/lbs, 1,300 Nm, of torque at 100 percent duty cycle with a spindle speed of 5,600 rpm.

Optimising flexible manufacturing, the 6-axis machine STC1800-170 selected by Seyer can handle very large parts and is equipped with a tilt

station that allows the machining of parts in both the horizontal and vertical orientation, the STC1800-170 permits one-hit machining that will reduce setups and enhance component quality for the aerospace manufacturer. As expected with a brand that leads the way in the aerospace and defence industry, features such as automatic calibration and verification of machine kinematics, temperature-controlled coolant, probing reports and extreme accuracy levels are standard on the Starrag machine.

Furthermore, with Seyer recognising that hard metals require a large number of cutting tools, the manufacturer has chosen to equip their new STC with a 450-position automatic tool changer with an RFID system and tool verification laser for unsurpassed process control.

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Renishaw helps Tronosjet Manufacturing achieve FAA certification

When Tronosjet Manufacturing wanted to boost its Additive Manufacturing (AM) capabilities and achieve regulatory compliance for its metallic aerospace parts, it turned to global engineering technologies company Renishaw for support. Renishaw supplied multiple laser powder bed fusion (LPBF) AM systems, which Tronosjet uses to produce various aircraft components. These include an engine thrust control pulley bracket, one of the first additively produced metallic parts to be certified by the Federal Aviation Administration (FAA) under its Parts Manufacturer Approval (PMA) scheme.

Background

Founded in 2001, Tronosjet is a Canadian aircraft leasing, major modification and aircraft maintenance provider. Historically the company has owned and managed a fleet of over 60 BAe 146/Avro RJ aircraft, including engines and spare parts on behalf of third parties.

In 2016, the company founded its advanced manufacturing division, established to use AM to produce different aerospace components for its customers. As part of its AM service, its team designs, prints, heat treats, post-processes and metallurgically tests parts to deliver qualified components along with the required certification data. Its manufacturing facility carries approval as an Aerospace Manufacturing Organisation under Transport Canada 561, along with AS9100 approval for design and development.

Although more manufacturers are starting to use AM to produce aerospace components, very few components have received regulatory approval from the FAA preventing customers from flying them.

To demonstrate the capability of AM production, Tronosjet selected a BAe 146 part to produce using AM, a cast magnesium engine thrust control pulley bracket that suffers from corrosion. The bracket holds a pulley, which redirects engine cables that travel from the cockpit to the pylon connecting the engine to the airframe. Statically, the bracket is usually loaded with 60-100 lb of tension from the cable.

"The thrust control pulley bracket was determined by the FAA to be a Class 1, critical, part, essential for the safety of the aircraft," explains Jeff Campbell, director of maintenance and manufacturing at Tronosjet Manufacturing. "We knew that additive manufacturing could provide the required strength and that having our new bracket certified by the FAA would validate the use of additive in aerospace production."

Challenge

With AM still a relatively new technology, Tronosjet knew it would need to demonstrate the quality, strength and reliability of printed parts to the FAA and its regulatory groups, comprised of material scientists, aerospace engineers and other airworthiness specialists.

"Over the years, we have communicated with the FAA many times on different projects, and we understand how it works as a regulatory body," adds Jeff Campbell. "This gave us an advantage because we knew what to expect. We knew that we'd need to prove the bracket's safety using tensile, fatigue and Non-Destructive Testing (NDT) and to show that it wouldn't degrade over time."

As well as proving that the bracket could pass NDT, tensile and fatigue testing, Tronosjet needed to demonstrate the repeatability of the titanium alloy and its manufacturing process. Therefore, it required a high-quality AM system that could produce complex metallic components and instill confidence with the regulators in the company's production team. At this point, it turned to Renishaw.

Solution

"Our relationship with Renishaw goes way back, and we first came to the UK to meet with its CEO in 2018," explains Jeff Campbell. "The reason we decided to go for a Renishaw system is the brand, it's a trust marker and we knew it was a company that offers excellent engineering and process capability. Its RenAM 500 series are world-class AM machines and of the quality we needed to achieve FAA certification. Also, we were impressed with Renishaw's presence

across North America and its local support was important for us as a small business taking on new technology."

Over time, Tronosjet purchased three RenAM series machines from Renishaw: the AM250, the 500S Flex and the 500Q. All use LPBF for metal component volume production and have a build volume of 250 mm x 250 mm x 350 mm. The AM250 and RenAM 500S Flex are both single-laser machines, while the RenAM 500Q is a four-laser system, with the latter offering automatic powder recycling.

To produce the thrust control pulley bracket, Tronosjet chose the AM250, which can produce complex metal components directly from Computer-Aided Designs (CAD) models using materials including titanium, aluminum and nickel. It chose this system because the AM250 can produce parts with the high material properties expected by the FAA and it doesn't employ multiple lasers or reuse powder. These are still highly innovative production features, which may have sparked caution among some of the FAA's regulators.

Result

Renishaw supplied the three RenAM systems, and Tronosjet printed the engine bracket on the AM250 using a Ti-6Al-4V titanium alloy. Its team then conducted extensive NDT, static, functional and destructive testing and compared its performance with the original cast magnesium bracket, finding that the titanium-printed version was five times stronger. The printed bracket survived loads over 22,000 lb, while the original broke at just 4,000 lb.

"The numbers put things into perspective," continues Jeff Campbell. "The bracket's superior tensile strength shows that the titanium print is capable of withstanding significantly higher loads then required, when the aircraft is in flight. This helped convince the regulators that AM was more than up to the job."

After Tronosjet demonstrated the part's strength, safety and quality, the engine bracket was eventually certified by the FAA and has received Parts Manufacturer Approval (PMA). Certification demonstrates that the bracket has received adequate testing in line with FAA standards for airworthiness and means that Tronosjet can now produce and supply it to customers. Significantly, it is one of the first FAA PMA certified metallic AM components giving Tronosjet a competitive edge.

Jeff Campbell concludes: "We're grateful for Renishaw's engineering prowess and support. It delivered great products, which have been critical for us achieving certification.

For more information on the RenAM 500 series and its laser powder bed fusion technology, visit: ***https://www.renishaw.com/en/renam-500-metal-additive-manufacturing-3d-printing-systems***

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MSC introduces a new brand of cutting tools designed by engineers for engineers

MSC Industrial Supply Co. UK (MSC) has introduced MSC Edge, a new brand of cutting tools designed by MSC engineers, for engineers.

As the UK's leading supplier of metalworking, safety and Maintenance, Repair and Operations (MRO) products, MSC and its team of time-served engineers recognised an increasing demand within SME engineering firms for durable, quality cutting tools, at an affordable price from a trusted source.

The brand ambition for MSC Edge is to offer a range of multipurpose cutting tools that can do 80 percent of machining operations, with 20 percent of the tools, across a wide range of materials, a game-changer that will simplify and rationalise tooling processes, saving the user both time and money.

Gareth Evans, director of engineering and business innovation at MSC, comments: "With many of our precision engineering customers diversifying into new sectors and shifting towards more project-based work, we saw the need for durable, multi-purpose tooling that performs as they need it to and at the right price.

"We understand that having specific tools per application or material can be costly and time-consuming. However, a great machinist will make do with the tools in their carousel and tweak the cutting data to the material. With the introduction of MSC Edge, our brand promise is to help you rationalise your tooling, across multiple materials, with the tools and sizes commonly needed, ultimately saving you time and money. Nevertheless, whenever a specific tool is needed, for that perfect application, there are over 500 Industry-leading brands available at MSC, to ensure you get the right tool for the job.

"At MSC, we are relentlessly committed to our purpose of 'Built to Make You Better.' This launch isn't just about tools, it's about supporting the engineering community in tackling the toughest challenges, head-on."

The development of MSC Edge is rooted in the MSC engineers' first-hand understanding of the demands faced by their peers.

Each tool in the MSC Edge range has undergone rigorous testing at the state-of-the-art MSC Technology Centre, in Wednesbury, using the company's Hurco machining centre programmed with Autodesk Fusion 360, as well as with its SME manufacturing customers on real-world applications.

The in-house testing facilities also allowed MSC to maintain control over specifications, ensuring consistent and accurate results. By replicating customer environments and applications, the testing aligned with common cutting strategies, including drilling, profiling, full-width slotting and helical milling.

Engineers meticulously analysed wear patterns under a microscope during extensive trials, across various materials and toolpaths. This approach now ensures that each tool not only exceeds performance standards but also remains competitively priced.

The first phase of MSC Edge is now available for order, focusing on solid carbide holemaking and milling. A second phase of cutting tools is expected to launch in late 2025.

Gareth Evans adds: "MSC Edge represents the collective expertise and metalworking knowledge within MSC. These tools are designed specifically for engineering customers, enabling them to work smarter, not harder. With MSC Edge, they can enhance their efficiency, productivity and competitiveness in the market."

For more information about MSC Edge and to explore the range of cutting tools, visit: ***www.mscdirect.co.uk/msc-edge***

MSC Industrial Supply Co. is the leader in the supply of Metalworking and Maintenance, Repair and Operations (MRO) products. MSC helps organisations deliver operational excellence by providing engineering support across a variety of industries and metalworking applications. Whatever the challenge, MSC finds the right tool for the job and develops solutions to improve performance.

MSC helps drive greater productivity, profitability and growth with over 120,000 products, inventory management and supply chain solutions and offers extensive engineering and technical expertise from years of working across different industries. At the heart of MSC is its commitment to give customers control and its ability to demonstrate time and cost savings. Through its relationships with over 500 suppliers, it offers the broadest range of metalworking and MRO products. For further information visit: ***www.mscdirect.co.uk***

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Walter presents double-serrated GD grooving system

With the new Groov·tec™ GD 5011-P grooving system and the GD26 cutting inserts, Walter offers a new platform for parting off, grooving, copy turning and groove turning. The system, consisting of toolholder and two-edged indexable inserts, is characterised by a patented double-serration profile.

The innovative serration profile ensures an extremely stable, positive-locking connection between the robust tool body and the indexable insert. This connection reliably absorbs lateral forces and prevents the cutting insert from being pushed out to the side. This is particularly beneficial when groove turning, widening grooves, chamfering, copy turning and parting off. The precision-fit serration between the cutting insert and toolholder not only provides maximum stability and minimises wear, but it also achieves a longer cutting insert tool life. Furthermore, it extends the service life of the tool support by up to 50 percent.

Extensive field tests with customers showed that the Groov·tec GD grooving system can be used with significantly higher cutting parameters due to the innovative serration profile and the optional precision cooling. This, in turn, increases the throughput and productivity. Walter offers Groov·tec GD in shank sizes from 16 to 25 mm, 5/8 to 1", with insert widths from 2.5 to 6.0 mm for flexible use in a wide application range.

Another special feature is the new Tiger·tec® Gold indexable inserts that have been specifically developed for grooving. The four PVD and three CVD grades also play a part in making the system suitable for universal applications in steel, stainless steel, difficult-to-cut materials and cast iron materials. This makes the grooving system ideal for applications where high process reliability and precision are required, such as highly automated production or large batch production runs. And that's not all; manufacturers can benefit from 30 to 150 percent longer tool life than standard systems with prismatic clamping.

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. It 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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Horn wins Industry 4.0 award

Cutting tool manufacturer Paul Horn GmbH has received a second Allianz Industrie 4.0 Award Baden-Württemberg, underlining the company's continuous pursuit of innovation and its pioneering role in digitalisation.

To extend the service life of its inserts and solid carbide tools, which must meet the highest standards of precision and quality, Horn offers customers a reconditioning service worldwide. Refurbishment is carried out in fixed steps, regardless of actual wear. Previously, it was not feasible to document individual measurements or other data on receipt of the tool and after processing.

Horn's innovation has been to digitally map the life cycle of tools to enable the recording of quality-critical data using a web-based solution customised for specific groups of tooling products. The HORN Service Platform (HSP) prevents errors and reduces lead-times by digitally automating and accelerating administrative tasks.

The way in which HSP is able to streamline the assessment of the initial condition of worn tools after receipt and maintain order data in an Enterprise Resource Planning (ERP) system is the basis of the latest award.

More than 15 stations in Horn's factory have been connected to the tool manufacturer's

Industry 4.0 digital production infrastructure, for which the manufacturer was awarded an Allianz Industry 4.0 Baden-Württemberg Award in 2023. The most important processes monitored include laser marking, grinding, various tests and measurements, cleaning, blasting, coating, packaging and shipping.

The HSP digitally assigns a unique identification number to each tool manufactured, transcending the boundaries of a classic ERP system. For seamless traceability, data can be recorded throughout the servicing process and displayed on a web interface in a structured and transparent manner. It includes all quality-critical data, such as measured values, height, diameter, concentricity, etc., test reports, images and comments. Horn and its customers share one system, but with individual views and clear demarcation of the information.

Introduction of HSP has significantly speeded delivery of reconditioned tools and created transparency across the tool life cycle. Additionally, whereas servicing was formerly only economical for large quantities of tools, now smaller batches may be processed cost-effectively. The data collected provides the basis for future analyses and optimisation of manufacturing processes.

HORN is gradually rolling out this digital solution and will use it in other product areas, with gear skiving tools and PCD tools expected to follow.

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New Seco face milling cutter offers high flexibility and ease-of-use

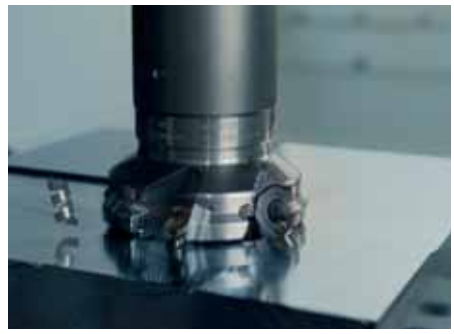
The new generation of the Seco Octomill 06 Face Milling Cutter provides significant improvements to ease-of-use, flexibility and stability. The cutter ensures self-centring of inserts for reliable, error-free positioning and incorporates a multi-insert pocket design that accommodates a variety of insert types for a range of applications.

