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Exceptional service in unprecedented times

Allied Machine & Engineering in Europe is delighted to confirm that it will continue to provide next day delivery to many areas, just as it has done for decades, despite the new challenges faced.

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these unprecedented times. The external sales and management teams are on hand, as well as internal technical and sales support. They have been working continuously adapting to challenges along the way.

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UK manufacturers must adopt three-pronged approach to boosting productivity

2021 could be a pivotal year for industry in the UK and the extent to which manufacturers adopt automation may determine its long-term success. Tom Bouchier, managing director at FANUC UK, outlines the three areas manufacturers must focus on to bounce back in 2021:

At a time when the impact of COVID-19 has presented significant challenges to a number of British businesses, we have also seen the resilience of those willing to adapt. Even under the shadow of the latest IFR report on World Robotics, which highlighted just how far behind its international rivals the UK is in terms of automation, there are reasons to believe 2021 can be the year for British manufacturing to bounce back.

There are three key areas that we must focus on if we are to propel UK manufacturing back to its prominent position on the world stage: perceptions of automation, skills & training and funding. By addressing these three issues head on and de-fearing automation in the UK, we can significantly enhance the productivity of existing businesses.

Perceptions of industrial automation within the UK have long been an obstacle to greater uptake and a change in attitude of those within manufacturing is vital in instigating wider adoption. The impact of COVID-19 has, to some extent, had an effect on this, but there has to be an ongoing and concerted effort to educate on the numerous benefits of automation.

This is where skills and training become even more important. On a fundamental



level, this relates to ensuring operators are skilled enough to work with the latest technology. It means creating an appealing and viable entry route for those interested in embarking upon a career in manufacturing, whether that's via the apprenticeship route or through higher education.

However, there must also be a focus on engaging with and training the existing workforce. There can be a fear factor among many working in manufacturing when it comes to automation and robotics and this is something that can be addressed through education. Robots replace roles not people and removing a labour-intensive element of someone's job, with a new skill such as programming, will offer much more long-term value and purpose.

Finally, even when perceptions and skills are at a level high enough to facilitate the adoption of automation, there needs to be the financial incentive to do so. The ROI of the latest equipment means that investment is quickly paid back in productivity gains, but there needs to be a much broader access to

funding for those that require initial financial support.

Tax breaks have often been the go-to method for encouraging investment and while this is extremely effective for established companies, it does little to help business who are early in their lifespan. Cruelly, SMEs are simultaneously the ones who would benefit most from implementing automation and yet struggle to raise that initial investment, which is why the government must adopt a more bespoke approach to funding these businesses.

UK manufacturing will continue to face a number of challenges throughout 2021, not least with the ongoing impact of COVID-19 and the uncertainty surrounding Brexit. Addressing the three key areas outlined above will go a long way to ensuring the success of the industry in the short, medium and indeed long-term.

Above all, it is absolutely vital that British businesses understand they are competing on a world stage. They have to be capable of matching the productivity of manufacturers around the globe and industrial automation is key to this.

At our state-of-the-art headquarters in Ansty Park, Coventry, FANUC UK brings together world-leading capabilities in industrial robots, machine tools and plastic injection moulding machines to facilitate the complete integration of factory automation systems for UK manufacturers.

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KREBS & RIEDEL celebrates its 125th Anniversary and gears up for the future

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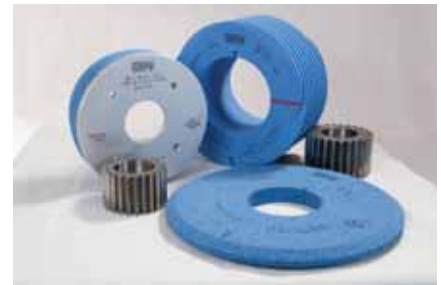
Customers from the automotive, aerospace, mechanical engineering, medical technology and wind power sectors rely upon the high-precision products manufactured by Krebs & Riedel. In addition to conventional internal and external grinding wheels, cutting wheels, cup wheels and grinding segments with ceramic and synthetic resin bonds, KREBS & RIEDEL also manufactures CBN and diamond tools with ceramic bonds. The medium-sized family business with over 250 committed employees and an annual turnover of 31 million euros is one of the leading German manufacturers of abrasives. An export share of around 48 percent shows the companies international orientation.

KREBS & RIEDEL has subsidiaries in China and India, as well as 30 international distributors including Advanced Grinding Solutions Ltd of Coventry in the UK. A team of application technology consultants looks after customers worldwide. The company attaches particular importance to research and development and works closely with several research institutions. Important investments in sustainability management and the expansion of the Bad Karlshafen site are currently being planned.

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Bumotec machining centres provide single setup medical instrument manufacture

A trio of Bumotec multi-axis, multi-tasking machining centres are not only helping Shanghai Medical Instruments Group to maintain its 50 percent market share in China for medical instruments, but their ability to finish-machine up to six faces at high accuracy and in a single setup have also enabled the company to expand profitably into the manufacture of minimally invasive instruments.

While the effectiveness of the machines at single setup multi-operations has brought great rewards in both prototyping and manufacture, the company highlights its latest Bumotec, the 5-axis s181 model with 'front live tools' on a sub-spindle, as being able to boost productivity by 20 percent on some parts.

Capable of producing complex, multi-faceted components from bar up to 65 mm diameter and with up to seven-axis simultaneous machining in a single set-up, Bumotec machining centres are capable of drilling, thread forming, grinding, gearcutting and broaching in addition to turning and milling. They are renowned globally for producing small, intricate workpieces that come off the machine ready for assembly with no deburring, as Shanghai Medical Instruments has found.

A member of the Yuwell Group, the company has four production plants in the

Shanghai area: three manufacturing/assembly plants and one site dedicated to forging, surface finishing and heat treatment. Established in 1928, it annually produces over 10 million parts, which are used in hospitals throughout China and in other countries. The components are produced in limited batches of 200- to



Typical medical parts (above) produced on the Starrag Bumotec machine (below)

300-off, while the company's in-house manufacturing routines are complemented by a group of subcontractors. In addition, there is an in-house team of 20 quality control engineers.

The company has a product catalogue of more than 8,000 items, which includes its flagship, award-winning JZ brand. Key products are knives, scissors and surgical clamps, as well as 400 different types of micro instruments for anastomosis, the treatment of lymphatic vessels and limb reconstruction.

The portfolio also embraces instruments for ENT surgery, orthopaedic implants and 300 types of minimally invasive instruments such as laparoscopic clamps (used in endoscopy procedures) plus 400 instruments for dental surgery. Surgical staplers and electrical tools used in surgery are also part of the portfolio.

The development of so many different products is based on close work with hospitals and universities, and the company's R & D team collaborates with these 'partners' throughout the entire new product development process, from design, studies and validation up to production. Its well-equipped workshops allow the process to be very flexible and responsive, while the prototyping and production of certain parts is a key area for the Starrag-supplied Bumotec machining centres (models s192, s181, s191), the first of which was installed in 2005.

A range of 500 different types of minimally invasive and ENT instruments are machined in a single setup from bar on the Bumotec machining centres. It was found that 'conventional' separate processes/machines were not able to produce these components effectively, especially in terms of consistent quality of the relationships of 'matching' parts/features. Also, the multiple complex clamping procedures required for the various stages of machining made traditional production slow and inefficient.

Bumotec machines, on the other hand, can produce complete components in a single clamping from bar stock, finish machining up to six faces in record time, in one case up to 20 percent quicker.



In fact, even the production of separate parts on the same machine for an orthopaedic instrument assembly meets the company's stringent quality standards. The two-part assembly is now produced with ultra high-accuracy, ready for assembly and more cost-effectively by a Bumotec s191 rather than the former route of using a lathe, a mill then an electrical discharge machine to finish the parts to the required standard.

The Bumotec s191H can achieve highly accurate (to +/- 2.5 microns) machining solutions within its X, Y and Z axes range of 410 mm, 200 mm and 400 mm respectively, courtesy of linear drives and high-level thermal stability. In addition, its main spindle is complemented by a sub-spindle that can turn in both horizontal and vertical planes, for multi-process/tasking routines, and tool magazine options extend to up to 90 pockets on a machine that has rapid traverse rates of 50 m/min and a 30,000 or 40,000 revs/min spindle speed that also contribute to its ultra-fast cycle times.

Another example concerns the production of an instrument for ENT surgery. This is produced on a Bumotec s181 in eight minutes, instead of ten minutes

by former methods, by the simultaneous use of the machine's sub-spindle.

The company continues to invest in Bumotec because, it says, "the machines' stability in production is extraordinary and their ease-of-use makes them accessible even to the newest members of our production team". Also, when installed, "the training supplied means we can get the machines into production very quickly," adding "production changeovers are quick and easy, while maintenance routines are effective and efficient thanks to Starrag's excellent customer support."

Commenting on how the success of Bumotec machines can be mirrored by UK medical manufacturers, Lee Scott, Starrag UK's director for sales and applications, says: "The UK medical manufacturing market is an important sector for Starrag and, underpinned by our engineering applications knowledge, we know that Bumotec users can 'hit the ground running' in terms of gaining production efficiencies."

Starrag Group is a global technology leader in manufacturing high-precision machine tools for milling, turning, boring and grinding workpieces of metallic,

composite and ceramic materials. Principle customers are internationally active companies in the aerospace, energy, transportation and industrial sectors, for example industrial components, luxury goods, med-tech. In addition to its portfolio of machine tools, Starrag Group provides integrated technology and maintenance services that significantly enhance customer quality and productivity.

The umbrella brand Starrag unites the product ranges Berthiez, Bumotec, Dörries, Droop+Rein, Ecospeed, Heckert, Scharmann, SIP, Starrag, TTL and WMW.

Headquartered in Rorschach/Switzerland, the Starrag Group operates manufacturing plants in Switzerland, Germany, France, the UK and India and has established a network of sales and services subsidiaries in the most important customer countries.

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Lincoln laser manufacturer is a cut above the rest

Lincoln-based manufacturing firm Micrometric is continuing to lead the way in laser manufacturing after identifying new uses for a high-precision laser machine predominantly used to produce medical components.

The company, which produces fine parts and precision components for a range of customers in the UK, Europe and across the world, has introduced Coherent's StarCut Tube system to its range of cutting equipment.

The fully automated machine is designed to laser cut, drill and mark tubular or flat metal components and is traditionally used by subcontract manufacturers to produce exclusive medical instruments with extremely high precision.



Since investing in this equipment, Micrometric's skilled and knowledgeable workforce have found new uses for this machine; unlike most UK subcontractors, the company has been using it to produce a flexible range of tube components in large volumes as well as finer, more precise parts for a wide range of sectors other than medical.

Managing director at Micrometric, Neil Main says: "We invested in the StarCut Tube machine as we knew it could deliver the required performance for a wide range of projects and had a long, low-maintenance lifetime which is necessary for cost-effective operations within our working environment.

"The machine's versatility allows us to cut thinner tubes than our other machines and has allowed us to extend our capabilities and the range of customers we can service."

Micrometric has already used the machine to cut, assemble and weld complex medical and aerospace components for companies which produce aerospace filters, automated injection needles, endoscopy components and MRI scanning equipment.

Neil Main continues: "Thanks to this machine, we can produce components for different types of sectors, including airflow sensors, flexible protective covers, valves used for car suspension systems, industrial and medical endoscopy equipment, printing machines and food production.

"We've always tried to address difficult tasks by investing heavily in our equipment and in staff training. This machine is perfect for customers looking to produce reliable components with extremely precise design criteria, as well as those using materials which are less common than sheet steel."

He concludes: "We're looking forward to starting some exciting new projects using this machine in the New Year by working with both our existing customers and new ones too."

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Arrowsmith takes-off with MSC

As a prominent Tier 1 subcontract supplier to the world's leading aerospace OEMs, Coventry based Arrowsmith Engineering has a reputation for being a high-quality fast response business that covers everything from research & development, machining and non-destructive testing to pressure testing services and more.

Recently winning the Queen's Award for International Trade that adds to a ream of awards, accolades and certifications, Arrowsmith has, like most companies, witnessed challenges throughout the pandemic. As an SC21 Silver accredited company with customer approvals from the likes of Rolls-Royce, GKN, ITP, Bombardier, Eaton and Meggitt, the pedigree of Arrowsmith is beyond reproach as is its involvement in the aerospace industry. For the West Midlands company, the pandemic induced challenges facing the aero sector have been overcome by diversifying and adapting to market forces and relying upon the expertise of its supply chain and, in particular, MSC Industrial Supply Co.

Arrowsmith, like the entire aerospace industry, has witnessed the perfect storm of reduced orders and output, COVID compliant distancing and temporarily forced staff reduction levels via the furlough scheme, all created by worldwide flight restrictions. However, Arrowsmith has seen it overcome numerous industry downturns' in its five decades of business and this experience has seen the company once again seamlessly adapt to market conditions. With MSC supporting Arrowsmith over the last five years to deliver cost-reductions and productivity savings of more than £500,000, Arrowsmith has again called upon its supply partner.

The challenge

With a temporary dip in aerospace work, Arrowsmith was intent upon winning new business during the pandemic; a significant challenge when faced with COVID compliant remote working and social distancing. The AS:9100 and ISO:14001 certified manufacturer were in the tender process with an aero-engine OEM to undertake the machining of more than 50 aluminium engine components. Arrowsmith turned to MSC to support the project. Arrowsmith wanted to know if MSC could firstly support them to undertake the project



with product and application support; secondly, could MSC meet the tight dimensional and surface finish criteria specified within the project and finally, could MSC engineers reduce the number of processes and projected production times? The answer to all three questions was a resounding yes.

MSC application engineer Matthew Garbett reviewed Arrowsmith's proposed machining strategy for the parts and set about improving the process. In normal circumstances, this is part of the daily job for any of MSC's applications and engineering team, but with COVID restrictions in place, he had to undertake the challenge remotely. Working as an extension of the Arrowsmith engineering team, the MSC engineer reviewed the proposed strategy for five setups on two 3-axis machining centres and subsequently adapted the process to two setups on a single 5-axis machine.