Easy to use and reliable

Octomill 06 self-centring inserts allow operators to quickly and securely position inserts with high repeatability. The use of a long insert screw enables indexing of an insert without having to remove the screw from the cutter body. The cutter-insert interface design disconnects cutting edges from support surfaces and mimics the design of a double-sided insert while keeping the positive setting approach of a single-sided solution.

"This separation of cutting edges and support surfaces keeps worn portions of the insert from damaging or negatively impacting the performance of unused edges," says Seco product manager Tobias Jakobi."Furthermore, the self-centring feature prevents the occurrence of incorrectly positioned inserts that can cause instability, edge and tool breakage, costly work interruptions and the need for rework."

The Octomill 06 is a top choice for applications featuring unstable setups or thin-walled parts. Featuring a right-handed design with a straight cutting edge, Octomill 06 incorporates a high helix angle of +16° to reduce radial and axial forces and enable high-quality production. The cutter achieves smoother entry and exit and reduces back cutting effects. Additionally, Octomill 06 provides consistent wear along the entire cutting edge.



Flexibility across a wide range of applications

The multi-insert pocket design of Octomill 06 accommodates face milling, round and moderate high feed inserts. This allows a single cutter body to effectively perform a variety of applications, including face milling, ramping, helical interpolation and profiling. A diverse range of insert grades and geometries provides optimal performance in materials spanning the P, M, K, N, S and H Seco Materials Groups.

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Revolutionising machine shops across the UK

YMT Technologies, a machine tool, automation, tooling and workholding distributor based in Yeovil, has expanded its automation portfolio with the introduction of the Tuscan RC automation series, manufactured at its extensive facility in Somerset. Developed over several years, this vice and fixture handling robot has rapidly gained popularity, with numerous units already in operation across the UK and many more scheduled for deployment in the coming weeks and months.

YMT has been providing and supporting automation solutions for several years, partnering with leading brands such as Erowa and Cellro. While it will continue to offer these brands and its associated products, the YMT team is particularly optimistic about the Tuscan RC series, which is proving to be an exceptionally effective automation solution for many of its customers. The success of the Tuscan RC series can be attributed to YMT's talented team. It collectively brings decades of experience in the industry, particularly in robotics, leveraging its extensive knowledge to create a leading product that serves diverse engineering sectors throughout the UK.

The Tuscan RC automation series is particularly flexible and adaptable, just like the dedicated team behind it. The robot's shelves can accommodate workholding devices, such as self-centring vices or chucks, along with custom fixtures or a combination of these options. Despite its compact footprint, the robot can support over 50 stations, offering unmatched capacity for loading 3-, 4-, or 5-axis machining centres. It is important to note that there is no one-size-fits-all solution; the YMT team is highly adaptable to meet specific customer requirements. Having designed and built this automation solution in-house, YMT maintains complete control over any necessary adjustments and its team is very accommodating in this regard.

There are two models in the Tuscan RC series: the RC12 and RC35, with the numbers indicating the robot arm payload capacities. Both models utilise advanced robot arm technology from FANUC, a partner of YMT Technologies for several years. FANUC has decades of experience in manufacturing robotic technology and is recognised as a leader. When YMT selected a robot arm provider to be central to its design and build plans, FANUC's remarkable accuracy and reliability made it the clear choice. The 12 kg and 35 kg capacity arms are housed in the same chassis; the selection between the two

options depends on the items users intend to move between the robot and the machine tool and, essentially, their weights. Many subcontractors prefer the RC35, as it allows for a broader range of potential work in the future.

The controller, which was also developed by YMT's automation team, is user-friendly and devoid of unnecessary features, making it accessible to individuals at all experience levels. The robot arm gripper interfaces with a pull stud located on the back of a vice body or fixture, allowing the robot arm to transfer the vice or fixture from its housing position into the machine tool. A pneumatic chuck on the machine's bed engages with either a central location pin or four pins located on the base of the vice or fixture, depending on user preference.

Recently, Apollo Precision, a client of YMT, praised how it achieved a 72-hour runtime using its Tuscan RC35 in conjunction with a YCM NFX400 5-axis machining centre at its facility in Guildford. Impressively, during this extensive period, twelve different types of parts were machined, resulting in twelve unique programmes. Iain Harris, managing director at Apollo Precision, is so impressed with his Tuscan RC35 that he is set to receive a second cell in the early part of 2025.

Ultimately, YMT Technologies has developed a cost-effective, 24/7 operator that can interface with various machine types and brands for a truly universal system. The time invested in development, along with the skill, drive and passion behind this project, is evident. The outcome has proven rewarding for both the team at YMT Technologies and its customers, who are reaping the benefits.

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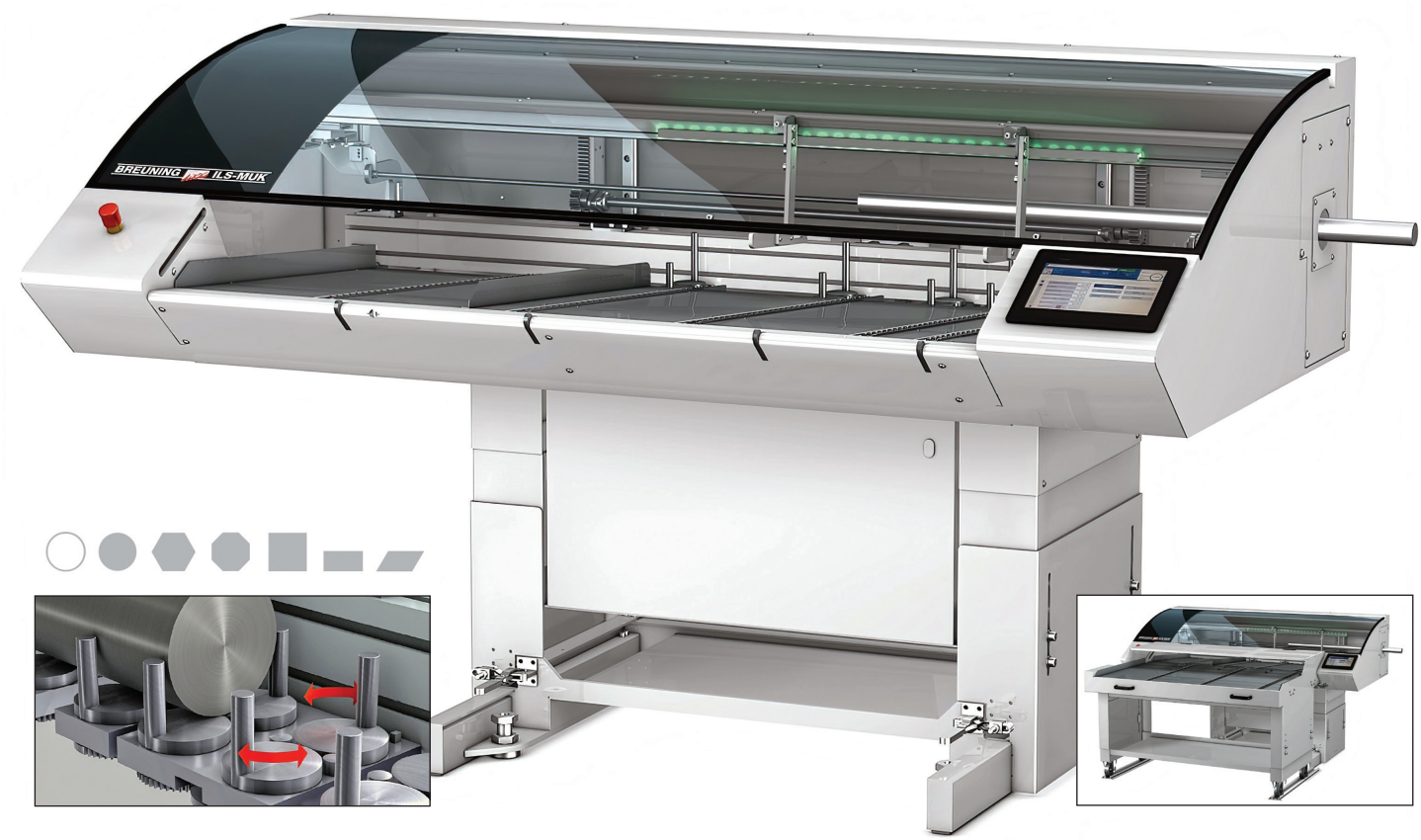

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85 years of engineering excellence

A legacy of world-class workholding and machining solutions

Brown & Holmes (Tamworth) Ltd has its roots in tradition, innovation and a steadfast commitment to excellence. Since its inception in 1939, Brown & Homes has met the challenges of some cataclysmic world events, adapting and evolving to become a leader in the delivery of precision machining and subcontract machining solutions.

The business was started in Coventry by Mr Brown and Mr Holmes, two ex-apprentices of Coventry Tool & Gauge, at the outbreak of the Second World War. Because they were a manufacturer and supported the defence effort, the company was soon advised to move away from the area, which was becoming a target for bombing raids.

The business relocated to Lullington Hall, just over the Staffordshire border and stayed until 1945. From there, it moved to a small facility in Tamworth, colloquially referred to as Underneath the Arches, because of the distinctive and well-known railway arches nearby. After a few more moves, the business finally settled in an area called Rosy Cross in Tamworth.

Origin services as gauge makers

Kevin Ward, the present joint-managing director, joined the business at that time. During the 40s and 50s, the main service of the business was predominantly gauge making, drawing on the experience of the two co-founders and capitalising on the needs of the wider manufacturing world.

In the 1960s, the company branched out into more manufacturing skills, working alongside Cincinnati Milicron, which had sites in Tamworth and Birmingham. Brown & Holmes expanded to manufacture special-purpose tooling, equipment, and components for machine tools.

Facing challenging times

Kevin Ward recalls: "Brown & Holmes faced many hurdles during these years and since then. In my own time with Brown & Homes, the company faced two very severe recessions, but the culture within the business was very much about steering the business through and supporting the staff as much as they could."

"In more recent times, my co-managing director Carl Baker and I have seen the company through the 2009 banking crisis, which was very hard on the business and more recently, the Covid pandemic, which was an event no one could have prepared for. We're very proud of the fact that throughout these challenges, we didn't lose a single member of staff."

Early years

When Kevin Ward and Carl Baker took over the reins, it was with a lot of debt and very little in the order book. In fact, their first day as new managing directors started with an eviction notice. From that daunting start, Brown & Holmes now operates from two sites in Tamworth and a further facility in Derby with 70 employees.

Change, diversification and growth

Today, Brown & Holmes designs and manufactures workholding and production solutions, lifting equipment, and various other production aids. The company has also invested heavily in supporting its rapidly growing subcontract manufacturing facility.

The Derby site has diversified into electrical control cabinets, bringing a totally different skill set into the business and providing growth that is outstripping the workspace.

Technology investment driven by efficiency and cost demand

Brown & Holmes' investment in technology goes hand in hand with customer demand to continually create leaner operations and drive costs down. The company feels that it is a nominal part of creating as many production efficiencies as possible, but it is very carefully considered and brought in for the right reasons and within the right partnership. Its primary motivation is that technology enhances and complements the business so that it continues to increase its level of performance and output.

A strong foundation for future success

No doubt, the world will continue to change and challenge Brown & Holmes, but the company

can look to the future with confidence that comes from a solid foundation. Adapting and exploring new technologies and skills that will allow it to meet the needs of its clients while staying true to the values that has seen it through its history. A blend of tradition and innovation that will set it apart and continue its success in years to come.

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New automation system from LANG Technik

Even more space-saving automation with RoboTrex Compact

The new RoboTrex Compact from LANG is a real eye-catcher. The automation system is not only visually impressive with its modern design, but also impresses with its excellent ratio of storage capacity to space requirements.

The focus of RoboTrex Compact is clear: small components with low weight. "Small" and "low weight" are of course a matter of opinion, so let us be more specific. RoboTrex Compact is an automation system that was specially developed for the unmanned production of workpieces with a size ratio of 65 x 50 x 95 mm and a maximum weight of up to 7 kg. The name therefore says it all. The latest automation solution from LANG Technik is even more compact than the well-known RoboTrex automation system and offers space for up to 100 Makro•Grip® Micro vices in its storage rack on a footprint of 2 m^2. Thanks to the option of changing grippers manually, RoboTrex Compact can also be used to automate larger vices from the Makro•Grip® 77 series, such as the Night King. With this assembly variant, the maximum storage capacity is 50 vices, 25 per rack side.

Like its "big brother" RoboTrex, the compact version is also a plug-and-play solution that ensures fast installation and commissioning. Within its housing, an already installed FANUC M-10iD-16s industrial robot transfers the 5-axis vices between the rack and the machine tool. Thanks to various loading options via the machine door or a side window, the system can be easily connected to almost any machine tool. Like the other automation systems from LANG Technik, RoboTrex Compact is characterised by user-friendly operation that requires no specialist knowledge and minimum training expenses.

LANG Technik UK has been established to provide sales and application support for new and existing customers of its 5-axis workholding and automation systems.

Its goal is to increase customer productivity by perfecting manufacturing processes. It offers a complete and proven package of workholding, Zero Point clamping and automation for machine tools. Its pre-stamping technology is considered a 'benchmark' in workholding making its 'all in one' solution truly unique.

LANG Technik UK Ltd
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High quality spindle tooling from Leader

Hit the spot for accuracy and delivery

Following an exclusive agreement signed at the recent AMB show held in Stuttgart, workholding and machining efficiency specialist Leader Chuck International will provide full technical sales and service support in the UK and Eire for the German specialist, HPCHO GmbH and its extensive range of hydraulic toolholders. Compatible with most leading brands such as Schunk and WT, the hydraulic toolholders are recommended for spindle speeds up to 25,000 rpm and are balanced to G2.5. Currently there are almost 5,000 products in the company's extensive portfolio and HPCHO is always focused on further development of its hydraulic chuck range.