The solution

The MSC engineer was given the work envelope and axis movement dimensions of the Leadwell V40i 5-axis VMC and intuitively configured a solution with Lang Technik, the existing workholding provider at Arrowsmith. The solution included the adaptation of the existing zero-point clamping system to add a secondary clamping plate and two Lang vices for clamping the extra-long parts. Lang Technik assisted MSC to offer Arrowsmith a viable solution; the MSC engineer had managed to theoretically reduce setups and

subsequently eliminate the opportunity for dimensional error that can occur from multiple setups.

With the machine, work envelope and workholding configuration defined, MSC's Matthew Garbett was supplied the CAD drawing and model of the component by Arrowsmith. Unlike alternate suppliers, MSC takes service to another level. In this instance, the MSC engineer programmed the dimensions of the machine with Autodesk's Fusion 360 package and then exported the data to Autodesk PowerMill to programme the toolpaths and machining strategy. Commenting upon this, MSC's Matthew Garbett says: "On the shop floor, Arrowsmith utilise ALPHACAM as their preferred CAM system. Our current library of post-processors was relevant to their Leadwell 5-axis machine, which meant we could provide a stable, secure machining process in PowerMill, that would be free from potential collisions whilst ensuring machining strategies were optimised."

The right tools for the job

As well as remote programming and defining a machining strategy, it was important to select the right cutting tools to yield optimum results. The diverse portfolio of brands and a seemingly endless range of cutting tools available from MSC provided the optimal solution. Matthew Garbett explains: "Based upon the experience of MSC's engineers, we know that machining aluminium aerospace components of this type would be best suited to the solid

carbide milling range offered by SGS Carbide. Sharing the details of the project with Steve Neale, a senior application engineer at SGS, we remotely created and optimised a selection of cutting tools that would enhance machining performance and tool life while consolidating the number of tools required.

The MSC strategy was to face machine the top of the part and add the location features for the zero-point clamping system. The second setup was to undertake the complete machining of the remaining faces, edges, pockets, chamfers, holes and threads. The tools selected for the process were a Kennametal face mill with three indexable inserts that cost-effectively replaced a previous 6-insert face mill, as well as a solid carbide Accupro Drill and a DC Swiss threading tool. Following the heavy material removal operation, MSC collaborated with SGS and used a series of 2, 3 and 4-flute solid carbide end mills, ranging from 2 to 16 mm in diameter. Both square end and ball nose designations were utilised for machining all features, including edge radii, pockets and slots.

Putting theory into practice

Once lockdown restrictions were relaxed and site visits were allowed, an appointment was planned. With the CAM programme and post-processor in place, MSC's Matthew Garbett and Steve Neale from SGS worked in collaboration with Arrowsmith engineers to setup the machine, running preliminary parts and optimising the cutting speeds and feeds in accordance with the parameters of the machine. While the machining strategy was in place, the cutting speeds and feeds had to be tweaked on the machine, as the workholding setup and machining strategy had the potential for part deflection.

The results

By undertaking the project remotely, MSC has seamlessly integrated this complex machining process into the shop floor at Arrowsmith. By adapting the machining strategy to just two setups, MSC has guaranteed process stability for critical aerospace components with tolerances across the part tied to less than 50 microns. As well as ensuring process stability, MSC has instigated a machining strategy that is yielding a cycle time of just two hours 20 minutes for the extremely complex parts while demonstrating exceptional surface finishes. Furthermore, by utilising specific



cutting tools from SGS Carbide, Accupro and Kennametal, MSC reduced tooling costs and consumption via improved tool life and greater flexibility and autonomy for all aluminium machining tasks.

One of the key benefits for Arrowsmith is the professional, reliable technical support from MSC. By turning to MSC during a period where Arrowsmith is operating with less staff to adhere to Covid safe work practices, the integration of the MSC engineer has enabled Arrowsmith engineers to quote and plan for new work. MSC has freed engineering capacity at Arrowsmith and their engineers have subsequently been able to focus on and win new projects of significant value.

Martin Porter, general manager at Arrowsmith, says: "MSC has collaborated with us on several complex projects over the last four years. On this occasion, their application engineer, Matthew Garbett, worked alongside and remotely with our engineering team. His level of expertise and commitment was instrumental in helping us to secure future projects. MSC shares our ambition to be the best we can be, so like

us; they see the importance of creating efficient and cost-effective processes at every stage of production."

MSC's national account manager Oliver Latchford adds: "Conducting remote working to such an extent has been a true testament to the expertise MSC engineers have and also our relationships and understanding of our customers and their needs. In this instance, Arrowsmith approached MSC with set criteria and we have successfully fulfilled and exceeded the requirements. More manufacturers are bringing MSC engineers into the manufacturing process at a much earlier stage than ever before. Customers are calling upon MSC to support them right at the 'new product introduction' phase. By utilising our expertise and solutions at such an early stage, we can yield huge benefits for the end-users and this is why MSC is the partner of choice."

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Precision engineering firm invests in British-built 5-axis machinery

A leading Leicester-based precision engineering company has reaffirmed its commitment to high-quality, high-accuracy production by becoming one of the first to invest in Yamazaki Mazak's new, British-built CV5-500 simultaneous 5-axis machining centre.

JWA Tooling (JWA) is a specialist provider of high-precision manufacturing solutions to some of the world's largest blue-chip companies, with capabilities including precision CNC milling, turning and wire EDM.

The company had previously invested in a Mazak VCN-530C vertical machining centre to meet customer demand for larger batch sizes. Since its installation in November 2019, the machine's reliability and speed has proved vital to JWA's day-to-day operations, freeing up its highly skilled workforce to take on more complex tasks.

To build on the success of the previous machine, JWA has now invested in another VCN-530C and purchased one of Mazak's first state-of-the-art 5-axis CV5-500 machining centres. Conceived, designed and built in the UK, the CV5-500 is unique in its category due to its high-rigidity bridge construction with a fully supported trunnion table that travels in the Y-axis direction under the bridge, ultimately delivering an extremely accurate and compact machining solution.

The CV5-500's 12,000 rpm spindle is capable of a peak performance of 18.5 kW and 119.4 Nm, making it suitable for the wide range of materials JWA works with. Its rapid traverse rates of 36 m/min in the X, Y and Z axes also allows for highly agile performance and it can process workpieces up to Ø500 mm x H320 mm and up to 200 kg in weight.

This 5-axis capability will enable JWA to increase the manufacture of high-quality parts and reduce the amount of operations required for job setups. Additionally, the CV5-500's compatibility with a wide variety of automation systems will allow the company to implement 'lights out' machining, further expanding its overall production capacity.

Peter Wood, operations director at JWA comments: "In order to take that next step



as a business and take on larger orders, we needed precise, automation-ready machine tools that could operate with minimal manual production. With these aims in mind, it was clear that Mazak were the first choice.

"We were really impressed with the first VCN-530C we purchased, it was a clear step above everything that we had used so far. Previously, when customers asked for increasingly accurate machining within five microns or less, we achieved those tolerances by constantly tweaking our old machine, but now we don't have to do that with our new units.

"We've been very impressed with Mazak as a company and liked what we saw when we went to the Open House event at their Worcester HQ in December last year. It was here we saw the new CV5-500, which caught my eye immediately. Frankly, it's just a great machine, it's well-built and the best 5-axis machine I've seen at that price point by far, so we thought we would take the plunge. We've certainly got high hopes for it going forward."

Alan Mucklow, managing director UK & Ireland sales & service division at Yamazaki Mazak, adds: "JWA Tooling is a fantastic example of a British business using high-precision machining centres to increase output quality and volume. We are very happy to have seen the transformational effect the VCN-530C has



had on their day-to-day operations and are extremely confident our new CV5-500 can deliver a further step-change in productivity.

"As the latest in a long line of Mazak machines to have been fully designed and built in Britain, the CV5-500 breaks the mould for the compact, fully simultaneous 5-axis machining category. Because of its easy integration with ancillary automation systems, we have every confidence it will deliver the 'lights out' machining capability JWA require to take their business to the next level."

For more information on Yamazaki Mazak's new CV5-500 machining centre, please visit: www.mazakeu.com/cv5-500/.

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New 5-axis machining centre from Germany

Featuring a generous working volume of 815 x 510 x 510 mm in a small 2.5 x 1.8 m footprint on the shop floor, the new VC850-5A is the latest prismatic metalcutting machine to be launched by German manufacturer Spinner Werkzeugmaschinenfabrik, whose factory is located near Munich. The 5-axis, vertical-spindle machining centre, which is configured with a +110 / -5 degree swivelling trunnion carrying the rotary table, is available in the UK and Ireland through sole sales and service agent Whitehouse Machine Tools.

Managing director Tim Whitehouse comments: "This is a top-end machine with robust rotary axes, which are normally the weak point in 5-axis machining. They are driven by a new planetary gear train and are fitted with absolute rotary scales instead of incremental encoder feedback.

"We are also impressed by the additional clamping plate beside the table that allows Op20 as well as Op10 to be programmed into a single cycle for one-hit machining. The option of a rotary hydraulic supply for

automatic workpiece clamping is a further benefit, as it introduces the possibility of automation for long periods of unattended production."

The 5-tonne machine has an FEM-optimised, cast construction that provides a high level of rigidity and vibration damping for elevated cutting performance and high standards of surface finish on machined components up to 200 kg. Further advantages are that tool life is extended and accuracy of machining is enhanced.

Part of the reason for the machine's compactness is the patented method for protecting the saddle's Y-axis guideway from swarf and coolant ingress using a single wiper system, eliminating the need for a telescopic cover. The depth of the machine is consequently shorter, leading to a 30 percent reduction in the area needed for installation. The X-axis guideway also has a single wiper, allowing the table to move to the extremes to simplify automated loading and unloading from the sides.

Powerful, high-speed spindle options are 12,000 rpm SK40 / BT40 or 18,000 rpm



HSK63, both rated at approximately 18 kW and offering 86 and 57 Nm of torque respectively. They are served by a 32-pocket tool magazine, although a 48-station version is available. Rapid traverse in all linear axes is 40 m/min to minimise non-cutting times.

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LOKUMA

Work smarter

MILL P 500U 5-axis simultaneous machining centres from GF Machining Solutions

With their powerful and dynamic material removal capabilities and high rigidity characteristics, GF Machining Solutions' Mikron MILL P 500U simultaneous 5-axis machining centres deliver exceptional accuracies and impressive cutting performance when machining high-precision, complex components made from 'difficult-to-machine' materials.

The machines' advanced thermal stability characteristics ensure reliable precision over long machining runs and their performance is further enhanced through the integration and availability of smart, intelligent, technology modules.

Mikron MILL P 500U machining centres provide manufacturers of precision components and mould tools with exceptional accuracies and unrivalled process reliability which, in large part, is down to the machines' built-in thermo-stability and their symmetrical design.

Even when ramping up speeds and feeds and taking aggressive depths of cut, MILL P 500U machines are more than capable of delivering best-in-class accuracies and process reliability which explains why they have been so well received by component manufacturers operating in the aerospace, defence, motorsport and automotive sectors, to name but a few.

MILL P 500U machines are fast, powerful and flexible

As well as featuring 1.7g acceleration/ deceleration rates and impressive 45 m/min rapids, the machines are equipped with 36 kW Step-Tec high-performance and high-torque spindles, 20,000 rpm and rotary tilting tables that can accommodate workpieces up to 707 mm in diameter and up to 600 kg in weight.

The rotary tilting table, +91/-121 degrees and Nm x 360 degrees, is available with several options: T-slot tables accommodating a payload of 200 kg, 400 kg or 600 kg and pallet tables accommodating a payload of 200 kg, 400 kg or 600 kg.

Incremental, direct angle measuring systems are mounted on the tilting and rotating axes to guarantee high positional and repeatable accuracies. Both axes are driven via water-cooled torque motors: one for T-slot tables, two for pallet tables on the



A-axis and one on the C-axis. For heavy-duty machining, the rotary and tilting axes can be clamped and, for improved machining stability, the tilting axis features clamping on both side supports.

With the 20,000 rpm Step-Tec HPC190 spindle, with a HSK-A63 tool interface, manufacturers have, at their disposal, a flexible, high-performance spindle solution renowned for its stiffness, power, speed and safety. Also available is Step-Tec's 36,000 rpm HVC150 motor spindle with a HSK-E50 tool interface. This spindle solution is aimed at mould makers using small cutting tools in conjunction with the machines' dynamic 1.7g acceleration to achieve best-in-class surface finishes.

250 percent increased productivity

Mikron MILL P 500U machines are built for automation, i.e. System 3R robot loading/unloading systems, which, according to GF Machining Solutions, doubles the machines' productivity by enabling customers to embrace unattended, lights-out operations.

Process reliability through SMART technology

MILL P 500U machines are equipped with GF Machining Solutions' Industry 4.0 smart technology that includes Machine Spindle Protection (MSP) and rConnect, a digital services platform that also includes Live Remote Assistance (LRA).

MSP protects the machines' spindles and machine geometry while maximising

machine uptime to reduce costs associated with unexpected spindle collisions. Collisions usually occur when a new CNC program is first executed.

MSP protects the machine and spindle during job setup by making it possible to absorb axial and lateral collisions and then restore perfect accuracy. The spindle can return to normal operations without any specific maintenance or recalibration, ensuring almost no downtime or collision-related costs.

Users' productivity, flexibility and autonomy are further protected and ensured by the MILL P 500 U's rConnect readiness.



Manufacturers simply choose the GF Machining Solutions digital service(s) that best meets their requirements. LRA, for example, delivers highly secure, direct, customer-authorised real-time remote assistance by connecting the customer with their local diagnostics centre and GF Machining Solutions' technical Helpdesk operations.

Through the LRA option, customer services can inspect a machine tool remotely, with diagnostics carried out by the customer's own technician or by a GF Machining Solutions' expert.

Precision component manufacturers and mould makers require machine tool solutions that deliver high precision, process reliability and high productivity. The Mikron MILL P 500 was designed to meet these needs.

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ETG soars like an eagle with new high-speed Ingersoll machine

For manufacturers looking to make a step-change in their machining strategies to implement true high-speed high-feed milling with impeccable surface finishes, the Engineering Technology Group (ETG) has now introduced a new line of machining centres from OPS Ingersoll.