Leader Chuck's managing director, Mark Jones, states: "Hydraulic toolholding offers several significant benefits to users in the machine shop. However, until now, the price has been a major hurdle to overcome in order to attain these advantages. With the HPCHO range, UK manufacturing businesses can unlock the full potential of their high-speed machine tools for around a third of the cost of the holders currently available."

With no machine required to heat the holder to fit the tools, hydraulic toolholding is easier to manage than heat shrinking. Alongside this, users do not have to wait for half an hour or so for the cool-down cycle after heating, making it a much faster process.

As well as the increase in concentric accuracy, the natural damping of the oil pocket within the holder provides benefits for the cutting tool, increasing tool life by a measurable margin. The expectation is that a drill previously running for 200 holes before being exchanged, would increase to between 250 and 300 holes.

For ease of operation, the locking mechanism for the hydraulics in the HPCHO design is self-governed. Simply screw to the bottom and once it stops the correct pressure is applied to secure the tool to achieve the cutting parameters stated for each product.

"Historically, due to their higher unit cost, hydraulic toolholders have usually only been used when expensive cutting tools are applied and often only on very recent machine tool installations. With these cost-effective holders now available from Leader, machine shops can use better manufacturing technology without paying any cost premium. They will allow any CNC machining or turning centre to be used at its full potential," explains Mark Jones.

He concludes: "With tool life typically increased by up to 40 percent, improved surface finishes and reduced cycle times offered by simply using hydraulic toolholding, the question has to be, why wouldn't you?"

Based in Tamworth UK and Co. Dublin Ireland, Leader Chuck International has an enviable reputation for the in-house design and production of Leader chucking, stationary clamping, gripping and workholding products. A respected brand name for high quality equipment with more than 70 years' experience, the company also stocks products from the very best suppliers, such as: Adaptix; AMCC; AutoGrip; Balance Systems; Blue Photon; CARVEsmart; Cucchi Giovanni; Exact Machinery; FIAL; Gamet; Hainbuch; Hewa; Homge; HPCHO; Jato; K T A Spindle Tooling; Lexair; Llambrich; Maprox; Mate Precision Technologies; MicroCentric; N G Toolholders; Omil; Orange Vice; Panzeri; PiranhaClamp; PosiStop; Rotomors; RotoRi; Sogimut; Tecnologie FRB; Walmag Magnetics and ZeroClamp. Proud to provide the best solution in workholding, toolholding and machine monitoring and loading, Leader offers comprehensive, independent ranges of the highest quality, precision and reliability at competitive prices with reliable expert advice and a commitment to customer service.

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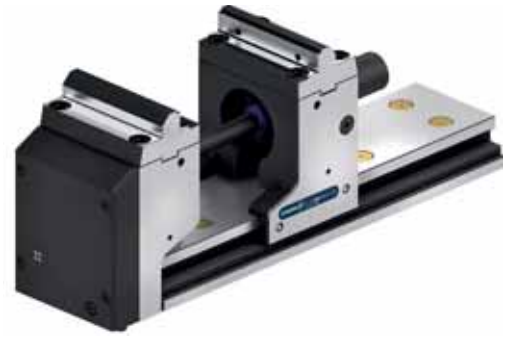

With the KONTEC KSX-E, SCHUNK is launching the first 100 percent electrically driven 5-axis vice with infinitely programmable clamping stroke. It is another future-ready component for digitalised and energy-efficient production.

Digital technologies create more energy-saving, efficient and flexible manufacturing processes. They are key components for a 'Healthy Factory,' a production facility that is both healthy and economically successful. With this goal in mind, SCHUNK is also making its clamping devices increasingly parameterisable and networkable. The advantages are particularly evident in the machining of small and medium batch sizes and in transparent process monitoring. For this purpose, SCHUNK has added an electrically driven version with a freely programmable clamping stroke to its proven KSX series of 5-axis vices: the KONTEC KSX-E.

Digitalised process monitoring

The new KONTEC KSX-E with 24 Volt DC is controlled via spring contacts at the bottom or a side-mounted wired connector. All programmable parameters such as clamping force, clamping stroke or jaw position can be controlled at the same time and can be transferred and evaluated via the integrated IO-Link interface to the machine control unit. An IO-Link is a fieldbus-independent point-to-point connection, in which the clamping device can be integrated into the corresponding fieldbus system via an IO-Link master. In the future, it should be possible to transfer and set the data via wireless communication or cable to an app.

Optimal 5-sided accessibility

A large clamping range of up to 420 mm and the pre-positioning of the jaws make the KONTEC KSX-E particularly flexible for automated machine tending with a high part variation. Thanks to its geometry with very high jaws, the vice provides optimal accessibility for 5-sided complete machining on 5-axis machines. The upper-lying spindle makes sure that the clamping force is applied directly below the workpiece and thus prevents the jaws from lifting up. Moreover, the continuously programmable clamping force of up to 40 kN per jaw ensures that the workpiece can also be clamped process-reliably and vibration-safe even with minimal clamping surfaces. The vice also works reliably under the influence of chips, dirt, or coolant. Its complete sealing and encapsulation, electronics and actuators are also well protected.

The comprehensive range of SCHUNK system and top jaws rounds off the complete package of KONTEC KSX-E. Suitable jaws are easy to find via the digital SCHUNK chuck jaw quickfinder. SCHUNK will offer the KONTEC KSX-E in size 125 from the first quarter of 2025 on.

SCHUNK Intec Ltd
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NTR's Tool Health Heroes leaping into a brave new future

With the fantastic news that NTR Ltd has evolved from a privately owned company to one owned by an Employee Ownership Trust (EOT), NTR's Tool Health Heroes are very much set for a bright future.

Founded 47 years ago, NTR Ltd has gone from strength to strength since its acquisition by managing director Chris Weeds and his fellow investors; Martin Allison, Graeme Allison and Mike Shotton in July 2016. Based in Wetherby, West Yorkshire, the business serves the UK and 14 countries across Europe and boasts an enviable customer list.

NTR has repaired close to 2 million damaged metal cutting tools and driven/live tooling units over the years, with the service growing in popularity due to two inescapable factors; economics and the environment. With its EnvironmenTOOL Service, NTR aims to provide a practical solution for both.

As we all know, escalating material costs in tooling manufacture have seen prices rising year on year and cheaper alternatives are often of inferior performance. The NTR EnvironmentTOOL Service has come to the rescue saving businesses up to 60 percent of purchasing a replacement new tool.

The Tool Dentist

In many workshops when a tool is damaged, it is simply scrapped and replaced with a new one. This same process happens month in, month out with little consideration of the cost to the business or the environment.

Usually when Chris Weeds describes NTR as a Tool Dentist, his audience grimaces: "No one likes to think about breaking or chipping a tooth, but just like a dentist, NTR will have your cutting tools working like new."

Much of the tooling that arrives at NTR looks so badly damaged that most machinists would never imagine that the tooling will be returned to them within the week as good as new. NTR aim to return tooling within the week and can even prioritise specific tools for urgent production issues.

EnvironmenTOOL Service: 5 simple steps

- Gather all damaged tooling together.
- Package securely, arrange collection to NTR by courier.
- We'll email an itemised quote within 24 hours.
- Confirm the items you wish to repair.
- Receive tools back ready for use within the week.

NTR also offer a rapid repair service on a 48-hour turnaround for when disaster strikes, which are returned on a next day delivery service - you certainly won't be without your tooling for long and like all good dental patients, each tool is given a sticker to go home with too!

The Driven Tooling Doctor

Due to the wealth of knowledge in the NTR Team, when customers started to request repairs and maintenance to their driven/live tooling and angle heads, the Team were able to answer that call. With the development of the health MOT: The Driven Tooling Doctor was born. Thanks to investment in The Doc's surgery, he and his team worked tirelessly to spot symptoms, diagnose issues and bring driven/live tooling units back to full health.

As an obvious complementary service to NTR's tooling repair and reclamation services, its Driven/Live Tooling Service and Repair Facility was instantly supported by over 30 specialist engineers, who collectively enjoy over 700 years of experience within the tooling sector.

Operations director, Sam Wood explains: "As a manufacturer, we understand that keeping machines running is crucial to a business. A machine down often means missed deadlines, resources not utilised and most importantly, unhappy customers. Offering a repair and service package has meant less downtime for numerous high-profile clients."

"Every unit is pre-inspected, ultrasonically cleaned prior to a quotation being generated and awaits customer authorisation before work commences. At all times, customer visibility and transparency is key to our business ethos and value proposition."

The Doc's 10 step process

The unit arrives on site at the NTR surgery
The unit is booked in and allocated a works order tracker number, then checked for aesthetic damage.

The unit is stripped down and assessed for service/repair
A free thorough pre-quote health check is undertaken with photographs and/or video where applicable.

Full quotation with photos are emailed within 48 hours
An assessment of the unit's requirements is produced for every unit prior to commencement of service/repair.

When the PO is raised, the unit enters the service/repair process
The unit is allocated its own unique NTR Passport Tracker Number, which stays with it through its service life.
A report with a detailed replacement parts list is created and picked
NTR keeps OEM spares in stock for a quick turnaround, while special order items such as gears are ordered directly.
The unit is carefully reassembled and gradually run-in
Using a light load to stabilise all moving parts, further tests are carried out to verify noise and heat generation.
The Doctor tests and verifies TIR, temperature and noise
The NTR Passport fully records the results for each unit to build a complete health history.
Finally, moving to speed step verification
The unit is taken through a range of speeds and, if required, loadings, which gives the customer confidence that all parameters are correct.
Certification is signed and the NTR Passport stamped
NTR's Customer Service Team will contact you when your next service is due, which typically, will vary between 6 to 12 months depending on usage.
The unit is packaged and despatched by the NTR Health Team
Along with your certification and NTR Passport, your unit is packed in recycled packaging using 'green couriers' to deliver your unit safely.

Introducing the heroic assistant: Nurse N. VIRO

Whilst research has shown that only around 29 percent of UK manufacturers class Net Zero as a priority, NTR has found that most decision makers from large conglomerates to smaller private engineering companies are considering the environmental impact of their businesses. Our medical assistant: Nurse N. Viro knows the difference that her motto of "Reuse Recycle Reclaim" can make to our planet.

Repairing damaged tooling is not only a cost-effective way to manage your tooling, but also a more environmentally-friendly process. Working with local suppliers where possible, and producing fewer carbon emissions, repairing and reusing your tooling is great for your budget and better for the environment. It's estimated that Nurse N. Viro, last year alone, recycled at least 268,000 kg of metal tools.

With ISO 14001 Environmental Management targets and companies tasked with lowering their carbon emissions, NTR have become a key element of their client's environmental strategy. Nurse N. Viro and her EnvironmenTOOL Service hopes to underline this for new and existing customers alike.

Manufacturing engineer, Emily Ball, who joined the company as an apprentice, is unapologetically a believer: "As one of the younger members of the NTR team, I love the green aspect of what we do. The more we re-use the planet's resources, rather than plundering it further, the better it is for everyone. Recycling is second nature to NTR, and now we are celebrating our green credentials through our EnvironmenTOOL Service. Going forward I'm excited to say that all our repaired tools will be both figuratively and literally green."

And finally...

Chris Weeds is proud of NTR's achievements over the last few years and sees great things for them in the future as they reach international audiences under their new EOT status.

"For all of us at NTR, it's a matter of changing the mindset of machinists, tool room managers and business owners. The message is simple: stop wasting money and precious resources by throwing away broken tooling. Together we can make a small difference that can result in great change."

With its enduring investment into technology, new machinery and raising awareness of how we can all be greener, you can be sure that NTR will continue to grow and meet the tooling needs of the future.

Remember, the next time you crash a tool, the Tool Health Heroes are here to save YOUR world

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Metrology solutions from Bowers Group boost Tenable Screw Company's manufacturing excellence

Tenable Screw Company, a well-respected name in precision manufacturing subcontracting, has seen a significant boost in its operating standards with the help of Bowers Group's advanced measurement solutions, including the Baty R14 profile projector and Venture 2510 vision system.

As a company driven by the quality and precision required to serve critical applications, Tenable invests only in the highest quality inspection tools to enable its team to verify even the most complex features with uncompromising precision.

Dan Leigh, quality & IT manager at Tenable Screw Company, says: "Our association with Bowers Group spans many years. We've been using their equipment and systems since the beginning, including Baty profile projectors and hand tools that remain in regular use. In fact, we were among the first to own shaft measurement machines on the market.

We endeavour to invest in the best equipment to ensure our machines operate at peak performance and that the parts they produce are top quality. Many of our components are used in critical applications where failure is not an option. Making sure that the parts that we make are correct is absolutely imperative to both our customers and our success as a business. That's why we continue our partnership with Bowers Group. Our extensive range of Bowers-supplied equipment includes the latest shaft measurement and visual CMM systems, as well as traditional profile projectors, ten of which are in use across our three sites."

For Tenable, these tools are more than just equipment, they are the backbone of a commitment to quality that has defined the company for over 75 years, earning a strong reputation for economically and efficiently manufacturing precision-turned parts, from prototype development to mass production.

With 228 production machining centres, including 71 CNC machines, Tenable are one of the UK and world's premier subcontract machining companies for high volume basic and complex precision turned parts. With all manufacturing happening in the UK across its three factories, it offers full traceability,

certificate of conformity and component specific quality plans as requested.

Specialising in medium to high-volume production, Tenable produces components ranging from just 0.3 mm to over 50 mm in diameter, with quantities spanning from thousands to millions of units. Guaranteeing a high level of precision in every component is paramount, as its customers rely on the company to provide parts that perform flawlessly under extreme conditions. The ability to consistently meet these rigorous standards is what Tenable uses to set itself apart from its competitors, highlighting its role as a trusted supplier for companies within these sectors.

Profile projectors, versatile tools in its cache, allow the team to directly measure a wide range of features, compare parts against known standards, and serve as visual inspection tools at various magnifications.

The Baty R14 is used both on the shop floor by the production team and by dedicated inspection teams and is particularly integral to its operations, allowing the company to measure complex components with accuracy and efficiency. Designed to handle a wide range of non-contact, intricate measurements, from the minute details of screw threads to the overall dimensions of components, the R14 ensures every part meets strict quality standards.

A powerhouse in precision measurement, the Baty R14 is specifically designed to tackle the most demanding component inspection tasks. This advanced profile projector boasts a 14-inch screen, providing clear and detailed images for the accurate measurement of complex components. Whether it's intricate thread profiles, or small, precision machined turned parts, its robust optics and intuitive digital readout system ensure that every measurement is accurate and reliable. Its ability to perform high-precision measurements with ease makes it an indispensable tool for confirming that every component meets stringent quality requirements, ultimately contributing to enhanced product reliability and performance.

Tenable also leverages the advanced capabilities of the Baty Venture 2510 vision system to boost its precision measurement processes. This sophisticated vision system is particularly valuable in operation due to its ability to measure intricate features on small components with high accuracy.

The Baty Venture 2510 is designed to provide accurate and efficient inspection of complex components, which is essential in industries where even the smallest deviation can lead to significant issues.

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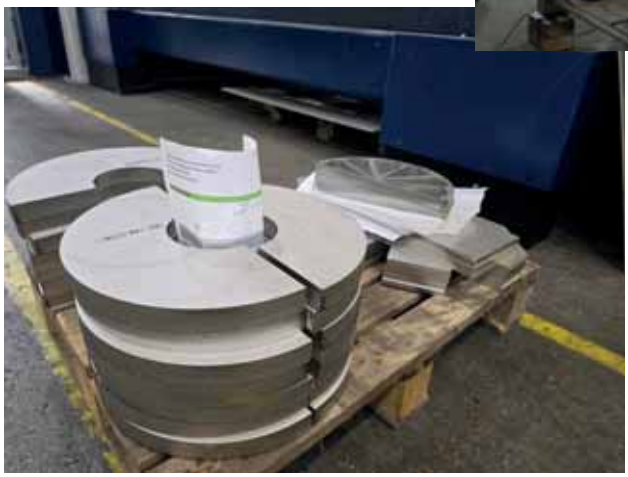
Lantek delivers top class service for DMS Laser Profiles

For laser cutting specialist DMS Laser Profiles, fast and accurate quotation preparation, easy program generation for its Trumpf lasers and responsive after sales support were the key reasons that it chose to replace its existing system with Lantek software in May 2024.

The company based in Maidenhead, Berkshire, specialises in stainless fabrication primarily in the petrochemical, process engineering, pharmaceutical, food and water sectors, along with many other industries. Initially it subcontracted the laser cutting but moved this inhouse in the early 2000s to improve supply line security and reliability. Josh Hall, sales manager says: "We generate around 230 quotations every month and we have checked the costs and prices generated by Lantek against the actual costs and it is really quite accurate. Additionally, during installation and commissioning, where the costs did not line up, Lantek engineers quickly fixed these discrepancies."



As well as costs for laser cutting, Lantek's Integra Quotes software also generates prices for other operations such as folding and welding and outsourced operations such as powder coating. It also generates invoices for completed work and integrates with the company's accounting software.

Typically, CAD data for a new job is either fed into Lantek Expert for flattening, or where there is an assembly of parts, processed in Solid Works to get the individual flattened components. Around 11 dedicated estimators and programmers use the Lantek software, overlapping responsibilities, pre-nesting parts into 2.5 m x 1.25 m or 3 m x 1.5 m sheets as part of the quotation process, prior to the final nesting and programming when the job is released for production.

Josh Hall adds: "With Lantek we can track parts back to the individual sheet it was made from, which is very important for our ISO traceability requirements. We can also use up remnant material and trace parts made in these remnant sheets, improving material utilisation while maintaining quality standards."

DMS Laser Profiles has just upgraded its Lantek software to include Lantek MES. This will enable the company to trace parts as they move through the workshop. The laser machines are directly wired in to the software so that real-time data is collected, further increasing cost accuracy and making it much easier to plan and execute the production process.

Josh Hall says: "Expanding our Lantek software was an easy decision as the support we get is very responsive, so we are confident that this next step will be a success."

The addition of Lantek MES will help DMS Laser Profiles integrate and automate its production processes further. Material costs will be updated as they change and the company will be able to anticipate workloads for all its manufacturing stages, enabling it to generate even more accurate costings while scheduling manufacturing flow through the workshop. This will result in precise delivery predictions for its customers' parts. Furthermore, as data is centralised and accessible, quotations and delivery status enquiries will always be consistent irrespective of who deals with the customer. With Lantek's software, all this is achieved while greatly reducing the administrative effort and non-productive hours required to maintain high quality information.

Josh Hall concludes: "The Lantek software is nicely set out and user friendly, it is much simpler than our previous system and a massive improvement. We will be able to easily track where parts are and the improved traceability is very important for our ISO compliance but, the most important improvement for us has been the service and response we get from Lantek, quickly fixing any issues we have with the software and its use."

Lantek is a multinational which is leading the digital transformation of companies in the sheet metal and metal industry. With its patented manufacturing intelligence software, it enables factories to be connected, turning them into Smart Factories. It rounds off its range of services with CADCAM, MES and ERP solutions for companies that manufacture metal parts from sheet metal, tubes and profiles using any cutting technology.

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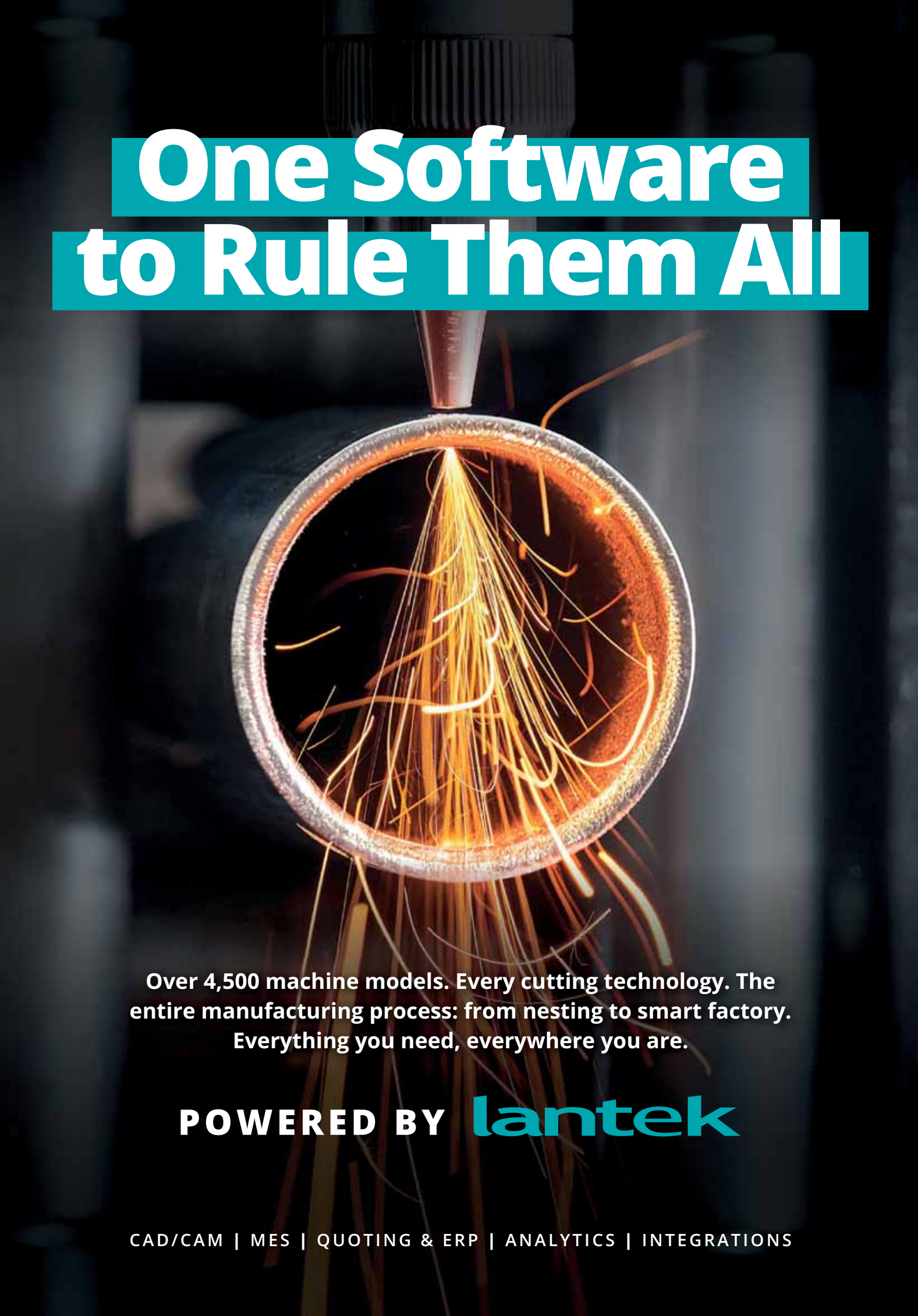

One Software
to Rule Them All
Over 4,500 machine models. Every cutting technology. The entire manufacturing process: from nesting to smart factory. Everything you need, everywhere you are.
POWERED BY lantek
CAD/CAM | MES | QUOTING & ERP | ANALYTICS | INTEGRATIONS

KS Composites on fast track with hyperMILL

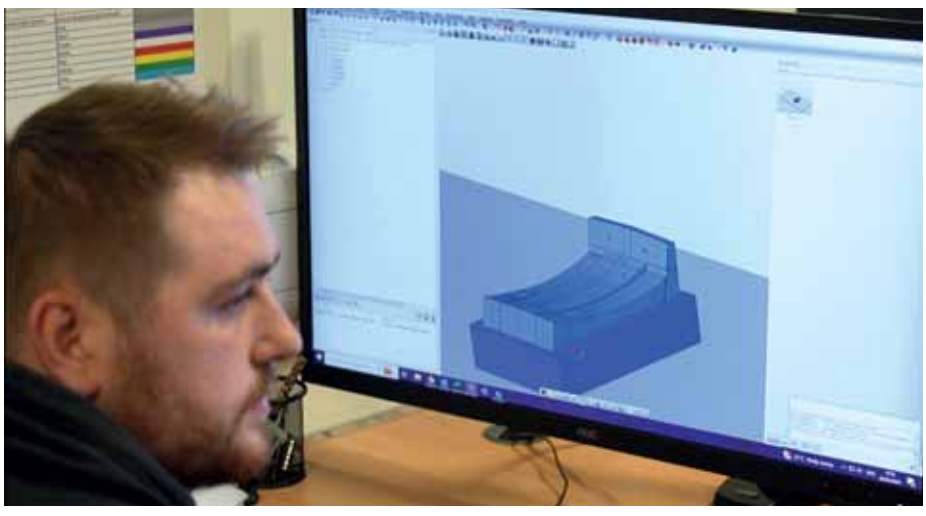
Embued in the motorsport industry since Kelvin Smith opened the doors for business in 1985, KS Composites is a manufacturer with a pedigree of working with numerous F1, GT, Le Mans and BTCC teams. Throughout its history, Melton Mowbray-based KS Composites has worked at the very pinnacle of motorsport and that is why the company has invested in CADCAM software from OPEN MIND Technologies.

Having formed many close relationships with some of the leading lights in design and consultancy through prototype and development projects, KS Composites offers design services, FEA and CFD. This is complemented by a 48,000 sq ft manufacturing site that supports the design and consultancy services with everything from kit cutting, fitting and assembly to wet lay composites, autoclaves and ovens, a composite shop, machine shop and much more. Whether it's the development of new lightweight wind turbines, the production of super-efficient alternative energy vehicles or the unique demands of the aviation and military industries, KS Composites approach all projects with the same enthusiasm and professionalism.

Dan Johnston, business development manager at KS Composites says: "A turnkey composite solution provider that offers a range of services, from engineering to 3D printing and CNC machining, as well as composite manufacturing. Each customer has an individual requirement that we really have to respond to, everyone has nuances within their projects and programmes and we need to be able to leverage every service we have to provide for our clients. Customers will initially come to us with a fully developed idea or just the genesis of an idea. What that journey looks like will depend on each client, but we can fundamentally take an idea and our engineering division will deliver the solution. If someone has a blueprint for a project, we are agile and responsive enough to deliver on time."

Exhibition car manufactured by KS Composites.

Discussing the relationship with OPEN MIND Technologies, Justin Tallboys-Cotton from OPEN MIND adds: "KS Composites came to us because of their needs, which are not only metallic but also composite machining. This encompasses everything from 3-axis vertical machines to complex 5-axis gantry-style machines. One thing that KS Composites liked about hyperMILL is that the licenses are very modular, so while they use the 5-axis licences that we are famed for worldwide, they don't need all of it. So, KS Composites just chose the two or three modules needed to do their work. They know they can expand if needed, but they don't need to invest in everything up front."



A KS Composites programmer using OPEN MIND's hyperMILL.

Looking at a replica race car the company has manufactured, Dan Johnston adds: "On the vehicle itself, there is a multitude of things. We have carbon composite body panels and machined GRP and 3D printed elements. We are hitting on all our core services with this vehicle. One of the first things to come into our new building was CNC machines. At that point, we identified that we needed a CAM package that could get the most out of our machines. We went to the market and evaluated the options and it was clear from the offset that hyperMILL was the obvious choice."

Justin Tallboys-Cotton adds: "It makes me extremely proud to see how KS Composites are embracing the tools that we have within hyperMILL. For example, they colour-code their components and use bookmarks and templates. What this is giving them as a company is consistency throughout the process, especially when different guys' programs work in different ways. It also helps with time to market; KS Composites can reduce the programming time to a bare minimum, ultimately getting parts onto the machines quicker to keep their customers happy."

Dan Johnston concludes: "hyperMILL is making our life so much easier, especially when we are making things like a show vehicle. We are representing motorsport's pinnacle- high-performance, high precision. So, when making the patterns for this vehicle, they had to be of the same quality and that is what we have achieved with hyperMILL."