The Eagle V5 Competition machine is available as a 3-axis and 5-axis variant, making it the perfect 'all-rounder' for high-speed precision machining. Developed as an 'all-rounder', the fully sealed OPS Ingersoll V5 Competition is suitable for rough and fine detail machining of graphite and copper electrodes, soft and hard steels as well as aluminium, all in the same technology.

The Eagle V5 Competition has an X-, Y- and Z-axis of 550 by 400 by 400 mm that travels over the 650 by 500 mm 3-axis table or 400 mm diameter 5-axis table with an acceleration rate of 15m/s^2 to accommodate the machining of parts up to 500 kg and 250 kg respectively. This is backed up with a 475 mm distance from the spindle flange to the top of the 5-axis pallet. The machine has a 15/17 kW HSK E40 spindle that can reach speeds up to 42,000 rpm as standard with a higher torque HSK E50 spindle with a maximum speed of 36,000 rpm available as an option.

The machine is also available with a choice of a 32 tool ATC or an 80-position tool change facility that can be located on either side of the machine to suit the possible integration of left or right-hand automation stations from the same supplier to link two technologies, EDM and HSC, or same technologies from the one system.

The gantry-type 5-axis machine has been impeccably designed to deliver the utmost in precision machining. This design includes a thermo symmetric design, high-precision ball screws, direct Heidenhain measuring systems, direct-coupled AC servo motors and a $\pm 0.1^\circ\text{C}$ temperature-controlled spindle.

Identifying what makes this high-speed machining centre different from standard machine tools, ETG's Scott Elsmere says: "A typical machining centre has a high mass in the head to absorb vibration whereas this high-speed machine has a lighter head and a



heavier mass at the bottom. In the case of the OPS Ingersoll Eagle V5 machine, this is a one-tonne mass in the head and a seven-ton mass in the base. This gives the machine much higher stability, a high dynamic and along with the CNC control, it helps cornering control as well as acceleration and deceleration, this combination completely removes 'jerk'. Additionally, whenever the machine moves, we have a constantly moving mass from the gantry-type design. The guideways are always supported at four locations and this means the dynamics of the machine never change, regardless of the location of the cutting head, unlike in a C-frame type machine. This makes a difference with precision, repeatability and surface finishes."

The V5 Competition machining centre is supplied with the Heidenhain TNC640 CNC control unit. Heidenhain exerted considerable resource to developing the control for true high-speed machining and the result is a control unit that has optimised motion control for enhanced precision. From an optional perspective, customers looking to reach the very epitome of precision can add the 3D Tuning Cycle option for increased contour accuracy and speed, the K-OPT kinematic system that

calibrates the drift of the machine kinematics and also the DCM automatic cycle dynamic collision monitoring system to prevent collisions.

Taking precision to a level that is the envy of the industry is the incorporation of a Renishaw infra-red OMP400 touch probe for low-contact in-process part measuring, which is complemented by the Blum laser LC50 DIGILOG non-contact tool measurement system. Both sitting securely in a clean area, the Blum DIGILOG measures tool length and diameter and it detects any in-process tool breakages. With too many technological advancements to mention, the Eagle V5 Competition is the envy of the industry when it comes to high-speed, high precision machining. For further details contact the Engineering Technology Group (ETG) to discuss your 'high-precision' machining needs with one of the product specialists.

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Wykes Engineering powers green energy drive with help from XYZ Machine Tools

Independently owned Wykes Engineering is at the forefront of the green energy revolution, manufacturing a range of products for renewable power generation. Its expertise covers systems including anaerobic digestion, wind power and solar. Wykes Engineering works in tandem with its sister company; Ancillary Equipment Ltd, a green power generation company that uses its technology. Demand for new systems and expansion of existing on-site anaerobic generation capacity at its Rushden, Northamptonshire, location led to investment in machining capacity. Part of which saw the arrival of large-capacity turning in the form of an XL 780 lathe from XYZ Machine Tools.

It was the anaerobic digestion side of the business that required the additional turning capacity provided by the XYZ XL 780. The anaerobic digestion systems produced by Wykes take 'out of date' or waste food products from supermarkets, local government household waste sites and food manufacturers. It then converts them into gas, which is combusted to generate electricity. To maximise this process, food must be separated from its packaging, which requires a variety of shafts in differing diameters and lengths, with hardened protrusions. These rotate at around 1,000 revs/min to pulp the waste; the resulting 'sludge' is then transferred to storage tanks for anaerobic digestion.

The XYZ XL 780 with its 780 mm swing over the bed and 3 m distance between centres provides Wykes Engineering with the capacity and versatility it requires for the machining of smaller parts. The purchase of the XYZ XL 780 lathe was Wykes Engineering's first move into CNC turning, so a priority had to be the ease-of-use and the support for programmers and operators. The Siemens 828D ShopTurn control proved to be ideal for their needs.

"The Siemens control was completely new to us, but we have found it extremely easy to use, especially with the training support we received from XYZ Machine Tools. We had a demonstration of the machine at XYZ's Burlcombe factory on a Monday, which convinced us that it was the right machine and control for us. We placed the order the



following week and the machine was installed and commissioned just ten days later," says John Houghton, Wykes Engineering's design engineer.

Over and above the ease-of-use of the Siemens control, the XYZ XL 780 offered other advantages to Wykes Engineering. First of which was the price, having reviewed the market for lathes of this capacity it found the XYZ machine to be 10-20 percent less expensive than its competitors. Also, they were reassured that service support and spares were readily available should the need arise. Technical support was a big plus as John Houghton explains: "If we had any questions relating to programming and operating the machine, which was all part of our learning curve, they were answered with a simple phone call to XYZ Machine Tools."

"The combination of the XYZ XL 780's versatility, where we can use it for large and small components and the Siemens control means it is easy to repeat jobs accurately when we need to, not only that we are seeing cycle time reductions of around 40 percent when compared to our manual lathes, with exceptional repeatability between components, which is impacting greatly on workflow through the factory. The arrival of the XYZ XL 780 is also having



an impact on component design, as we can now machine features that would either be difficult or time-consuming if machined manually," says John Cresswell, Wykes Engineering's design office manager.

The arrival of the XYZ XL 780 brought impressive productivity gains, while most components are one-offs or low volume, they do repeat. The combination of the machine and Siemens control system gives Wykes Engineering a competitive advantage due to the ability to call up a program and quickly replicate something that was produced previously.

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Triple Y-axis turret lathe has 80 mm bar capacity

The largest bar capacity CNC lathe in the Citizen Machinery product portfolio is the new 12-axis Miyano ABX-80THY, a fixed-head model with twin-opposed C-axis spindles and three turrets moving over box ways for maximum rigidity. They enable vibration-free turn-milling that is enhanced by the machine's more than 11 tonnes installed weight. The bar auto is ideal for continuous, automated, unattended production of components from bar up to 80 mm in diameter. Maximum component diameter when chucking is 165 mm.

The three turrets can be in cut simultaneously to achieve very high levels of productivity. Two turrets are positioned above the spindle centreline and are dedicated to working at the 15 kW/ 2,750 rpm main spindle and 7.5 kW/ 5,000 rpm counter spindle respectively. The other turret is located below and has unrestricted travel to operate at either spindle to provide flexibility for balancing front and reverse end machining operations, or to deploy a tailstock centre to support

shaft-type components being machined in either spindle.

Alternatively, a Miyano ABX-80SYY 9-axis CNC lathe is available with two Y-axis turrets, one upper and one lower, which can be used in tandem or separately at either spindle.

All turrets have 80 mm of Y-axis movement in addition to X- and Z-axis travels and the 12 tool stations in each turret are live, offering 6,000 rpm rotational speed and 40 Nm of torque for in-cycle milling and drilling equivalent to that of a machining centre. So components, no matter how complex, are nearly always produced in one hit, raising productivity further and enhancing machining accuracy. Rapid traverse rates are fast at up to 30 m/min in Z, promoting short non-cutting times.

Temperature variations around the machine are constantly measured by sensors and fed back to the FANUC Series 30i-B control, which incorporates software to



compensate for thermal movement by adjusting the relevant axis positions. In this way, displacement of the turret from the main spindle in the X-axis, for example, is reduced from 30 down to 10 microns.

An in-machine tool setter, parts catcher and conveyor and a variety of different swarf conveyors to suit the type of chip are all available.

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THE ALPHA CNC is turning 25



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Toolmaker buys bridge-type machining centre to produce larger moulds to higher accuracy

Moorland Toolmaking in Batley, West Yorkshire has been a user of Hurco machining centres since 1985. It was first attracted by the supplier's Ultimax twin-screen control fitted to a KMB1x knee-type mill, on which a program could be created conversationally at one screen while a graphic of the part was automatically generated on the other.

Toolroom manager David Gibson recalls: "Its ease-of-use was perfect for a toolmaking environment, where one-offs are the norm. 35 years on, we now operate 10 Hurco 3-axis CNC machining centres due to their reliability, good performance and competitive price. All of them feature a similar control, although now the software, WinMax, is Windows-based and much updated in functionality."

He pointed in particular to the patented Ultimotion feature with up to 10,000 blocks of dynamic variable look ahead, which automatically determines the optimal trajectory for the cutter around the workpiece. It keeps the programmed feed rate consistent and increases speed when machining around corners, reducing cycle times and improving surface finish. It is better than the smoothing features offered by CAD/CAM software and improves upon CAM output by providing better machine kinematics.

Even today, with mould tools being considerably more complex than in the past, the toolmaking and refurbishment specialist's operators still write three in ten programs at the control, mainly the simpler ones for producing bolsters and plates. The remainder are prepared off-line in Autodesk CAM from customers' CAD models.



The largest Hurco machine onsite is a VMX64Ti with a 1,625 x 864 x 762 mm working volume. In March 2020, the toolmaker invested in a slightly smaller BX50i double-column, bridge-type machining centre with a 1,350 x 950 x 600 mm envelope for producing big tools weighing up to 2.5 tonnes to even higher accuracy.

It is also used for producing other large components subcontracted out to the firm, a part of the business that currently accounts for 10 percent of turnover and involves not only milling but also turning, sparking, wire erosion and deep-hole drilling. On the toolmaking side, which accounts for the other 90 percent, around two-thirds of output goes to trade moulders serving the automotive industry and the rest to sectors such as white goods and garden ware.

The new, 13-tonne machine represents a step up in accuracy and performance compared with the other prismatic machining equipment in the 16,000 sq ft Batley factory. The HSK-63A spindle speed is 18,000 rpm, up 50 percent on the previous maximum on site, scales rather than encoders provide feedback of linear axis positions and thermal compensation measures have been incorporated throughout the machine.

David Gibson continues: "We saw the BX50i on the Hurco stand at the last MACH show and were impressed at its robust construction. Since the machine was installed, we have been holding dimensional tolerances of better than ± 25 microns and we expect that level of precision to be long-term.

"We also find that moulds coming off the machine have a better surface finish that typically needs 30 percent less polishing. It is a big saving, especially on large tools that can take up to a month to machine and then a further week to hand finish."

He added that the higher spindle speed is a further advantage, as smaller diameter cutters can be used so fewer features need to be sparked out, saving the time and cost involved in transferring tools to a die-sink EDM machine and of making copper and



graphite electrodes on the other Hurcos. In any case, milled features like deep ribs are quicker and easier to polish than if they are sparked, as the latter operation leaves a hard recast layer.

Despite being a satisfied, long-time Hurco machine user, Moorland Toolmaking considered two bridge-type machining centres offered from other potential sources. What really swung the decision in favour of the incumbent supplier was the generous 950 mm Y-axis travel on the BX50i, 150 mm more than was available on other machines of equivalent footprint, approximately 4.5 m², that were reviewed.

Consequently, the table will accommodate a 1 m wide workpiece, extending the size of component that can be produced in one hit rather than having to reposition it on the table. It also extends the size of part that can be tackled in two hits.

David Gibson concludes: "The BX50i was delivered the day the country was locked down due to COVID-19. Hurco engineers did a great job installing the machine in difficult circumstances, with some of their staff on furlough.

"Since then, the machine has run faultlessly during the day and we have full confidence in taking advantage of extensive lights-out running for finishing our moulds through the night, which we do frequently."

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DGF Engineering takes control with Dugard

Founded in 2005, Royston-based DGF Engineering Ltd has recently bought its first CNC machining centre from Dugard. The subcontract manufacturer works with customers to undertake everything from design and consultation through to prototypes, small batches and production run machining.



With the 3-axis machining centre marketplace being extremely competitive, son of company founder David, Liam Fernard discussed why the business opted for the Dugard 1000 machine with its spacious X, Y and Z axes of 1,050 by 640 by 660 mm. He says: "There is a range of reasons why we picked Dugard as our supplier for this machine. Firstly, we wanted to move away from our current supplier, as we weren't particularly happy with the service. With regards to the Dugard machine, we like the look of the machine. It's a robust and durable machine and it ticked all the boxes for us. We do quite a lot of large workpieces and the 1 m bed is perfect for larger work. With regards to training, we went to Dugard on the south coast and it was excellent and really comprehensive."

The new Dugard 1000 at Hertfordshire based DGF Engineering will be tasked with machining subcontract components that range from parts for the scientific and laboratory equipment sectors, gas analysers and chemical detection systems, telecommunications and optical fibre and cable manufacturing work as well as bespoke machining for the automotive and agricultural sectors. The recently installed 3-axis machining centre from Dugard Machine Tools is the first machine at DGF Engineering with a Mitsubishi CNC control unit, the powerful Mitsubishi M80.

As well as a spacious work envelope, the bed of the machine can accept a maximum table load of 1,176 kg while the BT40 spindle taper is supplied cutting tools from a 24-position drum type tool changer. With cutting feed rates in X, Y and Z axes of 12 m/min and rapid traverse rates of 30 m/min, the extremely robust and well-built Dugard 1000 vertical machining centre provide stability, rigidity and productivity levels that are ideal for subcontract manufacturing companies.

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Shorten processes with three cutting edges

The WTX Feed BR drill reamer from CERATIZIT ensures high accuracy with tight tolerances and perfect surface quality. Spot drilling, drilling and reaming to a tolerance of H7 in just one operation? Not a problem for the WTX Feed BR three-edged drill reamer. The machining specialist has succeeded in streamlining and improving the manufacturing process further with this newly developed tool.