OPEN MIND Technologies AG is one of the world's leading developers of powerful CADCAM solutions for machine and controller-independent programming. It develops optimised CADCAM solutions that include a large

KS Composites are renowned experts in manufacturing lightweight motorsport components.

OPEN MIND's Justin Tallboys-Cotton with KS Composites Dan Johnston.

number of innovative and unique features that can deliver significantly higher performance in both programming and machining. hyperMILL® is a completely modular CADCAM solution that provides state-of-the-art CAM technologies on its own CAD platform: from 2.5D, 3D and 5-axis machining as well as turning strategies and solutions for additive manufacturing, HSC and HPC machining. Whether automation, simulation or virtual machine, trendsetting technologies expand the product range and enable continuous digital process chains. Special applications, the perfect interaction with all popular CAD solutions and a customer-oriented service complete the product range.

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Tebis CAM automation with Virtual Machine library

Tebis CADCAM software offers a unique Virtual Machine library which helps customers to plan, program and verify NC machining operations all in Tebis CADCAM programming environment, together with five other Tebis database libraries: cutting tools with advanced machining parameters grouped for different materials and different machines, geometric features associated with machining features, machining cycles and machining processes.

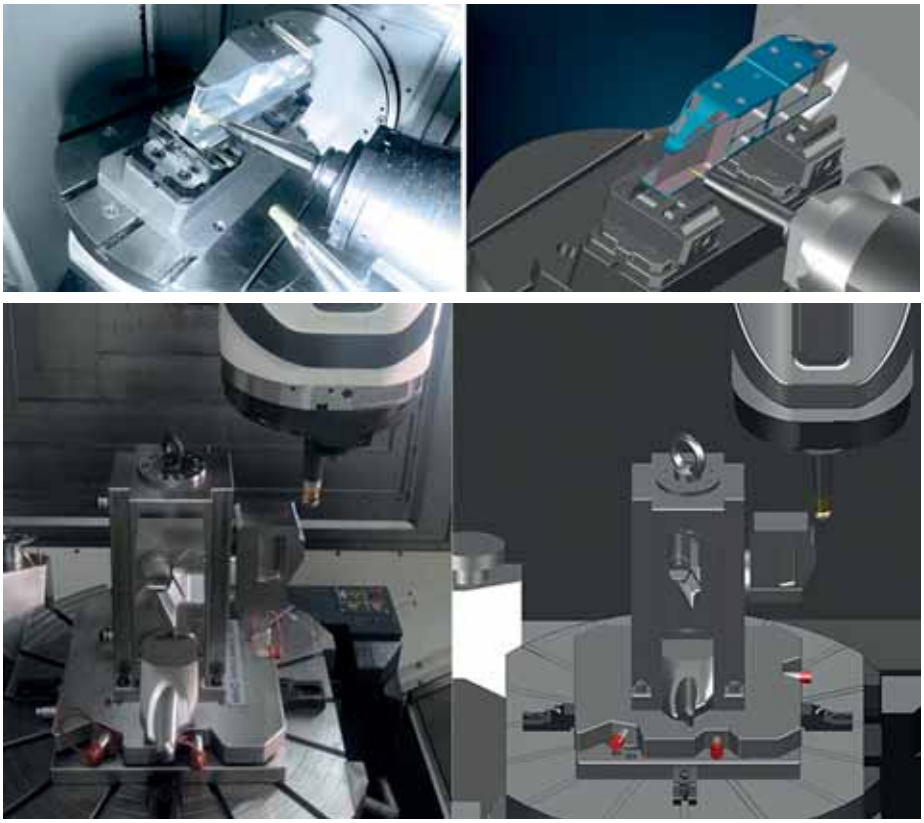
Tebis software uses Virtual Machine technology at three stages of CAM work: planning, programming and verification. Most other CAM software systems may only use machine tool geometry models for verification and this type of verifications usually don't support advanced features of Tebis Virtual Machines.

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

For programming, Tebis uses Virtual Machines for toolpath calculation in addition to cutting tools, toolholders and machine tool heads. Virtual Machine geometry information and machine tool axis limits are included for toolpath calculation. It is possible to see when programming if a toolpath angle can be achieved on the machine. Tebis will not allow creation of a toolpath which is not achievable in reality. Also, special parameters for the Virtual Machine can be defined during the programming stage to account for certain applications such as: activating of particular parameters which you may not always want to be active. With Tebis, what you see is what you get.

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

Tebis Virtual Machines also supports verifications of machine tool macros and links between toolpaths, which are usually not supported by most other CAM systems though these potential collision damage costs can be very high.



Additionally, Tebis Virtual Machines build machine tool kinematics into them. One of the benefits of this is accurate estimations of machining time, which is especially useful for work scheduling.

Tebis not only provides off-the-shelf catalogue Virtual Machines, but also come to customer sites to measure the actual machines when required to create exact digital mirror of the machines on the shop floor. Tebis team will come and measure the physical machines and create Virtual Machines together with associated post-processers with a sign-off procedure. This is to create the exact digital mirror of the machines together with the controls for maximum safety.

Tebis Virtual Machines can also be used for Tebis CAM automation templates. It is possible to choose a machine and apply it to pre-defined machining processes, with automatic setup position and machining parameters, etc."

Virtual Machines in the library can be grouped as the customer sees fit, possibly, small medium, large machines or the machine for particular tasks, roughing, finishing and etc. This supports the best uses of the machines with tested and optimised machining parameters.

Tebis Virtual Machines can also have tool magazines attached to them, to ensure the correct tools with both fixed and random position carousels and these again can be mixed with manual tool changes for tools from a cabinet rather than in the magazine and even handle special tool builds.

Finally, Tebis CADCAM software can support a wide range of machines. It could be standard vertical milling machines, 5-axis milling machines, lathe with multiple turrets, turnmill machines or even robots. All of these are within one integrated CADCAM software package.

Tebis Virtual Machine for CAM automation is to make your manufacturing process safe, to ensure machining quality and to maximise machining productivity while reducing CAM work difficulty, time and costs.

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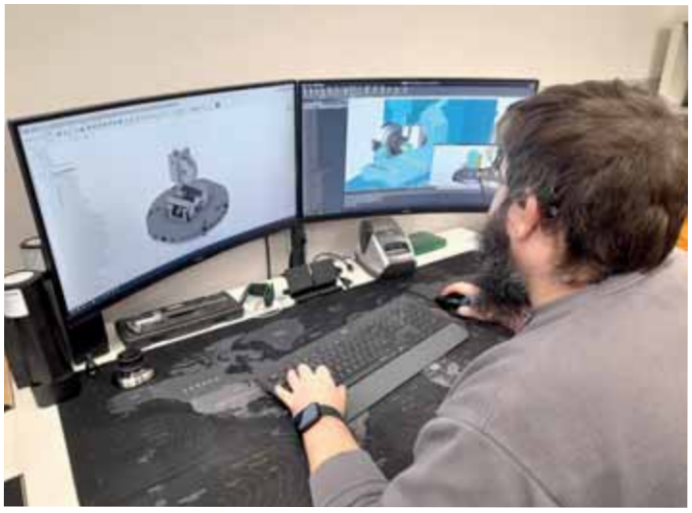
Vericut software helps Rigging Projects stay ahead of the curve

Rigging Projects, a specialist in the design and manufacture of marine hardware and sailing systems, is tapping into the advantages of Vericut CNC simulation, verification, optimisation and post-processing software to drive home the gains available from a sizeable investment in its first 5-axis machining centre. Using Vericut, the company has complete peace-of-mind in the single setup machining of complex parts with curved freeform surfaces, confident there will be no collisions and no expensive repairs.



Ian Foss, CNC programmer, using Vericut to check the through-deck sheave block.

Tobias Hochreutener founded Rigging Projects in 2014 based on his vision of a rigging consultancy business that put smart ideas, trustworthy services and high-quality products at its core. From humble beginnings in his tiny home office, the company now has over 30 employees, four DAME Design Award Special Mentions and a high-technology manufacturing facility in Hampshire.

Vericut stands out

Rigging Projects scrutinised various options for its verification software. Some were ruled out for reasons such as cost or lack of UK support, but Vericut ticked its boxes. Ian Foss had also used Vericut previously and could vouch for the software's capabilities. He visited the MACH 2024 exhibition in Birmingham with Chris Whitwam, head of engineering, to speak with the Vericut team and the company never looked back. Rigging Projects duly invested in a seat of Vericut, offering Verification, Multi-Axis Machining, Machine Simulation and Auto-Diff capabilities. A cloud-based licence means that the two CNC programmers at Rigging Projects share the single seat. It also supports home working as necessary.

Complex parts are par for the course at Rigging Projects. Components that handle a line or sail cannot feature sharp corners, while meeting the high expectations of yacht owners also means aesthetic appearance is paramount. The company's parts therefore feature many radii, rounded edges, curves and freeform surfaces, all of which means programs with plenty of 3D surfacing.

Value proposition

The value of Vericut's ability to avoid collisions on expensive machine tools should not be underestimated. Repairs to hardware such as spindles are extremely costly, as is machine downtime. Furthermore, a company like Rigging Projects would be forced to create new programs for other machines while waiting for the repair. Avoiding just one collision will likely more than cover the cost of Vericut.

Another valuable use of Vericut at Rigging Projects is AUTO-DIFF. Applied after simulation, AUTO-DIFF makes sure the CNC programmers do not miss any features and avoid major gouging or excess stock on the model that should be finished. The company also takes advantage of Vericut's X-Caliper measuring tool, clicking on critical features to ensure that the programming of mid-limit tolerances meets with expectations, for example.

Ian Foss concludes: "With such a large, fast, 5-axis machine like our Matsuura, Vericut is an insurance policy. Moreover, with its pallet-change capability, we often leave the machine running overnight. Knowing we have Vericut as a safety net provides real peace of mind."

Vericut UK
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At the cutting edge

Advanced beam laser technology from Mazak

To address evolving market trends and meet customer demands, Yamazaki Mazak has expanded the Mazak OPTIPLEX NEO series with the introduction of a powerful new 20 kW model. This upgrade is driven by key factors designed to bring significant benefits to its customers.

One of the primary motivations behind incorporating 20 kW laser power into the OPTIPLEX 3015 NEO and OPTIPLEX 4220 NEO models is Mazak's commitment to meeting market demand. With customers seeking high-performance solutions, this new model is meticulously designed to not only meet but surpass these expectations.

The enhancement of laser power to 20 kW brings a substantial improvement in cutting performance across various materials and thicknesses. This power boost translates to faster and more efficient cutting, ultimately enhancing overall productivity.

Gaetano Lo Guzzo, director of Laser Business says: "Basically we can cut all metal materials; in particular this machine is very suitable for carbon steel, stainless steel and aluminum with thickness up to 50 mm.

"These developments would benefit companies that needs high production of metal sheets made with high quality. The plant is also equipped with a Mazak Smart Manufacturing Cell system that ensures automatic selection of cut pieces and removal of scraps in complete safety for the operator. In this way, the laser cut pieces will be ready for the subsequent bending, welding and painting operations."

Furthermore, the introduction of the 20 kW model takes nitrogen cutting to the next level. The increased power allows for cutting thicker materials and faster speeds when using nitrogen as the assist gas. The implementation of this 'cold cutting' method not only reduces gas consumption and delivers significant cost savings but also ensures superior finishing, which leads to reduced cleaning needs for the workpiece in subsequent operations.

Exploring the flexibility and automation advantages of Beam Shaping technology

A unique development for Mazak is the Variable Beam Mode combined with the Beam Diameter Control which delivers the Beam Shaping function. This represents a transformative leap in laser cutting processes, delivering substantial productivity enhancements for sheet metal processing. This groundbreaking combo, a one-of-a-kind in the industry, provides a diverse array of beam shapes achieved by precisely modulating energy distribution within the laser beam.

The various beam shapes are accomplished through adjustments in both beam diameter and energy distribution patterns, offering a dynamic solution tailored to a wide range of cutting operations.

For instance, Beam Shaping allows for the provision of focussed energy, resulting in a reduced kerf and high laser concentration at a single point. Alternatively, it enables the delivery of a focused beam with a lower crest, minimising energy consumption by distributing energy across a broader surface area. This results in a wider cutting kerf, simplifying the expulsion of molten material and ensuring a cleaner cutting surface. When cutting thick materials using oxygen, the recommendation is to distribute the entire energy over a larger surface area, as concentrating the laser at a single point risks excessive heating and uncontrolled fusion.

By widening the cutting kerf, material expulsion becomes more efficient, resulting in a smoother cutting surface.

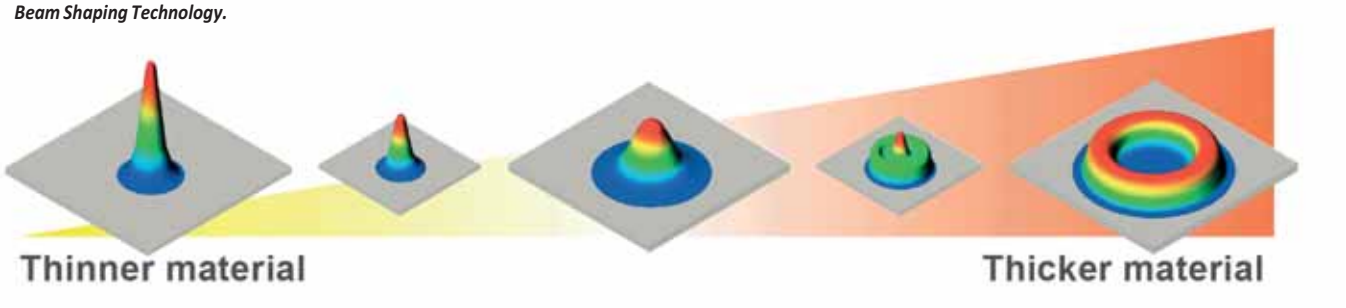
With the increased cutting power and the ability to work rapidly and efficiently using a big kerf, the implementation of automation solutions is greatly facilitated. The larger kerf width allows for easier handling by robots, enabling them to pick up pieces and position them on multiple pallets for further movement.