The key feature of this drilling tool, especially for steel and cast-iron machining, is its three effective cutting edges and six guide lands which are responsible for a significantly shorter cycle times, high accuracy and surface quality. In a nutshell, the WTX Feed BR is ideal for all machine operators who require extremely high-quality holes, but do not need the level of precision that can only be achieved with a pure reamer.

The design of the WTX Feed BR solid carbide drill reamer, with three cutting edges, ensures greater contact in the hole, which delivers greater cylindricity and roundness. A considerably tighter tolerance can be maintained for the hole produced, compared to a two-edged drill reamer. These have a rather wobbly penetration behaviour, in contrast the tip geometry of the drill reamer with three cutting edges achieves significantly better centring and positioning.

The geometry of the three cutting edges, which have been taken from the WTX FEED high-feed drill, also open-up applications in long-chipping and soft materials, which was previously only possible to a limited extent with the two-edged version. WTX Feed BR also achieves higher cutting values so users can enjoy shorter machining times with greater tolerances.

The tool is particularly wear-resistant thanks to its proven DPX14S Dragonskin coating. This is a TiAlN nanolayer coating with a coefficient of friction, dry against steel, of just 0.35. It is stable up to a maximum application temperature of 1,000 °C.

A drilling test using an 8 mm tool in 42CRMOS4, H7 hole, at a cutting speed V_c of 55 to 100 m/min resulted in the following: Compared to a version with two cutting edges, the three-edged WTX Feed BR drill reamer achieves a considerably lower deviation, in relation to the diameter, from the hole tolerance. The variance was a maximum of 0.013 mm.

The WTX Feed BR drill reamer can be used for a wide range of product applications from H7 standard applications to diameter graduations in the 0.01 mm range. The tools are available throughout in 3xD and 5xD versions. Find out more at www.cuttingtools.ceratizit.com

For over 95 years, CERATIZIT has been a pioneer in developing exceptional hard material solutions for machining and wear protection. The private company, with registered offices in Mamer, Luxembourg, develops and produces highly specialised cutting tools, indexable inserts, rods made from hard materials and wear parts. The CERATIZIT Group is a leader in various application segments and successfully develops new carbide, cermet and ceramic grades, such as for wood and stone working. With more than 8,000 employees at more than 30 production facilities and a sales network with over 50 branches, it is a global player in the carbide industry. The company's international network includes subsidiary Stadler Metalle and joint venture CB-CERATIZIT.



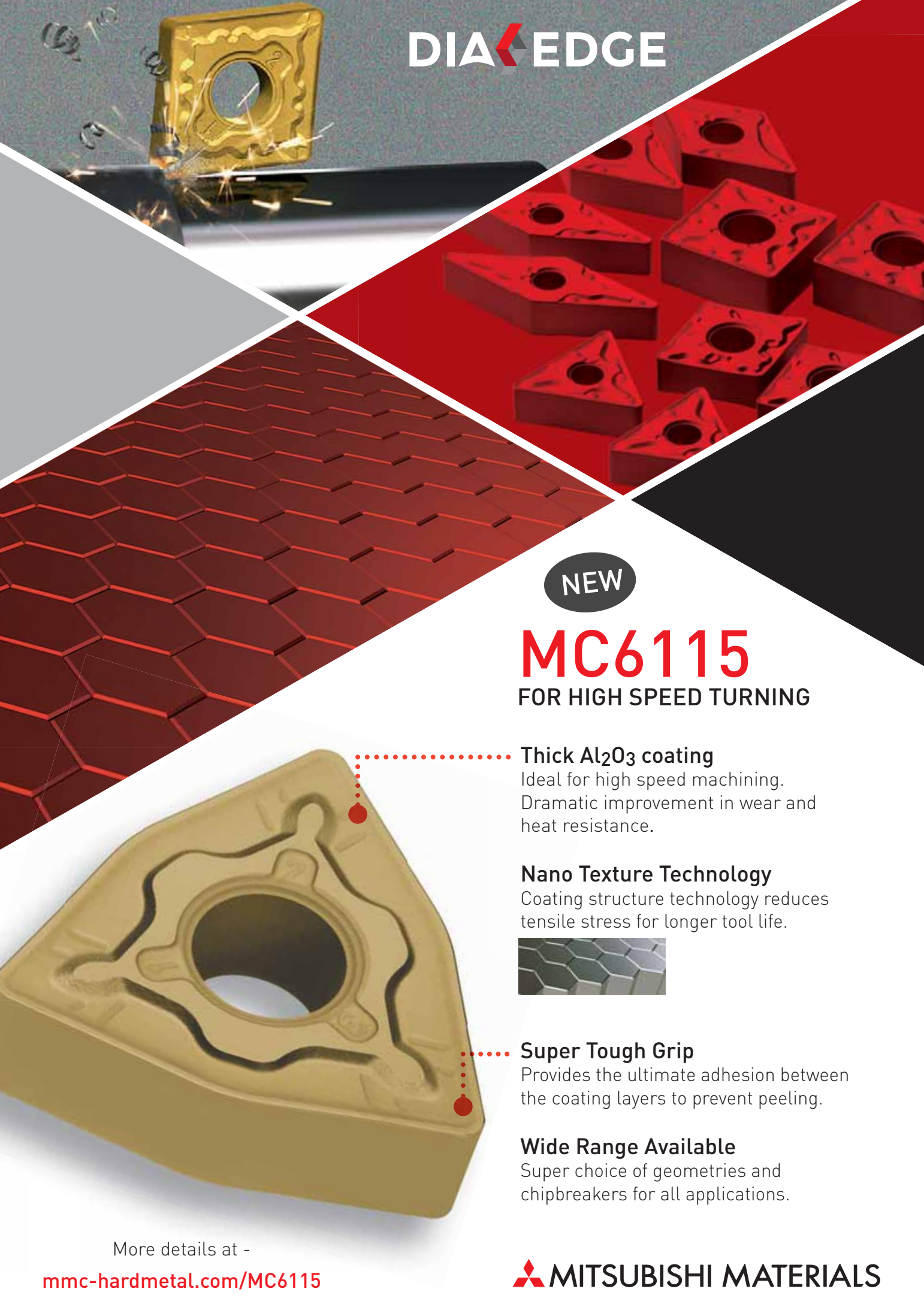
The machining experts at the CERATIZIT Group are masters of the carbide production process, from the powder to the finished cutting tool. Not only does this allow special-purpose tools to be developed for customer-specific applications, but it also means a full range of industry-specific standard tools are held in stock and available immediately.

As a technology leader, the company is continually investing in research and development and holds more than 1,000 patents. Innovative hard material solutions from CERATIZIT are used in various sectors, including mechanical engineering and toolmaking, the automotive and aerospace industries and in the oil, gas and medical industries.

The constant innovation of materials and applications helps the company and its customers to create a large number of machines, tools, applications and consumer goods which shape our immediate environment and are part of our everyday life.

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 MITSUBISHI MATERIALS

New technology provides high-speed plus durability

There is an increasing demand from the market for an improvement in machining efficiency and for higher cutting speeds. Additionally, the use of high strength materials in components that requires cutting tools with high wear resistance is also increasing. However, cutting tools with a high wear resistance are generally prone to chipping and instability. To meet the demand, Mitsubishi Materials has released MC6115, a new CVD coated turning grade for steel machining, which is capable of both high-speed machining and providing excellent cutting-edge stability.

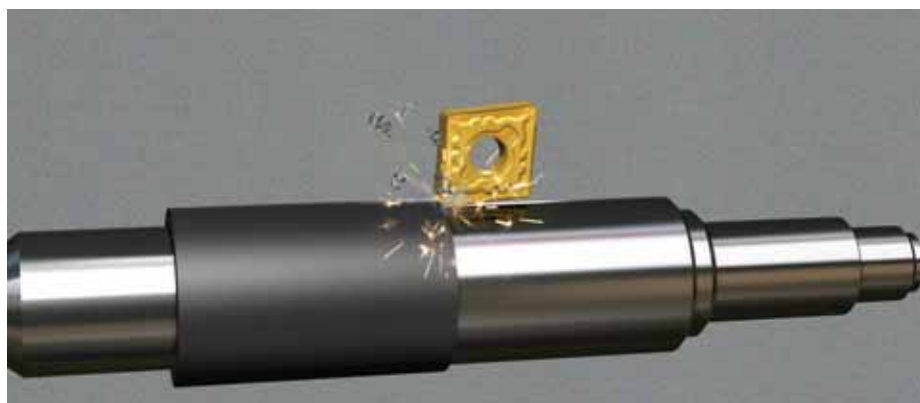
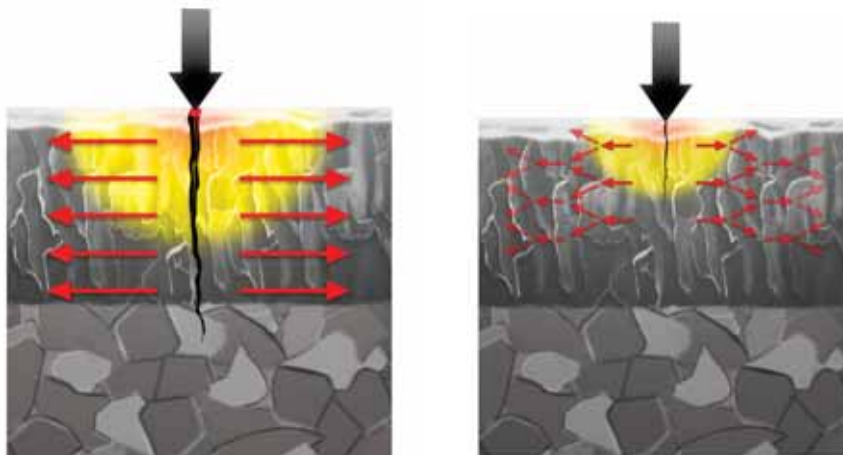
MC6115 has the combination of a high hardness base material and new thick Al₂O₃ outer coating with improved wear resistance at high temperatures. It also has higher peeling resistance and cutting-edge stability achieved by super TOUGH-GRIP technology. This provides the ultimate enhancement of the adhesion between the Al₂O₃ and TiCN coating layers.

Super Nano texture technology

The outstanding crystal orientation of the Al₂O₃ coating has been developed by improving the conventional Nano Texture Technology. These technological improvements increase both wear resistance and tool life.

Preventing wear and sudden fracturing

Cracks that occur due to the impacts during unstable cutting are prevented by the relaxation of the tensile stress of the coating. The MC6115 grade decreases the tensile stress by 80 percent compared to conventional CVD inserts. When cracks are generated in the surface of coatings during machining, they propagate through into the substrate due to the large tensile stress in the coating structure. This creates one of the main causes of sudden insert breakage. MC6115 has a much lower level of stress



than conventional CVD coatings due to the surface treatment that spreads the force of impacts during machining and protects it from sudden fracturing.

A new range of possibilities

The combination of the tough substrate and

wear resistant coating enables high performance during both high speed continuous and interrupted cutting, thereby permitting a wider range of steel turning applications up to a cutting speed of 480 m/min (Vc).

The inserts are finished in a gold colour for easy identification of used edges and are available in 6 negative geometries, CNMG, DNMG, SNMG, TNMG, VNMG and WNMG, with 11 different chipbreakers.



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Efficient machining of titanium

Following the introduction of its newly developed IG3I substrate, Horn is optimising its DS solid carbide end mills to enable productive, cost-effective machining of titanium and its alloys. By combining the novel carbide grade with a new coating, the tool specialist has been able to increase cutter life significantly.

Sharp micro-geometry on the cutting edges, positive rake angles, large clearance angles and polished flutes prevent strain hardening of the workpiece and built-up edges on the rake faces of the mill when machining titanium. Variable helix angles and different tooth pitches ensure quiet, low-vibration milling.



Horn's DS end mills for machining titanium are available in diameters from 2 mm to 20 mm and with four or five flutes

Despite the sharp cutting edges, the new coating demonstrates very high layer adhesion, ensuring good edge stability. Thanks to its high temperature resistance, the coating serves as a heat shield and reduces the amount of heat transferred to the carbide, which demonstrates homogeneous wear.

The effective length is two or three times the diameter. DS titanium milling cutters were developed based on the tried-and-tested solid carbide milling cutters in the DS system, which for years have been used to machine soft and hardened steels, chromium-nickel steels and superalloys as well as copper, aluminium, plastics and fibre-reinforced plastics. The end mills are available in diameters from 2 mm to 20 mm as standard, with four or five flutes.

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

Since 1996, the UK operation has had local tool design manufacturing capabilities. These were significantly increased following major expansion of the Ringwood site in 2004 and further enhanced in 2006 with additional facilities dedicated to the manufacture of customised tooling.

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Walter delivers new thread of productivity

With the arrival of the new T2710 Series, Walter is now extending the concept of its multiple-row thread milling cutters for producing shorter threads. Thanks to small spaces between insert rows, the T2710 has been specially designed for highly productive processing of thread depths up to 1.5XD.

Even with short thread depths, the simultaneous machining of several thread sections by the new T2710 Series reduces machining time enormously. Productivity is further amplified by the highly wear-resistant thread milling inserts of the Walter WSM37S Tiger-tec® Silver grade.

Suitable for universal use, the rigid tool body incorporates multiple rows of indexable inserts developed specifically for thread milling. The tool body design has been optimised with minimum spaces between the insert rows to increase productivity levels when creating short threads. The tool body and inserts are suitable for threads with a nominal diameter that starts from 20 mm and upwards with a thread pitch range from 1.5 to 6 mm and for Imperial threads a TPI of 18 to 6. This gives the new Walter T2710 Series complete flexibility for threading both metric and Imperial threads regardless of pitch and angle.

To meet the complete needs of industry, Walter has introduced several new inserts for threads from M125 to UN 5inch, inserts with a pitch range from 6 to 10 mm and 4 TPI as well as inserts with a 55-degree flank angle for BSP threads. The new additions add to the already available standard insert range that includes M24 to M125, UNC1 to UN5 and G1 to G3 1/2 in. Walter also has an extensive range of options for thread depths of 2XD, 2.5XD and also 3XD, so whatever your thread depth requirement, Walter has a solution.

The 3-edge inserts incorporate a chip



breaker groove and edge geometry that ensure a smooth cutting action with minimal cutting forces. This permits high cutting speeds and feeds per tooth while simultaneously reducing the radius corrections. For unfavourable conditions, Walter offers the thread milling inserts with a D61 geometry that provides an 'anti-vibration land'.

In addition to the high productivity and low costs per thread, users benefit from high thread quality and process reliability with the T2710. The smooth cutting action and low deflection of the tool is created by both the easy-cutting geometry and the variable internal coolant supply. The coolant supply can be directed both radially or axially, enabling customers to adapt the process for the machining of blind or through holes, optimally flushing the swarf from the thread. The Walter T2710 Series has been introduced for universal application with the rigid tool body providing the perfect

platform for a range of inserts that are perfect for productive threading of steel, stainless steel, cast iron, non-ferrous metals, high-temperature alloys and even hardened steels up to 55HRC.

Walter AG was founded in 1919 and is now one of the world's leading metalworking companies. As provider of specialised machining solutions, Walter offers a wide range of precision tools for milling, turning, drilling and threading applications. Walter works together with its customers to develop custom solutions for fully machining components for use in the aviation and aerospace industries, as well as automotive, energy and general engineering.

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Guhring dives into micro milling

The Guhring Diver Series of end mills has been an unparalleled success since its market introduction and now Guhring is extending the multitude of benefits of this industry-leading series to the micromachining sector. Recognised as the 'smallest diver in the world', the new RF100 Micro Diver end mills have been introduced for high-performance machining of small components.

The new micro-precision milling range is a universal tool that is perfect for every material and every application. Providing plunging and milling in a single tool, the new RF100 Micro Diver permits extreme cutting values with very highly cutting depths that until now, were beyond the realms of micro-precision cutting tools. Available in two variants, the 6808 and 6809, the RF100 Micro Diver features a symmetrical drilling face for stability when ramping and drilling, a new transition geometry to improve rigidity and an innovative flute form that further enhances rigidity and eliminates vibration.

The RF100 Micro Diver 6808 Series is a three-flute solid carbide end mill suitable for cutting materials up to 48HRC at depths up to 2.5XD. With a 40-degree helix angle to evacuate chips from the work area when conducting high-speed machining, the 6808 Series is available with a H5 4 or 6 mm shank diameter and a H8 cutting diameter from 0.79 mm to 3.175 mm with a multitude of dimensional increments available. This range has an overall length from 38.1 to 50.8 mm with a cutting length from 1.97 to 7.93 mm with the choice of 4 or 6 Guhrojet peripheral through coolant channels available. To enhance tool life further, the end mills incorporate a 45-degree corner chamfer to prevent edge chipping when machining challenging materials. This micro-fine corner chamfer ranges from 0.016 mm to 0.64 mm depending upon the tool diameter selected.

For the machining of pockets and slots up to 5XD, manufacturers can be selected in exciting new RF100 Micro Diver 6809 Series. Like the shorter length variant, the 6809



Series offers the choice of four or six Guhrojet peripheral through coolant channels, a H5 4 or 6 mm shank diameter and a 45-degree corner chamfer to prevent edge chipping. In comparison to the shorter 6808 variant, the 6809 offers an overall tool length from 45 to 57.15mm with a 5.00 to 15.87 mm cutting length.

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Cruising to cycle time savings with ITC

For over 25 years, a niche Merseyside manufacturer has been producing stainless steel service solutions for everything from hotels, restaurants and retail outlets to banks, corporate dining facilities and even offshore vessels.

As a member of the Catering Equipment Suppliers Association (CESA) with ISO: 18001, ISO: 9001 and ISO: 14001 certifications, the prestige of the manufacturer is beyond reproach. As a full-service supplier, the catering manufacturer service includes a complete site survey, CAD & design services, project management, consultation, production and CE marking through to installation and training.

Within its manufacturing and fabrication department, the North West Company is always looking for efficiency and productivity gains. So, when the company won a project to manufacture stainless steel units for cruise ship galleys, it turned to Industrial Tooling Corporation (ITC) and its innovative cutting tool solutions to instigate productivity improvements.

The galley units produced, all required stainless steel fittings that are used to mount doors. All manufactured on-site, the process before the introduction of ITC cutting tools was to face the 316 stainless steel blocks with a face mill and then profile with a 90-degree indexable cutter and then finish with a solid carbide end mill. The proposal by ITC's Gary Murrey was to apply the Widia

VSM890 Shell Mill to face and profile with a single tool to standardise the process to a single tool rather than three. Gary was also confident that the ITC speeds and feeds would be faster than the existing data of 350 rpm and 250 mm feed and speed for facing and the 1,400 rpm and 300 mm feed for profiling.

Discussing the transition to the VSM890, ITC's Gary Murrey says: "The first time we ran the VSM890, we knew we wanted to double the feed that was previously running, so we could halve the cycle time. On the profiling operation, this equated to running at near 0.11 mm/tooth at 1,082 rpm with a 600 mm feed rate and a 4 mm depth of cut. For the facing operation, we ran at 170m/min with a 430 mm feed, 0.08 mm/tooth, with a cutting depth of 0.3 mm. Whilst we could have run at faster feed rates and deeper cutting depths, we wanted to retain the best possible tool life to minimise downtime on the machine that would be necessary with insert tip changes.

"The outcome of the trial was that we reduced the milling cycle time from seven minutes 30 seconds to three minutes 18 seconds and we standardised the tooling for this job. In addition to cycle time and tool inventory reductions, we also offered an impressive cost saving, reducing the 'cost per edge' from £2.40 to £1.50."

The benefits of this initial trial led to a further opportunity whereby a standard four flute milling cutter clamped in an ER32

collet, was taking over 20 minutes to machine a 316 stainless profile to a depth of 44 mm.

The machine operator had tried on various occasions to speed up the process with the current tool, but this resulted in a detrimental impact on tool life. The experienced machinist was fully aware that higher-quality cutting tools were available, but as is often the case, cost justification can be difficult to impress upon business owners without an 'iron clad' case for improvement. ITC's Gary Murrey spoke to the management and demonstrated the potential benefits via a YouTube video that he had filmed at another machine shop cutting the same material with ITC's 5021 Series end mills.

His stock was already held in high regard with this end-user after the ITC engineer had previously slashed cycle times on the previous part by 50 percent with the Widia VSM890 milling range. This was reinforced by him explaining the difference between a standard flute end mill and a high performance tool and then discussing the difference between using standard ER32 collet chucks against a BIG KAISER HMC chuck. Explaining how the run-out on the tool would impact machining performance and tool life, it was soon agreed that a trial was the next step. Considering the 44 mm depth needed, Gary Murrey specified ITC's 5041 Series with a 48 mm reach and 18 mm flute length.

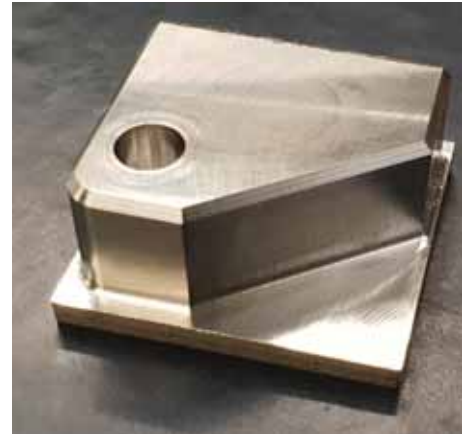


Installing a 12 mm diameter 5041 Series end mill with a 0.25 mm radius and a BIG KAISER HMC chuck with a C20-12 Collet on a Bridgeport VMC 1000 with a BT40 spindle configuration, the results were impressive.

Commenting upon the process, Gary Murrey says: "I started using the 5041 Series at 80 to 120 m/min and 0.060 mm/tooth feed. I then went straight in at the top end on surface speed, which was 3,180 rpm and 1,000 mm/min on the specific machine. With the part being 44 mm deep, we programmed an axial cut depth of 11 mm that took four passes to achieve full depth. As far as the radial cut was concerned, the

starting data was 0.025XD which equated to 0.3 mm. Intending to push the cutter harder, I programmed the radial cutting depth at 0.7 mm. This yielded a huge improvement on the current data, which was 850 rpm, 200 mm feed with a 4 mm axial cut an 0.3 mm radial cut."

"The outcome was that we reduced the milling cycle time from over 20 minutes to just three minutes 30 seconds, this is a staggering improvement. The overall cycle time per component has now dropped from 26 minutes to just under 10 minutes. Besides, the cutting action sounded great, the surface finish was ideal for aesthetically



pleasing parts that would be polished as a final operation and the tool life was improved in comparison to the previous tool. The customer is extremely pleased with the outcome and we will continue to investigate additional opportunities to reduce cycle times and costs," concludes Gary Murrey.

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New packaging solutions from rose plastic

As part of its sustainability commitment, rose plastic now offers a range of packaging solutions manufactured from sugar cane and Post-Consumer Recycled (PCR). The environmentally conscious packaging specialist can now offer an economical option that is recyclable and available with an unfathomable range of options to contain, protect and secure your sensors, instruments and other components.

The Bio HDPE blow-moulded packaging is 96 percent manufactured from bio-based content and is fully recyclable to meet the demands of environmentally conscious businesses. The PCR is 100 percent manufactured from recycled plastic items from both household and commercial waste. It is passed through various processes before being used to produce new packaging.

Even the supply chain of environmentally friendly manufacturers comply with socially responsible production methods. So, if you are looking for the most environmentally sustainable packaging for your cutting tools, rose plastic has a complete range of Bio-HDPE and PCR products that guarantee

a secure, protective, resilient and re-usable option for your business.

Samples and further info are available on request.

rose plastic UK serves corporate customers throughout United Kingdom and Ireland. The company is located in Rotherham, South Yorkshire, bordering the Steel City of Sheffield the birthplace of Stainless Steel. Its packaging experts will work with you to ensure they provide the optimal packing solution to suit your products.

With a comprehensive product portfolio, it sells plastic packaging for a wide variety of applications: In particular, manufacturers of cutting tools, industrial components and medical packaging as well as suppliers of DIY stores, the tool trade and manufacturers of consumer products count on the company's decades of experience in the development and manufacturing of packaging solutions. It attaches great importance to a close, trustworthy cooperation and long-term working partnerships.

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100 percent satisfied. Its packaging experts will advise you in detail and work with you to develop packaging solutions that are precisely tailored to your products. You have the choice between packaging from the standard portfolio of around 4,000 standard products. Alternatively, you can opt for a customised packaging solution that is designed, developed and produced especially for you, perfectly tailored to your product. Benefit from decades of experience and expertise in the manufacture of plastic packaging.

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Hainbuch gets a grip on Irish market

The Irish Manufacturing Research (IMR) facility in Rathcoole has recently installed a new Doosan Puma 2600SY II turning centre with workholding technology from Hainbuch at the heart of the new installation.

IMR on the outskirts of Dublin was established in 2014, borne out of an industry-led initiative that was initially formed in 2010 to pilot a new research model in Ireland. Developed as an independent applied-research centre to act as a conduit between academia and industry, the organisation is a leading manufacturing Research & Technology Organisation (RTO) with labs and industrial pilot lines in Dublin and Mullingar. IMR works with leading global and indigenous brands to 'demystify and de-risk' new and emerging technologies to deliver high impact collaborative research.

With additive technology from Carbon 3D, EOS and Renishaw alongside automation from Kuka and Universal Robotics as well as machine tools from Hermle and now the Doosan machine from Mills CNC, the IMR is certainly at the forefront of technology. The new Doosan Puma 2600SY II is a 10-inch chuck multi-tasking lathe with Hainbuch collet chucks specified on both the main and sub-spindle. To optimise productivity, flexibility and ease-of-use for the Irish research centre, Mills CNC supplied the machine with a Hydrafeed servo-driven bar feeder, Filtermist extraction, Renishaw optical workpiece inspection probe, an LNS swarf conveyor system and also an FSE



filtration system. However, it is the Hainbuch collet chucks that are really taking flexibility to a new level for users of this new installation.

Working in collaboration with Mills CNC, Hainbuch installed its SPANNTOP mini quick-change dead-length chucks on both spindles of the Doosan machine with an 80 mm chuck on the main spindle and a 52 mm system on the sub-spindle. The SPANNTOP mini incorporates a chuck with a dismountable end-stop plate that ensures precision workpiece clamping without the pull-back effect. The SPANNTOP mini permits the quick change-over from outside to inside diameter clamping or 3-jaw clamping through the remarkable flexibility of the modular system. When asked about the Hainbuch system, IMR's machining

applications specialist Chris Judge said: "To be able to demonstrate the full technical capability of the Doosan Puma you need to be using the best workholding and tooling systems available so we were delighted to see Hainbuch system selected."

The SPANNTOP mini is the perfect partner for turning centres with its innovative design that significantly reduces interference contours and improves tool accessibility which is ideal for limited space work envelopes. With a compact design and a lower mass than alternate systems, the SPANNTOP mini minimises inertia loss when compared to 3-jaw chucks. The dead-length variant installed on the Puma machine converts to a fully functional 'bar chuck' when the end-stop plate is removed. Providing workpiece clamping without axial movement of the clamping head, the SPANNTOP mini clamps workpieces with a short collar or shoulder, even providing part pick-off without the pull-back effect which is ideal for this twin-spindle turning centre.

Hainbuch UK supplied the SPANNTOP mini complete with machine adaptations, changing guns and a complement of 10 clamping heads on each spindle for holding a complete variety of components.