All in all, the combination of advanced features, maximum flexibility and automation functionalities of the OPTIPLEX NEO series ensures optimal performance and maximises the advantages of beam shaping in sheet metal processing.

Gaetano Lo Guzzo continues: "Optiplex 3015 NEO uses a unique technology called Beam Shaping. This particular laser resonator in combination with the Mazak Multicontrol Torch 3 cutting head is highly suitable for all those industrial sectors that require high cutting

OPTIPLEX 3015 NEO doors open.

Beam Shaping Technology.



precision and high quality of the cut surface with a reduced edge inclination angle."

The Variable Beam Mode allows the laser beam energy density to be controlled, while Beam Diameter Control, an Intelligent Function performed by Mazak's Multi Control Torch cutting head, allows the laser beam diameter to be automatically changed depending on the material and thickness cut. This combination results in a smoother surface and optimal cutting.

Gaetano Lo Guzzo continues: "The Multicontrol Torch 3 that equips this model was developed with the main objective of ensuring automatic settings and adjustments that simplify the use by the operator.

"These automatic functions are divided into three groups: Intelligent Setting Function, Intelligent Monitoring Function and Intelligent Cutting Function. This allows for a true automatic cutting process when the laser machine is installed with an automation. Therefore, the system is not limited to just loading and unloading the materials but the entire cycle is automatic including the management of the cutting programs and the machine adjustments on the different materials and thicknesses without any intervention by the operator."

The enthusiastic response from Mazak's customers has inspired the company to continuously refine this technology to exceed their expectations. Gaetano Lo Guzzo explains: "We will certainly further develop this technology both for the laser machine and for the automation system. For the laser machine we will expand the available laser powers and performances, while for the automation we will make the system even more flexible by adding further automatic functions that we prefer not to disclose for the moment."

Ian White, general sales manager for UK and national distributors, has worked for Mazak for ten years. In that time he has seen many changes in the market.

He explains: "Going back a number of years now to when fibre lasers were introduced, you could look at a piece of thick metal that was cut on a fibre compared to a CO_2 and you could immediately see the difference in quality.

"Like anything else, the technology has developed in terms of the beam change and cut quality monitoring. Mazak was at the absolute leading edge of that.

"There has also been a big push to reduce power and assist gas usage and obviously the increased adoption of automation.

"Our Mazak EU Factory in Worcester is the perfect example of investing in new laser technology to solve manpower shortages and improve efficiency.

"Here they have installed two fully automated OPTIPLEX NEO 6kW fibre lasers with Smart Manufacturing Cells, replacing the previous system which had four CO_2 lasers. These fully automated systems, with six axes sorting robots, can automatically load sheets and then sort the cut parts into stacks ready for the next process. Both machines are connected to a 200 pallet FMS system enabling long unmanned production runs for the large variety of sheet metal parts. Since installation the system has doubled their cutting capacity and delivered a 70 percent reduction in power usage."

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Ian White, general sales manager for UK and national distributors, Yamazaki Mazak UK Ltd.

Mazak to host Laser Open House event in May

Yamazaki Mazak will be hosting an exciting three-day laser focused event in May. The event will be of huge interest to those interested in the latest innovations and technology.

Ian White explains: "We have an event in mid-May, a three-day Laser Open House that will take place between May 13th-15th. We are excited to showcase our sheet metal and tube cutting solutions at our European Technology Centre in Worcester, utilising three dedicated areas of the facility.

"Visitors will see the OPTIPLEX NEO 15 kW with Automation, demonstrating high-performance cutting across a variety of materials up to 50 mm thickness. Additionally, we'll be featuring the FT-150 NEO tube laser, a high speed and versatile system designed for precision tube processing.

"Some of our key partners will also be joining us, presenting the latest advancements in CAD/CAM software, gas mixing systems, and press brake solutions.

"Attendees will have the exclusive opportunity to tour our factory and witness our latest sheet metal investment in action.

As well as the extensive lineup of technology on display, there will be plenty of opportunities for visitors to discuss their specific needs with our experts. Lunch will also be provided."

Ian White concludes: "Our goal is to make this event as valuable and educational as possible. We know time is precious, so we're focused on efficiency—ensuring visitors get the most out of their experience away from their day-to-day operations."

Mazak
Your Partner for Innovation

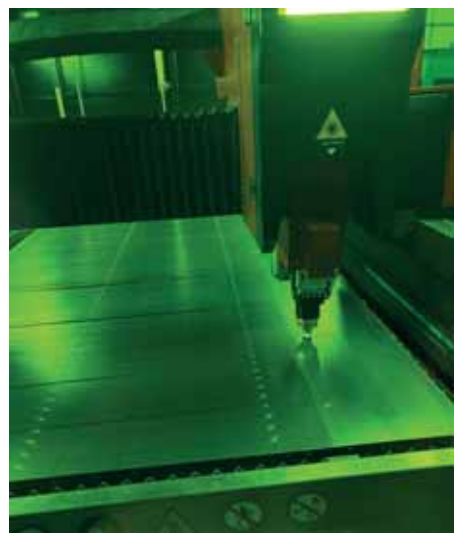
Kerf ramps-up output for expanded metal

When The Expanded Metal Company recognised its costs for external subcontract laser cutting services were escalating in line with output, the Hartlepool manufacturer investigated the market for a fibre laser machine to help manage costs and enhance process control. The solution was a Lincoln Electric® Linc-Cut™ 1530A 6 kW fibre laser machine from Kerf Developments and the benefits are nothing short of remarkable.

The Expanded Metal Company Group has a rich history that dates back to when its founder, John French Goulding, patented 'expanded metal' back in 1884. The company has evolved over the generations, with products ranging from mild steel and aluminium mesh to pre-galvanised steel and specialist products like its ExMeshTM. The diversity of applications covers everything from balustrading, cladding, ramps, walkways and insect guarding in the construction industry to air and liquid filtration, security fencing, crop drying and animal flooring, acoustic applications and even speaker and car grilles for the automotive industry. The products play a critical role in everyday manufacturing for some of the industry's most prestigious brands and projects.

For the last four years, the fabrication department has been buying laser-cut parts to complete fabricated assemblies that, as a finished product, are disability access ramps. Initially, the customer requirement was for four or five different ramp variations, but this has expanded to over 25 variations. With ramps ranging from 900 by 300 mm to 1.5 by 1.5 m and a host of dimensional variations in between, the production volume now stands at 200 to 250 ramps a week. This increased volume created several issues for the North East manufacturer. Firstly, subcontract laser cutting costs had escalated to become a major monthly cost and secondly, Expanded Metal had to schedule its production and lead times around its supply chain.

Recalling the situation, Ryan Pinder, the operations manager and head of continuous improvement at the ExMesh subsidiary of the Expanded Metal Company, says: "Our laser cutting costs were climbing and production schedules worked on min-max order levels with our supplier, it had to change. We looked at eight to 10 laser manufacturers and really did our due diligence. Part of this included visiting MACH 2024, where we talked to a contact at Lincoln Electric. We have lots of Lincoln Electric weld sets and it is a hugely trusted and well-respected brand that has never let us down. We told our Lincoln representative that we were in the market for a 3 kW laser and he immediately introduced us to Dan Taylor from Kerf Developments as the technology partners were sharing a stand at MACH."



Despite looking at many vendors, a demonstration at the Kerf showroom in Rochdale sealed the deal. Ryan Pinder continues: "This was our first laser purchase, so we needed support and reassurance as we leapt into the unknown. The Kerf team put us at ease and emphasised their level of support and they couldn't have been more supportive during demonstrations. We switched our requirement from a 3 kW to a 6 kW fibre laser to futureproof our business and Kerf introduced us to the Lincoln Electric Linc-Cut 1530 A."

The Linc-Cut 1530 A has a 3 by 1.5 m bed and incorporates an automated double shuttle table with a 1-tonne capacity for loading and unloading sheets when the machine is cutting. The fibre laser cutting head has a 75 µm compact laser source to enhance cut quality. Furthermore, it incorporates an autofocus function with automatic gas calibration and cutting height for optimised cut quality and repeatability.

Kerf conducted cutting trials and invited the ExMesh production team to trial the machine. At the same time, the ExMesh health & safety manager reviewed the safety attributes of the

Linc-Cut 1530 A. With a two-camera safety system, protective enclosure, security windows, light safety barrier, high-grade laser, CE certification, a fume extraction system with DIGIFILTER and a 2-year warranty, the Linc-Cut 1530 A passed the stringent health and safety requirements of ExMesh. Demonstrating its astounding ease-of-use, the large-screen CNC interface integrates two monitoring cameras and automated drawing, nesting and database parameters with advanced functions like Flycut, Fast Cutting, Smooth Microjoint, Frame Border and Circle Centering, sealing the deal for the ExMesh operators.

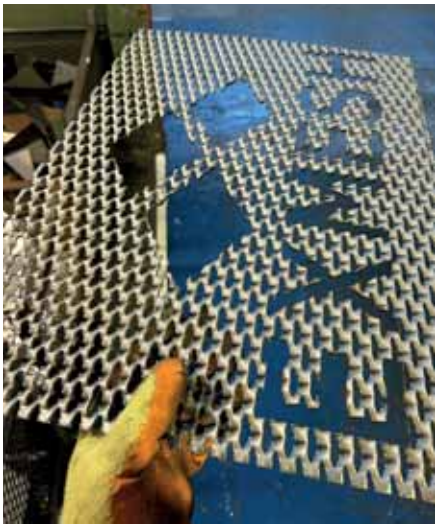
The benefits

Delivered in August, the Linc-Cut 1530 A has hit the ground running, operating for 8 to 16 hours a day. The impact of the machine has been far-reaching. The subcontract supply of laser-cut components ended immediately, saving the 95+ employee business significant costs monthly. This will ensure the Linc-Cut 1530 A has a staggeringly short payback period. Ryan Pinder adds: "Despite its exceptional build quality and brand reputation, the Linc-Cut 1530 A is also an extremely cost-effective machine designed and engineered in Europe. While we have to build labour and consumable costs into our ROI projections, we are already using the machine for much more than it was purchased meaning it will pay for itself in the very near future."

The ISO:9001, 14001, and ISO:45001 certified manufacturer has started moving work from punching and pressing machines to the laser. Ryan Pinder adds: "Punch and pressing requires tool changeovers and considerable setup times. Now, we can put jobs straight on the laser and eliminate all that extra work. It's much faster than our punching machines with much better cut quality. For every job, our first thought now is: 'Can we put it on the laser?' and this is particularly the case for small batches."

The Linc-Cut 1530 A from Kerf Developments also streamlined lead times and inventory management. As Ryan Pinder explains: "Working to min-max level with our supply chain, we had to stock inventory of over 1,000-off of multiple parts to feed into our subcontractors. This stock level has already dropped to 300-400, which will diminish further, freeing up valuable space and eradicating excess material and stockholding. From a lead time perspective, we don't have to work to 30 days by waiting for our suppliers. We can now do the laser cutting ourselves, reducing a 30 day lead time to a matter of days."

Looking to the future, ExMesh purchased the 6 kW Linc-Cut 1530 A to open opportunities



beyond its current scope and this is already reaping rewards. Ryan Pinder concludes: "With the Linc-Cut 1530 A, we are now in charge of our destiny, and we are already receiving more bespoke subcontract jobs from existing customers. The future is bright thanks to Kerf Developments and the Linc-Cut 1530 A."

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New fibre laser machines from Nukon bring high quality laser cutting to even wider subcontractor market

A new range of flat-bed fibre laser cutting machines from Nukon Lasers UK is making high-quality, high-performance laser cutting accessible to even more subcontractors and manufacturers wanting to laser-cut in-house.

Called the Nukon Cross Series, the new machines have been designed with a strong focus on productivity. They provide powerful 2D flat sheet metal cutting capability and are available with bed sizes of 3 m x 1.5 m, 4 m x 2 m, and 6 m x 2 m. Depending on requirement, they can be specified with power options from as little as 2 kW, right up to 30 kW for the most challenging of laser-cutting applications.

High-spec optional features are equally impressive. Depending on model, buyers can choose from state-of-the-art American-made nLIGHT fibre lasers or robust Raycus fibre lasers. Advanced Lantek Expert CADCAM nesting software can also be specified, as can CutLine programmable beam-shaping technology (for nLIGHT models).

Other options include automatic nozzle cleaning, cut detection, piercing sensing and automatic nozzle changing. All of these technologies help ensure businesses are competitive in today's commercial environment. Cross Series machines have also been designed to integrate with the full range of Nukon automation systems, for huge productivity benefits with minimal manning levels.

The accessible, high-quality European-built alternative

"Through the new Cross Series, we are making high-quality, highly reliable European-built Nukon fibre laser cutting machines accessible to even more UK manufacturers and subcontractors all with uncompromising levels of aftersales support from the Nukon Lasers UK team," says Nukon Lasers.

UK's sales director, Steve Haddrell says: "The Cross shares the DNA of the massively popular NF Pro model it replaces, but has been designed to take the next step, offering blistering performance and efficient design, at a highly accessible price point.

"Nukon has always taken pride in building exceptional quality 2D, 3D and tube fibre laser machines at prices which compare extremely favourably to other European brands," continues Steve Haddrell. "In launching the new Cross Series, Nukon is providing a genuine high-quality alternative for organisations that may otherwise consider looking further afield for an affordable laser-cutting machine. Cross Series machines may be more price-accessible than other models in the Nukon range, but they are built to the same exacting standards and will easily exceed the requirements of many subcontractors and in-house manufacturing centres. Depending on workflow, in reduced outsourcing costs alone, a Nukon Cross Series machine should typically pay for itself over a couple of years, but will work reliably in your business for many, many more."

The sister company of UK-based tube bending machinery specialists, Unison Ltd, Nukon Lasers UK is the exclusive UK and Ireland distributor for Nukon's European-built 2D, 3D and tube fibre laser cutting machines, press brakes and loading and unloading solutions. Nukon fibre lasers combine high speed and high precision with exceptional value and build quality, as well as exceptionally low running costs. The Nukon Lasers UK team offers first-class machine tool service, training, maintenance and technical support, in addition to service contracts and service level agreements that can be tailored to specific requirements.