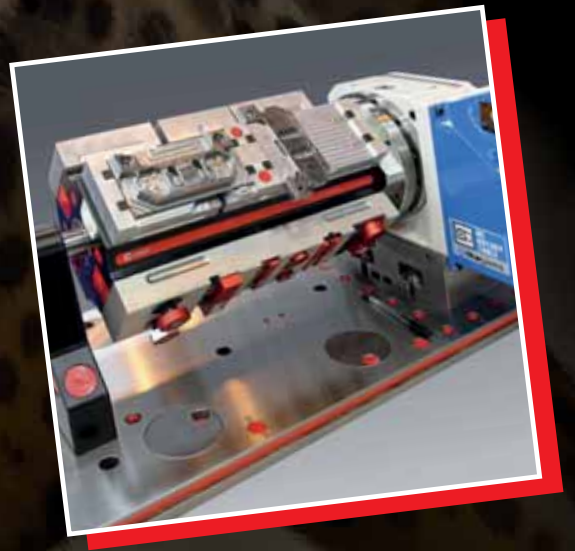
Commenting upon the installation, Hainbuch UK managing director, Nick Peter says: "We work closely with Mills CNC as well as most machine tool vendors, our close relationships ensure we provide the exact solution for the needs of the end-user. With regard to the installation of the SPANNTOP mini on the Doosan Puma 2600SY II at IMR, we have installed a solution that provides an unparalleled level of clamping flexibility with secure high-clamping forces for machining any component or material that is put on the machine. The SPANNTOP mini is perfect for the medical industry and we are hoping that having this system at a leading research centre will showcase our system in Ireland to the continually expanding medical market. We already have a substantial level of enquires for 'add-on' mandrels for the chucks to do specific research jobs."

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Reliable control of vibrations and dimensional accuracy

Mannstaedt is a market leader in the manufacture of hot-rolled special profiles. When it started looking for a high-quality clamping device for heavy-duty cutting, it turned to the German gripping and clamping technology specialist, Röhme.

Mannstaedt GmbH in Troisdorf, Germany, is among the leading manufacturers worldwide of hot-rolled special profiles made of steel, individually formed steel rods which are used in a multitude of industrial sectors. The company was founded in 1825 and its core competences include heavy-duty profiles with tight tolerance limits and improved surfaces compared to standard profiles. The wide-ranging portfolio includes special profiles for the automobile industry, commercial vehicles, for industrial trucks, lift mast profiles, fork carriages, sideshifter profiles, warehouse and conveying technology, the building industry, agricultural machines, ship-building, railway technology and many other sectors. The support often does not end with the delivery of the customised component. Rather, the experts work together with the customer on constantly improving their products and processes. The company is part of the GMH Group, Georgsmarienhütte Holding GmbH, a specialist in steel production and processing, steering and forging technology, as well as in the cast parts area.



Customised solutions

"As a special profile manufacturer, we are able to produce customised products on our two rolling lines and also to further custom-process these as our customers demand such solutions more and more," says Björn Wieschendorf, operations manager for processing. These offers include processes such as cold drawing, sawing to size, welding, blasting or milling. For the last mentioned production method, milling machines from various suppliers are used, whereby the high demands with

regard to vibrations and dimensional accuracy have not always been met.

For this reason, the process engineers looked around for a long-term, sustainable solution. Multiple suppliers were examined and the decision ultimately was made for Röhme. "A machine tool manufacturer got us in touch," adds Björn Wieschendorf. "Röhme was ultimately selected because of the product itself. Many other manufacturers could not provide us with the right solution here."

Furthermore, the accompanying service support, including the provision of documentation, drawings, 3D models, operating manual, maintenance plans, training by factory certified technicians, as well as the performance guarantee were convincing.

Thorsten Nolte played a major part in finding the suitable clamping device: "We are able to develop solutions for our customers and to optimise processes accordingly," says the technical sales consultant for Röhme in Nordrhein-Westfalen, Germany. "In addition to our extensive standard product range, from products used in clamping the smallest parts for clock manufacturing to the largest used in wind power systems, customised developments make up about 40 percent of our business. In this case, the right solution was found with the high-pressure clamp



HZS-798x180 in a special design, including an integrated measurement system. The active draw-down is controllable, we achieve up to 60 kN per clamping jaw and the positions of the jaws can be queried accordingly."

Reliable processes

For about three years, duplicate high-pressure clamps have been used on one machine with workspace about one metre in length. "With this, we now reliably control the vibrations and also achieve the high dimensional accuracy that we want," confirms Björn Wieschendorf. Due to their excellent experience, Röhm was also first choice again as clamping device supplier when an older system was replaced with a milling machine from Matec out of Köngen in 2018/2019. This has over three metres of work space, is suitable for automated processes and is equipped with a total of four HZS-798x180 clamping devices due to the larger space. For heavy workpieces, the machine can be loaded via a crane from above; a lateral feed is also possible for automated processes, for example. After loading and aligning the workpiece, the

robust milling process starts, often accompanied by the drilling and thread cutting of the stable steel profile. After cutting and stress relief, the workpiece is measured, then packaged, warehoused or shipped directly.

Success based on partnership

Between the first contact query to final delivery, it took about six months. Project managers Nils Solscheid and Björn Wieschendorf from Mannstaedt realised the implementation in close cooperation with Thorsten Nolte and Norbert Tiede, project manager from Matec. The main motivation of the West German manufacturing specialist from Troisdorf was automating the cutting of the finished steel profiles for lift masts of industrial trucks and, at the same time, to increase the production capacity. The main advantages of the clamping technology solution used now as compared to the previous product are better repeatability, higher clamping forces, as well as higher rigidity within the clamp. "The previous clamping technology supplier did not provide what he was supposed to. With the new clamping technology solution, we

have the challenges with the vibrations and dimensional accuracy under control," explains Björn Wieschendorf. "Röhm also kept coming up with suggestions for improving the process." Currently, discussions are underway for replacing a manual clamping technology solution with an automated system.

Strong and precise

The HZS-798x180 clamping devices that were utilised clamp centrally and achieve a precision of 0.03 mm. The active draw-down of the workpieces is controllable up to a hydraulic actuation pressure of 150 bar. The approx. 170 kg clamps for precision and raw part clamping can be moved on the machine and are suitable for workpiece automation. Due to the high product quality, there are fewer vibrations, higher dimensional accuracy and, as a result, less tool wear, as well as higher productivity, thanks to the higher feed rates that can be realised.

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ZeroClamp pneumatic centring clamping fixture 160

Alongside its automation systems for machine tools, available from workholding, productivity improvement and manufacturing efficiency specialist Leader Chuck International, ZERO CLAMP also offers a new, matching clamping device for handling component blanks and raw billet material.

The pneumatic centring clamping fixture 160 offers powerful, infinitely variable clamping with forces of up to 45 kN at a maximum of 9 bar of compressed air. The compressed air supply is connected to the underside of the clamp. The centring clamping fixture is controlled using the four-channel clamping pots of the

company's advanced zero-point clamping system. Alternatively, the airports on the side can also be used for this task.

What makes the centring clamping fixture unique is the system's low pretension of 60 kg, which 'lightly' holds loaded material preventing the loss of clamped components when working with shuttle tables, for example, moving in and out of the machining envelope.

In addition to this, the generous clamping jaw stroke of 8.5 mm can be infinitely 'fine-tuned' with adjustment slots in the top of each jaw allowing a range of +/- 5 mm each side via the eight Allen head bolts that securely fix the top jaws to the vice. This

increases the service life of the jaws as they can be accurately adjusted to compensate for any wear as well as for any deviation in the size of the raw material, such as castings being undersized.

The extensive range of jaw attachments, including grip jaws, carbide-coated jaws, profiled jaws or prism jaws to suit the workpiece, allows the centring clamping fixture to achieve clamping widths of 10 to 130 mm, making it suitable for a huge variety of applications.

Mark Jones, managing director of Leader Chuck, says: "For many engineering workshops the highly effective solutions available from ZERO CLAMP make it a one-stop shop for everything; from zero-point clamping systems and modular clamping rail systems to perhaps the most flexible, modular automation on the market. Everything a manufacturing business needs, from a single source."

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New mobile 3D scanning system with optical tracking

The ZEISS T-SCAN system consists of perfectly matched components which help users to obtain highly precise 3D data in a very easy and intuitive way, even in the most hard-to-reach areas. Combined with the pre-installed GOM Inspect Suite software, the lightweight and hand-held T-SCAN laser scanner, the T-TRACK optical tracking system and the T-POINT touch probe deliver measurement results for a wide range of applications.

With its mobile and modular concept, the ZEISS T-SCAN laser scanning system offers maximum flexibility for inspecting parts and tools directly on the shop floor. Featuring a measuring volume of 10 m³, the all-new ZEISS T-TRACK 10 can now be combined with the T-SCAN to digitise smaller parts with high accuracy.

3D data acquisition for analyses, measuring processes and creating full digital twins is easy and intuitive with T-SCAN. The system is equipped with the pre-installed GOM Inspect Suite, which is an established standard in many industries and supports all inspection tasks from scanning through to inspecting and reporting.

Mobile system with modular concept

In combination with the ZEISS T-TRACK optical tracking system, T-SCAN measures in any dimension. Users can choose between two versions of T-TRACK. The new T-TRACK 10, for smaller measuring volumes of 10 m³ and higher accuracy, or the established T-TRACK 20 for large measuring volumes of up to 20 m³. In just one setup, T-TRACK 10 can measure parts of up to 2.5 m in length while the T TRACK 20 can up to 4 m in length. The traceable accuracy guarantees reproducible and reliable measuring results. The T-POINT hand-held touch probe is ideally suited to perform single-point measurements on object surface areas such as edges and standard geometries or optically hard-to-reach areas. T-SCAN can



capture 3D data even on vibrating or moving objects.

Extension of measuring volume

If a part is too large for the T-TRACK or its geometry blocks the line of sight, Spherical Mounted Targets (T-SCAN SMTs) ensure the precision of the captured data. The SMTs can be easily mounted on the measured object and allow for extended measuring volumes.

Wide range of applications

Shop floor inspections are not the only thing now easier with T-SCAN; the measuring system supports all quality control and inspection areas. Thanks to T-SCAN, users benefit from precise 3D data and easy inspections from product development and design through to tool and mould making.

Many inspection features for free

With its all-in-one GOM Inspect software, 3D metrology specialist GOM has become a standard in many industries. GOM's new software platform GOM Inspect Suite embraces and facilitates the complete workflow from scanning to reporting for maximum ease-of-use. GOM Inspect Suite offers a host of inspection features and is available for free after registration. The full version of GOM Inspect Suite provides the full extent of data analysis and template capabilities. Users can download a free 30-day trial version to test out the software and its professional features.

HandsOnMetrology.com is the new go-to for everything you want to know about 3D scanning. The digital platform is operated by GOM, a ZEISS company, setting standards in optical 3D metrology. From step-by-step setup instructions to more advanced tutorials and expert hacks, the platform is made for learning and for getting inspired. Users find the support they need to deliver 3D scanning excellence. HandsOnMetrology.com offers valuable know-how to the community of designers, technicians, engineers, scientists and specialists to increase product quality, optimise processes and expand possibilities.

GOM, a company of the ZEISS Group, specialises in industrial 3D coordinate measuring technology, 3D computed tomography and 3D testing. From product development to production and worldwide distribution, GOM offers machines and systems for manual and automated 3D digitising, evaluation software, training and professional support from a single source. In industries such as automotive, aerospace, energy and consumer goods, more than 17,000 GOM system installations are in use internationally. At more than 60 locations and with more than 1,200 metrology specialists, GOM guarantees profound advice and first-class service.

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To discover more about the effective and reliable evaluation of gears visit www.mitutoyo.co.uk/gears or scan the code below:



Muffett 'gears-up' for precision

Muffett Gears can trace its origins back over 100 years. Remaining in Tunbridge Wells, Kent, the town it was established in, the business has grown into what is now a world-class manufacturer of precision gears and related components. The company is now based in a 3,500 sq m high-tech production facility that, due to a policy of continued investment, is equipped with a range of state-of-the-art CNC turning, grinding, milling and specialist gear cutting machine tools.

In addition to continually updating its advanced manufacturing plant, given the demanding nature of the business' large domestic and overseas customer base, the management of Muffett Gears makes regular investments in cutting-edge quality control equipment. The company's most recent addition to its quality department is an advanced Crysta-Apex S9106 CNC Coordinate Measuring Machine (CMM) purchased from Mitutoyo UK.

Explaining forthcoming company changes and the reasons for the recent CMM purchase, Muffett Gears director, Mark Jagelman says: "Our business continues to grow and to develop new markets and we now supply customers, not only with precision gears and gearboxes, but also with a much wider range of engineering services, including electro/mechanical assemblies. As a result of our continuing company development, to more accurately reflect our



much expanded range of activities, in 2021 we will change our trading name to Muffett Engineering Solutions.

"We hold a range of globally recognised accreditations and we administer a comprehensive quality management system. Our skilled staff adhere to the specified levels of precision demanded by our customers and follow all stipulated procedures. As we increasingly manufacture for export, we can also adapt our precision gear engineering to meet international standards.

"The production of precision gears and associated components requires exceptional levels of precision to be applied and the most exacting quality standards to be observed throughout all stages of production and assembly. To ensure that we abide by the highest quality standards our staff perform exhaustive in-process checks then, prior to dispatch, thorough final inspection routines are undertaken. Many of these inspection routines are performed on a CMM, although, we recently decided to replace our existing CMM for a range of reasons. For instance, the machine needed an upgrade that was due to cost approximately £50,000. In addition, we thought that our old CMM's running costs,

including training, services and calibration were becoming exorbitant."

He continues: "After investigating various CMM brands and models, a successful demonstration of a Crysta-Apex S9106 CNC CMM at Mitutoyo UK's showroom convinced us that this high-specification machine was ideal for our needs. In addition to providing the levels of precision that we were looking for it also had the speed of operation that could keep-pace with the high volumes of work passing through our busy quality control department. It also helped that the Crysta-Apex S9106 has a X, Y, Z measuring volume of 900 mm, 1,000 mm, 600 mm, ideal for the size of components and assemblies that we manufacture. In addition to measuring large, one-off parts, because of the CMMs generous capacity, it is also able to inspect multiple smaller components in automated CNC, mass-measurement routines.

"When making key equipment purchases, in addition to studying the features of the equipment we are considering, we always take into account the levels of after-sales support provided by each potential vendor. Therefore, it helped our decision that, in addition to extolling the virtues of the company's own Mitutoyo CMM, a major

customer of ours, spoke highly of the services provided by Mitutoyo.

“Our customer’s endorsement has proven correct. We enjoyed a trouble-free CMM installation and our quality control personnel have received first-class training from Mitutoyo UK. Mitutoyo’s staff also generated a number of part programs that enable our new CMM to be put into immediate use. As our Mitutoyo CMM has proven so easy to use, our staff soon became proficient in its use, although, on the rare occasion they need help, Mitutoyo’s telephone technical support staff are always on-hand to provide a quick solution.

“Our new Mitutoyo CMM’s ability to accurately and rapidly inspect a large batch of components has further improved our quality control department’s efficiency levels. Our inspection staff are now able to load the CMMs bed with multiple components, quickly recall the relevant part program and instigate a fully automated inspection procedure. On completion, a detailed inspection report related to each component can then be generated.

Mark Jagelman adds: “In addition to the Crysta-Apex S9106 CMM accuracy specification making a significant

contribution towards guaranteeing the continued quality of Muffett Gears output, its speed of operation is now ensuring the efficient throughput of work in our quality department. The speed of operation of our new CMM will become ever more important. In the run-up to Brexit we have already benefited from business’ reshoring their work and we expect to soon receive further contracts to undertake work that was previously undertaken overseas.”

The advanced CRYSTA-Apex S9160 CNC CMM, as purchased by Muffett Gears, was designed and constructed using Mitutoyo’s unmatched experience in CNC CMM technology. Featuring lightweight materials, the high-accuracy machine benefits from a cutting-edge machine structure that delivers a range of advantages, including outstanding motion stability and impressive levels of precision, in addition to rapid acceleration and speed of operation. Besides being ideal for use in temperature-controlled inspection departments, the CMM’s innovative temperature correction function allows it to perform accurate measuring routines in less than perfect situation, such as within production environments. As well as



point-to-point measurement, Crysta-Apex S series CMMs are able to perform both contact and non-contact scanning functions. CRYSTA-Apex S CNC CMMs use MCOSMOS, a feature rich, easy to use analysis software that interprets measurement results in the timely manner so essential for keeping up with today’s fast-paced production.

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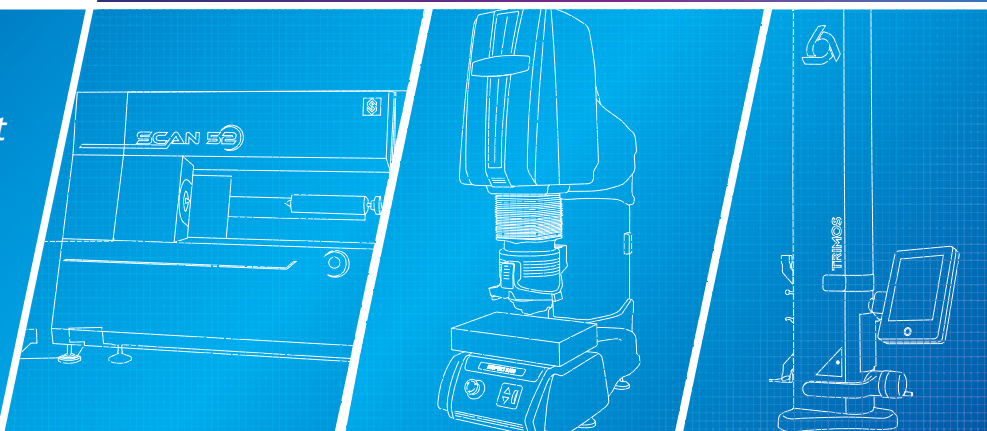
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The Bowers Group of Companies

New high-speed video measuring system for quality control

To measure components reliably and efficiently, whether in an inspection room or on the shop floor, Nikon Corporation in Japan has developed a new CNC video measuring system that provides unparalleled accuracy, repeatability and reliability. Also known as an optical coordinate measuring machine, the NEXIV VMZ-S3020 is perfect for automated quality control applications in a production line, as its high speed allows real-time feedback of measured results to optimise a manufacturing process.

The system is ideal for inspecting a wide variety of mechanical, electrical, electronic, moulded, cast and pressed components that fall within its 300 x 200 x 200 mm working volume. Nikon's proprietary optical measuring, image processing and analysis technologies are employed to detect feature edges at very high speed, capturing accurately and automatically the shape and dimensions of even the most complex components.

Numerous enhancements to the robustness of the unit and its functionality have been made compared with the instrument that it replaces, model VMZ-R3020. The new NEXIV VMZ-S series can achieve even faster movements and image capture steps by the dedicated CMOS camera than its predecessor. In-house-developed, high-resolution, linear encoders feed the position of the stage axes back to the control, maintaining the highest measuring precision and consistency. Image

transfer and subsequent processing of the data are also quicker and has made it possible to reduce measurement cycle times to achieve higher throughput, without compromising accuracy or reproducibility.

Nikon has designed top-quality optical systems using its own exceptional "glassware" to deliver the highest quality images and so realise ever more accurate measurement data within the field of view and beyond. Enhancements to the through-the-lens (TTL) laser auto focus, giving repeatability to better than half a micron, have strengthened trust in the system's ability to measure profiles and transparent components with the highest performance.

Fast laser scanning at 1,000 points/sec can rapidly acquire the cross-sectional shape of a surface and evaluate the relative heights, meeting the measurement needs across a wide variety of samples. Indicating the attention to detail that has been bestowed on the new instrument, even the joystick unit that moves the stage and measurement head has been redesigned to be even easier to use.

A fully featured measurement software environment, NEXIV AutoMeasure, enables high precision, high speed, easy measurement cycles using tools that are close to hand in a user-friendly GUI. For



components of simple shape, it has been enhanced with support functions that automate part of the measurement programming processes.

Larger NEXIV versions, VMZ-S4540 with X, Y, Z strokes of 450 x 400 x 200 and the VMZ-S6555 with strokes of 650 x 550 x 200 mm, are scheduled to be released in 2021 to provide the same benefits when measuring larger components.

For over 100 years, Nikon has pursued the possibilities of light. Since its founding in 1917, it has harnessed the power of lenses to contribute to the advancement of imaging culture and sciences, as well as the development of industry, creating breakthrough technologies and products in the process.

Today, Nikon is a world-renowned brand, firmly established as a leader in optical instrumentation and the only microscope company to manufacture its own glass, ensuring the very finest quality assurance throughout production. With 100 years expertise in the field, Nikon has always been at the forefront of optical and technological innovation, promoting creativity and trustworthiness as part of the company's global mission statement.



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Bowers Group introduces Innovatest HAWK hardness testers

Bowers Group has announced the launch of the Innovatest HAWK Series of Rockwell Machine hardness testers in the UK. With the addition of the nose-mounted indenter, the HAWK series can test internal diameters as small as 22 mm within a wide range of parts with hard-to-reach test spots including pipes, U-shaped parts, nuts, bolts, gear box parts and cardan shafts.

The HAWK's protruding nose allows force to be applied from directly above the indenter, negating a 'trenching effect' which is often caused by the indenter being dragged through the sample in machines where the load is applied by a lever arm.

Bowers Group sales director, Martin Hawkins, says: "With the addition of the new nose-mounted load cell, this exciting new range provides users with an 'internal' testing capacity that can reach as far as 165 mm inside a bore, as well as providing measurement on flat surfaces offered by other Rockwell machines, providing an ideal solution for all hardness testing. We're pleased to be able to offer this great range of machines to the UK market and we look forward to the interest that we are certain the HAWK series will bring."

Within the range, the HAWK 250RS delivers the latest technology on internal Rockwell Hardness testing, and provides Brinell testing, as well as optional Vickers and Knoop impressions. The HAWK 400RS is a taller version of the 250RS with an optional clamp that fixes workpieces, with the 400RS-IMP offering the ability to be fitted with an optional automatic spindle, allowing the full process of lifting, clamping and testing to take place without operator interference.

The HAWK 651RS is supplied with a large 425 x370 mm testing table with a hardened test area inlay that also gives space to mount all kinds of anvils. The most technologically advanced model in the group of HAWK testers, the 652RS-IMP, is unique in its offering with a double Z-axis system, allowing for a 650 mm working height as well as different test positions for special-shaped samples. The second adjustable position can support a wide range of different and specialised anvils, or tables to support test pieces from the inside, outside, top or the bottom. The nose provides a throat depth of



200 mm on the 250RS and 400RS-IMP models.

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HBK introduces configurable piezoelectric force measurement chain

HBK has created new CMC piezoelectric force measurement chains which can be freely configured in more than 200 combinations, making them ideal for a range of industrial measuring tasks, such as joining, forming or assembly processes.

Users can select a sensor that matches their required measuring force, potential initial load, and desired overload range. The selection of the amplifier depends exclusively on the force to be measured, which enables a high output signal and good resolution.

Each measurement chain comprises of a sensor, a charge cable, a charge amplifier and the associated test protocol that documents the relationship between the force in Newtons and the output signal in volts. To improve user accuracy, HBK also specifies the calibration results for multiple force ranges.

Charge cables in different lengths are available to allow for easy integration. CMC force measurement chains are suitable for rapid measurements and force-displacement monitoring, as the

sensor's deflection does not affect the displacement measurement. Plus, all HBK's measurement chains meet the required IP65 degree of protection.

A switching input allows for zero-balancing of the charge amplifiers and a magnifying function can be activated to ramp up the amplifier's sensitivity.

Sensors with nominal forces ranging from 5 kN to 120 kN are available. The charge amplifiers have input ranges between 1,000 pC and 482,000 pC, with the resulting nominal measurement ranges varying from 125 N to 120 kN.

More information about the company's CMC piezoelectric force measurement chains is available on its website:

<https://www.hbm.com/en/2527/paceli-ne-cmc-easy-to-use-piezoelectric-measurement-chain/>

HBK and Brüel & Kjær have joined forces as HBK - Hottinger, Brüel & Kjaer to form the world's foremost provider of integrated test, measurement, control and simulation solutions.

HBK - Hottinger, Brüel & Kjaer provides a



complete portfolio of solutions across the test and measurement product life cycle, that unites the physical world of sensors, testing and measurement with the digital world of simulation, modelling software and analysis. By creating a scalable and open data acquisition hardware, software and simulation ecosystem, product developers can cut time-to-market, drive innovation and take the lead in a highly competitive global marketplace.

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Subcontractor hits landmark turnover with help from OPEN MIND

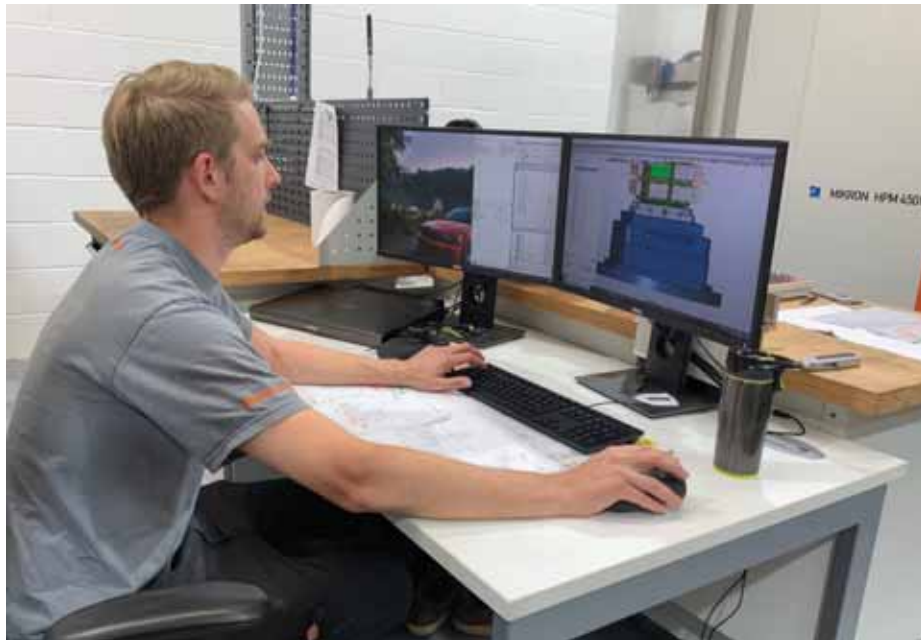
Buying its very first machine in December 2016, Multax Engineered Precision Ltd has already hit the turnover landmark of £3m. This growth is a credit to a core philosophy of automated production, reduced man-hours and, of course, investment in industry-leading technology.

Like any small business start-up, nothing would have been possible without the dedication and sheer determination shown by company founders John McNab and Ashley Mizen, two ex-work colleagues that were working around the clock in their respective posts while setting up the new business. To achieve their automated production eutopia, the first machine installation was a 10-pallet 5-axis Mikron HSM600U that was supported with a Widia cutting tool voucher promotion scheme from Industrial Tooling Corporation (ITC) and CAM software from OPEN MIND Technologies.

The Andover Company now has 17 staff and has invested close to £3m on 10 machine tools and supporting equipment since its inception. This investment level has been acknowledged with the company winning accolades such as Test Valley 'Business of the Year' with industry recognition coming from the Mercedes F1 Team that named Multax 'Metallics Supplier of the Year.' This is a credit to the ability of Multax to manufacture anything from simple to complex components with unparalleled quality levels. The company is taking this expertise that has been widely recognised in F1 circles and expanding into other sectors. Multax is actively taking on new customers in all industry sectors. The Ventilator Challenge for the COVID-19 pandemic is a prime example of how this fast-paced business can support customers in all sectors.

Discussing the automation journey and its subsequent success, director Ashley Mizen says: "Five of our six 5-axis machines are automated and we try to maximise our automation as much as possible. We have skeleton staff working overnight and we offer night-shift programming, so we can deliver jobs 'next-day' if we need to."

Taking a closer look at why this rapidly growing automotive, motorsport,



aerospace, medical and scientific subcontract manufacturing business places such glowing plaudits upon hyperMILL®, Ashley Mizen continues: "I was an OPEN MIND user before we decided to start the business. It is a 'game-changer' for our business and we now have seven seats of hyperMILL. We have integrated machine models and from my extensive use of various CAM systems, it is so simple to train a non-CAM user, we now have our setters and operators using hyperMILL as a setting and programming tool. It allows staff to check the datum of the part, produce the tooling sheet, put the NC code into the machine and also run the verification software to prevent collisions."