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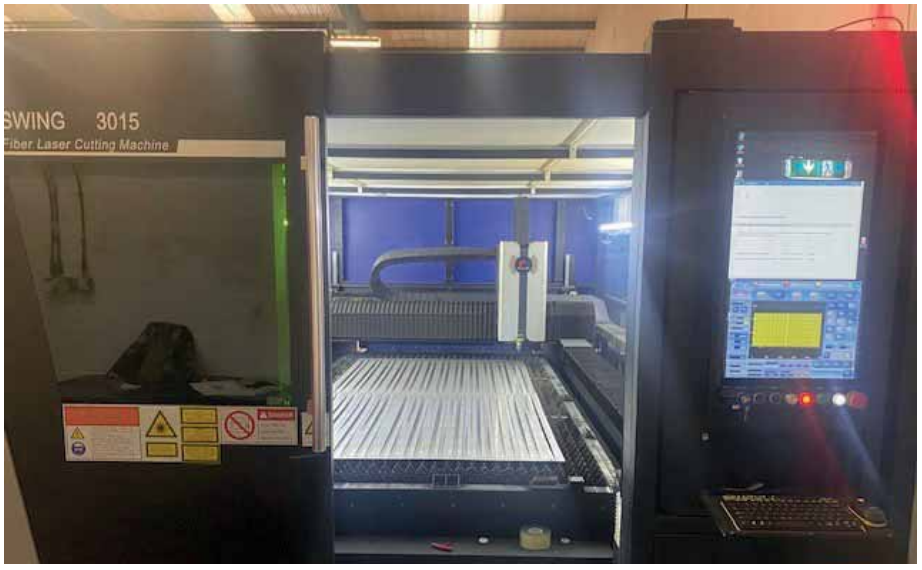
Nukon Cross flat-bed fibre laser cutting machine.

Laser cutting takes an upward swing at Lynvale

Leading manufacturer Lynvale Ltd of Haverhill have supplied adhesive tapes to the construction industry for many years. Due to regulatory changes creating high demand for non-combustible products over the last two years, Lynvale has taken positive steps and added metal fabrication work to its business activities. It is now able to offer a wide range of laser cut metal construction fixings to enhance its adhesive tape range offering.

Production manager, Ben Baxendale comments: "When this project first started, we had previously used a company that supplied us with a 1.5 Kw fibre laser, which only lasted approximately 18 months before it suffered catastrophic breakdown. When this happened, we realised that we needed a better solution and reached out to Penta Laser UK who, speaking as of today, have been an incredible company to deal with. Penta Laser UK have supplied us with a 4 Kw Penta Swing fibre laser cutting system that has made our laser cut parts production quicker than we can pack them.



"I'd also say the service from Penta Laser UK has been second to none, especially compared to what we have been used to in the brief moment we've been operating the previous laser system."

The system supplied by Penta Laser UK is a Swing VII 4 Kw 3015 fibre laser cutting system featuring Maxphotonics laser source and Precitec cutting head technology with Penta 'Smart Manager' laser controls and Lantek CNC nesting software.

Damion Quinsee, sales manager at Penta Laser UK says: "This impressive laser system offers all the functionality, performance and quality that much more expensive fibre laser systems provide. The Penta equipment provides impressively low operating costs for Lynvale as it is capable of cutting with compressed air as well as more traditional oxygen and nitrogen assist gases."

The Penta range offers laser powers 2 kW - 85 kW and cutting bed sizes from 3 x 1.5 m to 13 x 3 m.

Penta Laser UK offer full UK sales and aftersales support including a huge UK stock of Penta spare parts.

Penta Laser UK Ltd
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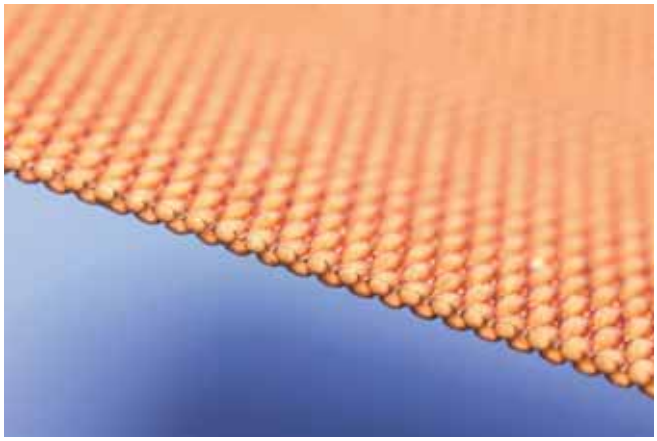
Precision cutting of rubber-coated canvas with CO_2 lasers

Rubber-coated canvas is an industrial fabric made by coating base fabrics, like polyester or nylon, with rubber compounds such as synthetic rubbers, e.g. SBR, neoprene, or natural latex. This process improves abrasion resistance, fatigue resistance, tear strength and water/chemical resistance. Depending on the materials and weaving patterns, it can be classified into EP, NN, PE and PP canvas.



Primary applications include:

- **Conveyor belt cores:** Used in mines, ports, power plants and steel mills.
- **Rubber products:** V-belts, rubber hoses, elevator belts, rubber tracks, etc.
- **Construction/outdoor:** Includes vehicle covers, tarps and temporary storage setups.
- **Specialised uses:** Railway buffer pads, subsea pipelines, oil tanks, tow straps and lifting slings.

Luxinar's OEM series of sealed CO_2 lasers with powers ranging from 600 to 1,000 W have successfully cut rubber-coated canvas of varying fibre densities and thicknesses between 0.6 and 2.15 mm. The base fabrics can be woven from polyester or nylon warp and weft threads. Cutting along the weft direction is generally easier than along the warp. As material thickness increases, higher laser power is required to achieve adequate cutting speed and quality.

With warp and weft speeds typically varying from 18 to 80 m/min, depending on material type and thickness, CO_2 laser cutting achieves an excellent edge quality. The edges are smooth, well-sealed, and resistant to wear, with no signs of fraying, discoloration, or scorching.

Luxinar has a singular focus: developing laser technology to enhance our world.

Like a laser that channels light into a single, powerful beam, it focuses on improving the lives of customers. This allows it to create solutions to meet every single challenge, from heavy industry to delicate, high precision applications. It supports the laser technologies of yesterday, focus on today's and pioneer those of tomorrow.

The company has been at the forefront of laser technology for over 25 years and is a leading manufacturer of industrial laser sources. To date, it has an installed base of over 25,000 lasers worldwide in industrial applications environments.

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LVD press brakes and laser set Kelvent up for the future

Ventilation product manufacturer Kelvent has taken a leap forward in its production capabilities after investing in two LVD PPED press brakes and an LVD LaserOne 6 kW fibre laser cutting system.

Kelvent has been trading for more than 40 years and has a trade counter and a manufacturing facility under one roof. Originally the business was an installation company, but it started to make its own products and in 2000 it decided to stop working on installations and focus on being a manufacturer and distributer.

Managing director Paul Kelly says that around 75 to 80 percent of the products that Kelvent sells are made in-house. It produces spiral and square ducting on its own machines and buys in items such as pressed fittings and fans. The square ducting is bespoke and made in-house on the LVD press brakes.

He says: "It is more or less a standard square product, but the sizes change, the transitions change, and so on, so you rarely end up making the same job twice. The round ducting you can buy off the shelf, but the square ducting is made to order.''

Paul Kelly first saw the LVD machines at the EuroBlech exhibition in 2022. He was impressed and decided to buy one: a PPED 7 135/30 with a 1,350 kN press force and a 3,050 mm bending length.

"Before that we had an old up-stroking press brake. Given its age it was not very reliable and it was hard to get it repaired. The new machine was very easy and quick to set up and the automated programmable back gauges were a big factor for us."

The versatility of the machine was a big plus too.

Paul Kelly continues: "We are mostly using thin galvanised steel to form up square tubes, offsets, square to round transitions, square bends and so on. Most of the bends we make have a 90 degree or 45 degree angle and with the new press brake we ordered additional tooling which allows us, among other things to bend over 90 degrees if we want to. We couldn't do that before."

The bigger open height of the LVD machines also allows Kelvent to make parts that weren't possible on the old machine. For example, a square end cap where two of the edges are folded inwards and two outwards.

Within six months of the first PPED press brake being installed Kelvent ordered the second machine.

The decision was all about capacity as Paul Kelly explains: "If somebody wanted something the next day, we only had the one folder and the operators would be queuing up to fold. We were so happy with the first one that we bought another one."

Both of the LVD machines can bend parts up to 3 m long, whereas the previous press brake was limited to two metres.

As Paul Kelly explains: "We don't generally produce any parts that long, but people would ask if we could, so we thought we would buy a bigger machine. We are looking to expand the business and have been asked to make things like kitchen canopies, We now have the ability to do that."

He says that the machines are very easy to use. So much so that they are generally programmed on the machine.

"We have LVD's CADMAN offline programming software for the press brakes, but they are so simple to program that we tend to do it manually on the machine. The Touch-B

control is very straightforward and user friendly. When we got it all the boys were using it within about two days. And once you've done the programme it is stored in the system so you can just set it up again next time you do that job. It really is the easiest machine ever to use," says Paul Kelly.

The productivity of the two press brakes meant that Kelvent needed to upgrade its cutting capacity, replacing two plasma machines with an LVD LaserOne 6 kW fibre laser.

Like the press brakes, the LaserOne is very simple to use and is designed to be a cost-effective machine with no unnecessary complications or features – which made it ideal for what Kelvent wanted.

"The controllers are the same whether you are working on the lasers or the press brakes which is another good factor. It can be quite daunting when you are faced with new technology but it is so easy to work it's not overly complicated."

The performance is impressive too says Paul Kelly: "It is super-fast and has a pallet changer shuttle table so the operator is loading and unloading while the machine is cutting."

Overall, he says, production is about 75 percent faster with the new laser and press brakes, and Kelvent is making about 35 percent more product that it was before. So much so that it has had to buy a new 7.5 tonne truck and take on a second driver.

He is full of praise for the support he gets from LVD: "The two folders we got were up and running and being used within a day of getting them. If I have a problem, I can message the service engineer and get a rapid reply.

"LVD understood what we were looking for when we came to buy the machines. When you buy a new folder you are a bit hesitant and you want to buy the right thing and they helped us with the tooling . With the two folders we were working on them right away, the same with the laser."

Paul Kelly says that quality is key for the business and the LVD machines are taking us to another level. He concludes:

"A lot of companies that make and sell the product also have an installation business next to them. We just deliver it and the contractor fits it. They need to be able to rely on high quality and accurate products. We have always been renowned for quality and we have managed to grow the business based on that.

"That quality has just gone up another notch because the LVD press brakes fold parts so well and the laser cut quality is so good."

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Why local matters: The advantage of Starrett's UK-based bandsaw blade welding centre

By Craig McAnulty, Marketing Manager

A legacy of precision and performance

For over 140 years, Starrett has been synonymous with cutting and measuring excellence. Founded in 1880 in Athol, Massachusetts, by L.S. Starrett, the company revolutionised precision engineering with the invention of the combination square. Today, Starrett is a leader in cutting technology, renowned for its high-performance bandsaw blades, measuring tools and the instantly recognisable yellow holesaw.

Starrett expanded into the UK market in 1958, establishing its headquarters in Jedburgh, Scotland. Since then, it has become a leader in cutting solutions, supplying businesses across fabrication, manufacturing, aerospace, and engineering. Now, with a dedicated bandsaw blade welding centre in Nottingham, England, Starrett is bringing fast, expert and reliable cutting solutions to manufacturers across the UK and Ireland.

The advantage of local blade welding services

For many fabricators and engineering firms, choosing the right bandsaw blade can make the difference between a smooth, efficient cut and costly inefficiencies. Many businesses rely on off-the-shelf blades, which may not be optimised for their specific cutting requirements.

With ongoing supply chain disruptions and increasing costs for imported goods, businesses need reliable, UK-based suppliers. Starrett's investment in its Nottingham weld centre ensures customers benefit from:

- **Custom-welded bandsaw blades:** Tailored to the exact material and cutting application.
- **Fast turnaround times:** Ensuring minimal disruption to production.
- **Expert support:** Helping businesses select the best blade for maximum efficiency and blade life with dedicated technicians available for on-site visits.
- **Stable pricing:** Offering cost certainty in an unpredictable market.

By having a welding facility in England's midlands, Starrett provides a rapid and reliable service, giving businesses a trusted local partner for all their cutting needs.

Fast turnaround to minimise downtime

Time is money in fabrication and manufacturing. Waiting for replacement blades or using inefficient cutting solutions can slow production, increase waste and drive-up costs.

Starrett's Nottingham welding centre offers:

- **Rapid blade welding services:** Many custom bandsaw blades available within 24-48 hours.
- **Consistent supply:** Reducing reliance on overseas shipments and avoiding unexpected delays.

With efficient distribution across the UK and Ireland, Starrett's local service ensures that fabricators and manufacturers can keep their operations running without interruption.

Expert guidance from the Starrett Saw Doctors

At Starrett, supplying high-quality bandsaw blades is only part of the solution. To help customers achieve optimal cutting performance, Starrett provides its Saw Doctor service: a team of expert saw technicians who visit customers on-site to analyse cutting needs and provide tailored solutions.

The Saw Doctors provide:

- **On-site analysis:** Technicians evaluate cutting applications and recommend the best Starrett blade for maximum efficiency and durability.
- **Technical support:** Assistance with Starrett bandsaw machines, helping businesses maintain optimal performance.
- **Operator training:** Hands-on training to improve cutting techniques and extend blade life.
- **Test-&-Trial program:** Customers can trial genuine Starrett bandsaw blades, ensuring they get the best solution for their specific industry needs.

By working directly with manufacturers and fabricators, Starrett's Saw Doctors help businesses reduce waste, improve cutting speeds and lower operating costs, all while ensuring the highest level of precision.

Tailored cutting solutions for diverse industries

With decades of experience across multiple industries, Starrett understands that every cutting application is unique. The company supplies custom-welded bandsaw blades to businesses in aerospace, steel fabrication and general manufacturing.

From bimetal and carbide-tipped bandsaw blades to carbon steel solutions, Starrett offers a full range of blades that deliver longer blade life, superior cut quality and improve efficiency.

Commitment to excellence

Robert McKechnie, general manager of Starrett UK & Europe, highlights the importance of local support and expert service:

"Starrett has been at the heart of cutting and measuring innovation for over 140 years. With our Nottingham weld centre, we're ensuring fabricators and manufacturers across the UK and Ireland get a fast, expert and reliable service. Our Saw Doctors and Test-&-Trial programs allow us to work directly with customers to optimise their cutting processes, helping them cut smarter, faster and more efficiently."

Your local cutting experts

At Starrett, we don't just sell bandsaw blades we partner with customers to improve their cutting operations. With a UK-based weld centre, expert Saw Doctor support and a commitment to quality and innovation, Starrett is the trusted choice for manufacturers and fabricators across the UK and Ireland.

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Exemplary Swiss company counts on multiprocess welding systems from Fronius

ALLUCAN AG, founded in 1962 in Bremgarten, Switzerland, has established itself as a leader in aluminum processing. The company's portfolio encompasses the production of prototypes and series components for various industries, including railroad, transportation, power and high-current transmission technology, shipbuilding and aircraft technology. Welding is carried out using highly sophisticated robotic welding systems and manual welding equipment. When performing manual welding tasks, the highly respected aluminum experts turn to the iWave AC/DC Pro 500i multiprocess welding system from Fronius.

The company offers a 360° service from consultancy, design and mechanical processing right to final production. Thanks to flexible manufacturing technologies, the company can produce prototypes quickly and efficiently, while automated processes facilitate the production of higher quantities with consistent quality. Individual customer requirements are transformed into customised solutions with the help of detailed analyses.

The combination of technological excellence, strict quality standards and an experienced team makes ALLUCAN AG a dependable partner. The Swiss aluminum experts are committed to the highest quality standards, underlined by certificates in accordance with ISO 9001:2015, DIN EN ISO 3834, DIN EN 1090, DIN EN 15085 and DIN 2303, as well as DNV workshop approval. The know-how and experience of the workforce have been key success factors for many years. In the locomotive vehicle construction sector in particular, ALLUCAN AG has developed a number of innovative solutions tailored to specific industry requirements.

Feasibility studies and quality controls

Before new components go into production, ALLUCAN AG conducts comprehensive feasibility studies. First, the design drawings are checked in close collaboration with the customer and adapted if necessary, until the ideal welding conditions for the welding sequence and the layer build-up are guaranteed.

During the subsequent process and work sample tests, a range of test methods are used to ensure the quality of the weld seams, including visual inspection, dye penetration, ultrasonic and X-ray tests, all of which are carefully documented to prove compliance with the standards. These tests are further complemented by technological material tests and the production of micro and macrosections.

Once the feasibility tests are complete, the company produces both painted and unpainted component samples for First Article Inspection (FAI) by the customer. Series production can only commence once the customer has given their approval on site at the Bremgarten plant. Before finished components are ready for picking, they undergo a detailed final inspection, which includes a digital 3D measurement using a special mobile camera to check for possible dimensional deviations and distortions. The end products are only delivered once all tolerances satisfy the customer's requirements.

Transformer enclosures and special housings for electric locomotives

ALLUCAN AG manufactures lightweight transformer enclosures and special housings from aluminum, which are primarily used in high-performance locomotives and high-speed trains. Such aluminum housings increase the energy efficiency of locomotives, while also complying with strict safety requirements. This demands precisely placed welds with consistent geometries and layer build-ups. Up to 20 or more weld layers have to be produced, depending on the material thickness.

Welding often takes place using the TIG welding process, which brings several advantages. For example, TIG enables the welder to produce flawless, flat welds, which guarantee an optimum basis for the subsequent layer build-up, while the smooth TIG beads minimise the risk of notch effects, which enhances the structural integrity of the welded joints.

MIG welding, which is particularly suitable for thicker materials, is used to build up the layers. It allows high welding speeds and offers good control over the weld. This is where the iWave AC/DC Pro 500i multiprocess welding machine excels, guaranteeing welding quality without compromise for every single weld. One particular advantage of this welding machine is the rapid and straightforward changeover from TIG to MIG and vice versa.

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New technology boosts sales

By investing in a TruLaser Weld 5000 laser welding cell from TRUMPF, brothers Kevin and Marcel Kempf took an entrepreneurial risk. They only had a few parts optimised for the new process. With a clever idea, their employees were motivated to change this in a short space of time and the results were so good that many customers now only want laser-welded parts.

Kevin Kempf and his brother Marcel are passionate about sheet metal processing. Trying out new technologies and processes to further the development of their company is what makes the business so appealing to them. It also takes a bit of courage and they certainly have it. “If we only ever took the bare cost calculations as the basis for our decisions, we wouldn't have been allowed to buy some of our machines in recent years,” explains Kevin Kempf pragmatically, adding with a grin.” We like looking at the big picture. We cannot offer our customers technologies which we do not have the machines for and that means we are missing out on business. So that's why we sometimes take a risk.”

As with the decision to invest in an automated laser welding cell from TRUMPF. The technology has long fascinated the brothers. When the TruLaser Weld 5000 with the FusionLine option came onto the market, things got really interesting for them. The FusionLine option makes it possible to compensate for inaccuracies in a component and thus automatically process components that are not optimised for laser welding. Gaps up to one mm wide can be closed easily without compromising the quality and strength of the weld seam. “That was what convinced us,” says Marcel Kempf. “We ordered the system in 2018.”

Automation gives you independence

Andreas Kempf founded Kempf GmbH in 1987. In 2020, his sons Kevin and Marcel took over management of the business. The family business with its headquarters in Kraichtal-Gochsheim, Baden-Württemberg, is a contract manufacturer for sheet metal and tube technology. The company currently supplies around 500 customers from sectors including machine and systems engineering, fixture construction, medical and rehabilitation technology as well as the automotive and electrical industries. With around 70 employees, the company covers the entire sheet metal process chain from component design to surface refinement.

The brothers invested in the expansion of the welding shop back in 2017. In addition to the standard TIG, MIG and MAG welding processes, it was now time to take the plunge into automated laser welding. “Everything fell into place in one fell swoop,” explains Kevin Kempf, enumerating. “With FusionLine, TRUMPF has lowered the previously extremely high demands on component accuracy in preparation for laser welding. What's more, it is no longer necessary to invest thousands in milled fixtures. Last but not least, the shortage of skilled workers, which is also a problem for us, has made it clear how important automated production processes are. The issue has become even more acute since Coronavirus.”

Success bonus for component design

When commissioning the TruLaser Weld 5000, the Kempf brothers initially encountered the same problem that still prevents many sheet metal fabricators from purchasing laser welding systems: they didn't have the right parts. The prospect of a new process is often rejected by customers. “Many people think only a thick seam can be stable. Although we have destroyed components and proven that it is the material rather than the delicate laser weld seam that tears, this evidence is often not enough to convince people,” says Marcel Kempf, explaining the dilemma.

The Kempf employees were also initially not too keen on redesigning components for laser welding and building the devices required for the welding process. “That's when we came up with the idea of offering a bonus for every

laser-weld-optimised part," says Kevin Kempf. This piqued the interest of our ambitious employees. The specifications were simple: they had to present a processing program, the appropriate fixture and a short video or photo documentation of the new process. Of course, they needed to be able to win over customers with their idea. "The work was worthwhile for both sides," says a delighted Kevin Kempf. "For the employees, their ideas paid off in hard cash and we have also profited with 80 percent to 90 percent of our parts now optimised for laser welding."

Laser welding as a money-maker

Together with their sales team, the Kempf brothers have now also won over their customers. "When I showed a customer three laser-welded samples and he ended the meeting after what felt like five minutes, I was shocked and perplexed," says Kevin Kempf. "Until the customer got in touch shortly afterwards and said that he had never seen such great samples before and that he would be sending an order." The problem had been ironed out. "This customer is one of our biggest today. Without laser welding, we wouldn't be able to achieve the turnover we make with it," adds Marcel Kempf.

The speed, quality and, above all, the reproducible results continue to inspire Kevin and Marcel Kempf. "We have components that took us over an hour with TIG welding and the necessary post-processing. We can do it in ten minutes with laser welding. We can do in one shift what used to take us a whole week,"Kevin Kempf sums up enthusiastically.

Another decisive factor for the brothers is that the TruLaser Weld 5000 not only processes the orders quickly and punctually, it also delivers 100 percent reproducible welding results at all times. The Kempf brothers have not regretted moving into automated laser welding. As a result, they were not only able to win new customers, but also win over existing customers.

This gave them a competitive advantage. "Once you've seen a laser welded seam, you won't want anything else," concludes Kevin Kempf with conviction.

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Robot welding system set to fast-track rail and road maintenance

An innovative robot system that is capable of repairing rails and points is set to change the way European rail networks are maintained. Using industrial robots from FANUC, the system has been designed and manufactured by Robel Rail Automation, German specialists in the maintenance of rail infrastructure.

The system features a rail-traversing wagon mounted by two FANUC robots which detect internal and external defects. The robots then perform fully automatic repairs using welding, milling and grinding processes. Robel Rail Automation is already seeing high demand for the system, particularly in the case of time-consuming and complicated repair work of points, as rail companies are finding it increasingly challenging to secure skilled workers such as welders.

The Robel Rail Automation System ensures consistent quality and a high level of traceability.

The system features a rail-traversing wagon mounted by two FANUC robots which detect internal and external defects.

Robots can help to speed up the completion of lengthy rail maintenance projects by taking over repetitive work and compensating for the growing labour shortage.

In addition to carrying out continuous maintenance work safely and efficiently, the use of FANUC robots in the Robel Rail Automation System ensures consistent quality and a high level of traceability, thanks to wagon-mounted ultrasound equipment, eddy current measuring systems and a camera system. This covers damage that is not visible to the naked eye and ensures measurement and process data is digitally available to the end-user.

Both FANUC and Robel Rail Automation are optimistic about the future use of robots for infrastructure maintenance, as there is a need for modernisation across both the rail and road networks. Robots can help to speed up the completion of lengthy maintenance projects by taking over repetitive work and least partially compensating for the growing labour shortage.

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New ESAB Aristo Edge Robosystem streamlines automation integration

The ESAB RoboSystem automated GMAW welding package features the next-generation Aristo® Edge 500R power source and RoboFeed Edge robotic wire feeder. It also features the ESAB Connect browser-based user interface, an automation gateway with support for the seven most common communication protocols, a variety of torch options and simplified cable dressing kits for leading robotic arms. The components use high speed, low latency communications to support fast, effective process control and coordination between connected devices.

An innovative mounting design enables fast installation of the RoboFeed Edge feeder on hollow wrist and standard arm robots and features such as programmable buttons on the torch allow for easy adjustments, such as for setting a specific wire stick-out. The user interface is easy to navigate and understand and the service mode can be activated from the feeder to simplify routine maintenance. The ESAB RoboSystem also features built-in connectivity for InduSuite applications such as WeldCloud Fleet, WeldCloud Productivity and WeldCloud Assembly.

"The ESAB RoboSystem streamlines implementation for system integrators and end-users because we preconfigured it for major robotic brands," says Petter Svensson, global director of robotic welding at ESAB. "To further simplify usage, ESAB developed GMAW WeldModes that provide high quality welds with minimal adjustments needed."

ESAB Robo System

The ESAB RoboSystem streamlines implementation for automation integrators and end-users and features GMAW WeldModes that provide high-quality welds with minimal adjustments needed.

Advanced processes

In addition to conventional GMAW process, the Aristo Edge 500R features five advanced GMAW WeldModes with tailored waveforms: THIN, ROOT, ROOT Pipe, SPEED and Advanced Pulse WeldMode. All WeldModes enhance arc stability, offer more control at faster travel speeds and reduce spatter by up to 85 percent, depending on the processes compared, for less post-weld clean-up. Compared to conventional short circuit transfer, the THIN WeldMode reduces heat input, typically by 20 percent, to minimise distortion when welding thin plates, such as from 22 to 11 gauge. It also reduces spatter and fume generation.

The SPEED mode creates a more focused arc by taking a conventional spray transfer arc and overlaying a modified pulsed current wave form on top. Benefits of the SPEED mode include improved control at higher travel speeds, up to 70 inch/min, reduced spatter, deeper more focused penetration in fillet welds and the ability to weld in narrower grooves. The Aristo Edge 500R also offers synergic Pulse MIG WeldMode, which generates up to 70 percent less fume compared to generic pulse waveforms.

With an ability to bridge gaps, the easy-to-control ROOT WeldMode is optimised for root passes on plates in all welding positions and creates a smooth arc even while weaving. The ROOT Pipe WeldMode optimises gap bridging in vertical down pipe applications.

"The Aristo Edge platform also enables ESAB engineers to create additional, application specific WeldModes and add synergic lines to existing WeldModes, giving users the confidence of buying a future-proof system," says Petter Svensson.

Within the Aristo Edge 500R power source, a next-generation current control module controls the arc more quickly than the microprocessor controls used on other pulsed welding equipment. As a result, it can detect and clear a short circuit or manage current transients 10 to 20 times faster. The system minimises weld spatter and creates a stable, more controllable weld pool and can deliver a stable welding arc even if mains, primary, current fluctuates.

Next-generation feeder

RoboFeed Edge features ESAB's PreciDrive wire drive system to deliver reliable arc starts and stops and consistent wire feeding performance with solid wires up to 0.63 in, 1.6 mm. Internal LED lights illuminate the feed mechanism for easy and safe exchange of feed rollers. It uses a special drive mode for the motor, an encoder for precise positioning and has little to no backlash in the gears.

The 4-wheel drive system uses larger diameter drive rolls that offer more gripping area and provides more pushing force without deforming soft wires, a common source of feeding problems.

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