"Our team will always use hyperMILL for everything from the simplest of parts to the most complex. From a business stance, it's great to have the simplest parts programmed with hyperMILL as this means we have the programs stored on our central server. If we get a repeat order, we can revisit the programme, see what tools we have used and how the part is clamped, this gets us up and running quickly. hyperMILL has been a revelation to our business and we definitely wouldn't be where we are today without it."

When asked how hyperMILL is aiding Multax on the shop floor, Ashley Mizen



states: "We are a medium to high complex component supplier and the strategies we use means that we use a lot of ball nose tools for 5-axis cutting. With hyperMILL, many of these strategies can be created in seconds. We also have a lot of like-for-like components come through our facility and we can overlay the models and use them as templates. This makes programming and setups efficient to get up and running."

The Hampshire company is also adopting the ground-breaking Virtual Machine platform from OPEN MIND. Alluding to this, Ashley Mizen continues: "From my understanding, hyperMILL will now replicate the machine control, so it runs the NC programme rather than using POF files. It

also provides fully integrated models in the simulation package. We have also invested in the hyperMILL Optimisation Package. This looks at the tool paths generated by the software and creates optimisations. For example, hyperMILL has historically moved the cutting tool to a 'home' or 'safe' position while the machine table is indexing; to optimise that position, the 'Optimiser' will just move the tool to a clearance height and then bring the tool back to the workpiece, reducing movements and non-cutting times. hyperMILL has always been able to do this, but previously it was a lot of effort to get there."

The catalyst for investing in Virtual Machine and the Optimiser software was the COVID pandemic and the 'Ventilator Challenge' work the company received. As Ashley Mizzen explains: "We are extremely proud to be involved in the ventilator project and we received an order for four different parts with an overall quantity of 31,000 that needed to be machined within eight weeks. To achieve this, we designed our own fixturing that allowed us to clamp 10 parts on each face of a tombstone. With 40 parts on each of the seven pallets, we had

280 parts in each of our 5-axis seven pallet GF Mikron machines. By developing our fixturing system and using the hyperMILL job linking feature, we reduced cycle times from nine minutes per part to just over two minutes."

Looking objectively at how hyperMILL is delivering savings for the ISO: 9001 certified company, Multax programmer Michael Pede says: "Some of the biggest gains from hyperMILL are the time savings that come in terms of it being an all-in-one package where you can do your design and manufacturing in one ecosystem. We can also use the hyperMAXX® strategies to push productivity and tool life to the maximum."

Looking at how hyperMILL helps to get the most out of the machine tool technology at Multax, he adds: "We get real benefits through the simulations we have while the



graphical illustrations of the machines allow us to get as close as we absolutely can to the table with the cutting tools."

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Procuring sheet metal parts efficiently with RADAN-based web shop

Digitised system helps Trio Metall adapt after orders drop due to COVID-19

A contract producer of sheet metal components says its web shop played a major role in helping the business compensate for a downturn in automotive and mechanical engineering orders caused by the COVID-19 pandemic.

Based at Luhe-Wildenau, in Bavaria, Trio Metall und Design GmbH provides a complete sheet metal service from consulting, designing and planning, to manufacturing 'ready-for-assembly' components, ranging from single parts and small runs, right through to large quantities. Using the latest laser technology programmed by the powerful RADAN CAD/CAM software from Hexagon Manufacturing Intelligence, it also works with non-ferrous metals such as copper, brass and titanium.

Developed around RADAN, Trio Metall's web shop portal gives customers access 24 hours a day to request components, be provided with an offer and place the order. After going live in September 2019, around 500 orders worth more than €500,000 were



placed through the 'Trionline 24' web shop in its first year.

The system was implemented by RADAN's German reseller, 3D Concepts and delivers orders digitally to Trio Metall's ERP system, which transfers them to RADAN's Ordermanager MRP module for production processing. Completed orders are passed back from MRP to ERP, triggering the subsequent processes for shipping and invoicing. This means that horizontal logistics are now digitally mapped, as well as the vertical manufacturing operations.

Thomas Menholz, from 3D Concepts, says web shops are part of an overall digital strategy involving building blocks such as

RADAN CAD/CAM, MES, MRP and ERP all coming together in an SQL-based system to form a data-driven Smart factory.

Trio's key account manager, Christian Weinberg says the web shop automates their quotation preparation, which was time consuming when carried out manually: "In the early days we noticed that larger enquiries, such as those for complete welding assemblies, were being sent directly to us via the web shop, which led to us investing in RADAN's offline quotation module, Radquote, for calculating complete assemblies. This almost halved the time taken in preparing quotes."

He explains that after logging into the web shop, customers can immediately



upload details of the parts they want manufacturing, using DXF, DWG or STEP files. Material, quantity and additional operations are added with just a few more clicks and they receive their quotes within minutes depending on the size of the job. Then they can confirm the order, with a requested due date.

Christian Weinberg adds: "The order is immediately transferred to our ERP system and activated. RADAN Ordermanager regularly extracts pending orders from the ERP and plans it into our production."

The workshop features an Amada EML-3610 NT combination machines, two Amada Ensis AJ 3015 laser cutters equipped with storage towers and a number of Amada press brakes. The parts run fully automatically from the web shop to sorting after the cutting process, without any manual intervention. Depending on their complexity, folded parts are programmed either automatically or manually. After processing, the results are fed back from MRP to ERP.

Christian Weinberg continues: "The products reaching us through the web portal vary from simple brackets and

decorative pieces, through to complete, complex machine housings and assemblies. Required quantities range from literally one-off, to several thousand. The average value of orders is around €1,200, the minimum has been €30, up to €30,000."

He says they were already well down the road of digitisation and automation before the pandemic struck, so were well equipped to react quickly: "It meant we were able to compensate for the drop in orders from the mechanical engineering and automotive sectors, by picking up work from other industries. We now have a much broader industry reach."

Christian Weinberg concludes: "Our web shop enables us to keep up with the age of digitisation and the 'Internet of Things' by offering and making our services and capacities as contractors, accessible to a global audience. It's the interface between our customers and access to our state-of-the-art machinery, around the clock, 365 days a year. We reach a number



of industry sectors, as well as a wide range of applications, via this sales channel, which we consider to be extremely important for the future. We'll continue to develop the web shop and its scope of services, as well as further digitising and automating internal processes, in order to produce parts even more cost-effectively, and stay ahead of the market."

Hexagon Manufacturing Intelligence

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Tebis for CAM automation with process template library

Tebis offers a specialist process template library for CAM automation, enabling customers to achieve reduced programming time and consistent quality. Tebis CAD/CAM automates selections of machining objects based on elements, layers, colours, names and comments as well as intelligently optimising use of cutting tools and machining parameters such as spindle speeds, feed rates, etc.

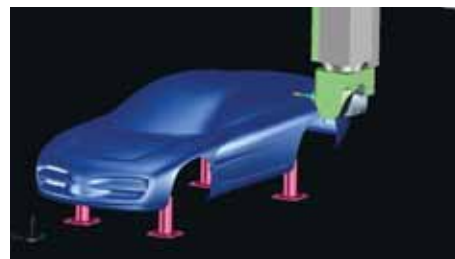
With Tebis CAD/CAM software, there are a number of ways of automating your CAM programming. One of the ways is the process template for CAM automation. Tebis software can export any kind of CNC program process and is able to reimport this process and change some basic parameters to replicate the original process but on a completely new component.

Andrew Walters, technical engineer from Tebis UK explains: "This is not a new technology, as a number of other software systems are able to do this, but Tebis is able to take this process in a much more technologically advanced way. Tebis

software is able to pre-choose the surfaces and the starting stock necessary for manufacture by the way of variable statements within the programming operations. The surface and stock selections are tied directly to a layer, although Tebis has a number of ways to predefine the surface selection such as colour or surface type."

In essence, Tebis is able to make the manufacture of this vacuum fixture as an exercise of organisation of data. If the data is on the correct layers then Tebis will machine the component correctly. This means an inexperienced engineer can produce work that is of the same standard and consistency of more experienced programmers, allowing the more experienced programmers to get on with higher complexity and higher value work such as optimising CNC manufacturing processes.

Tebis' advanced parameter selections in Tebis Templates are able to incorporate the use of feature recognition and the use of



NCsets within a machining template. This makes the template package extremely powerful and very flexible.

With Tebis templating method, any processes can be created or changed whilst the programmer is working. This means that your process is free from the rigidity that comes with templating with other software systems and the user is free to progress and develop the process continuously.

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DMG MORI puts JRM Group in pole position

Daventry, just 40 minutes from the Silverstone racetrack is the home of the JRM Group. Famed for its involvement in motorsport and automotive, the company has just invested in the first DMG MORI LASERTEC 30 SLM 2nd Generation machine in the UK which will be the cornerstone of building closer relationships with its existing customers and expansion into other sectors including aerospace and medical.

JRM already has two DMU 75 monoBLOCK and two DMU 50 3rd Generation 5-axis machining centres together with CLX 450 and AL2 turning centres and works in partnership with DMG MORI to optimise its machining performance. The experience of the productivity, service and reliability delivered by DMG MORI made the LASERTEC 30 SLM 2nd Generation the preferred solution for metal powder bed additive manufacture.

Racing the Bentley Continental GT3, JRM works with manufacturers such as Aston Martin, Jaguar Land Rover and Arctic Trucks and on projects for high performance cars from Subaru and Nissan Nismo. It is a Tier 1 supplier and has achieved wins and podiums across a variety of motorsport categories including LMP1, GT, Rally and Rallycross, as well as celebrating a championship title win in GT. Key to these achievements is the breadth and depth of skill and experience of its workforce who have a long history of motorsport experience at the highest level.

JRM specialises in problem solving for its clients, working with them to develop designs to manufacture low volume high value parts as well as concepts and prototypes. In addition to machining and fabrication, the company's skills extend to designing and building electronic equipment to monitor and report from sensors. Current projects under development include a skateboard chassis for high performance electric vehicles and a chassis rig to dynamically test vehicles for full kinematic compliance.

Investing in the LASERTEC 30 SLM 2nd Generation will enable JRM to provide far more innovative solutions for its customers. For example, multiple components can be combined into one component, parts that would be impossible or very difficult to make can be manufactured and components can be redesigned to optimise weight and strength. Many applications can

benefit from these techniques building in features such as internal voids and tubes which would normally be impossible for low volume metallic parts. Combining this capability with the know-how of JRM's engineers will make lateral thinking for new solutions realisable in a short timeframe.

The machine itself has a 300 mm cubic working volume and uses powder bed laser technology where layer thicknesses of between 20 μ and 100 μ of metal powder are fused together with a 600 W laser source. The advantage of this technology is the accuracy and quality of the finished part. JRM's LASERTEC 30 SLM 2nd Generation has three DMG MORI rePLUG cartridges. These are dedicated to titanium, aluminium and stainless steel powders. The technology enables material change to be completed within two hours with the highest work safety on the market. In addition, the machine is fitted with duo filters which alternate and enable filter changing without interrupting production. Setup and testing of the machine has been completed by DMG MORI specialists, setting all the parameters for perfect parts in the three materials chosen by JRM.

Managing director of DMG MORI UK Steve Finn says: "We are very excited to be working with JRM. It has the skills and contacts to take full advantage of the LASERTEC 30 SLM 2nd Generation's



capability for innovation and we are looking forward to being involved in some of its projects."

The investment in DMG MORI equipment is part of JRM's plan for a centre of excellence in Daventry. The three current sites that the company operates will be amalgamated in the new centre which will be considerably expanded and which will have a sustainable ethos.

Jason King, managing director of the JRM Group says: "DMG MORI technology puts us right at the front in engineering and technical capability. Our specialists have the skills to develop radical solutions and now, with the LASERTEC 30 SLM 2nd Generation, we have the tools to turn them into reality"

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123 Insight releases 123mobile v1.37.1

123 Insight Ltd has announced the release of v1.37.1 of its 123mobile iOS and Android tablet-based stores and shop floor app.

123mobile allows staff to manage stores, shop floor and labour bookings on a low-cost tablet device. This expanded functionality allows companies to significantly reduce traffic on the shop floor and allows for greater social distancing, as staff no longer need to travel to or share a PC to perform tasks.

The ability to book goods in using the app has been further enhanced. Goods can be booked in in real time as the stock is being put away. This can be performed in either 'quick' or 'advanced' modes. Quick mode allows multiple purchase orders to be booked in simultaneously, while Advanced mode provides extra functionality to allow serial numbers to be assigned and batch analysis codes to be defined.

The new release also includes a number of interface enhancements throughout the app, displaying additional information on relevant screens along with the ability to view document attachments directly from

the part enquiry screen. The partial search functionality has been extended to other areas such as batch and part number within the Stock Control module.

Numerous other features and enhancements are included, such as the ability to book in free issue parts or advice notes from subcontractors, new role-based security functions, enhancements to receiving works orders and marking stock as checked.

Managing director of 123 Insight Ltd Simon Badger comments: "We've seen a significant uptake of 123mobile this year due to COVID-19 as companies look for ways to maintain social distancing. The upside is that many are finding that 123mobile significantly improves their ability to carry out day-to-day tasks, allowing them to reduce or even remove the need for PCs on the shop floor."

123mobile is an option for the 123insight MRP/ERP system, providing a mobile alternative to the PC-based functionality provided by the core system. The app is available for immediate download from the



Apple App Store and Google Play for customers that have already been configured to run 123mobile. Full licence pricing, along with a demonstration video of the app in action, is available at 123insight.com/123mobile.

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Digital journey engineered for industry giant provides a precise solution

Precision engineering solutions firm, KMF Group has further improved its customer service for one of its longest standing and largest customers.

International provider of energy infrastructure equipment, Schneider Electric is now benefiting from a new automated system that will increase the speed and accuracy of all of its bookings.

KMF has been focusing on joining up digital systems for both order entry and job control which means Schneider Electric can now use a portal where both parties can access demand and view progress updates. A full line by line status is now transparent so the order can be completely tracked from beginning to end.

Keith Nicholl, commercial director at KMF Group says: "Sometimes customers place orders and they're very complex in terms of numbers. This new joined up approach should help reduce risks such as inputting wrong order numbers or quantities for example.

"Previously, up to 70 order logs were manually added so now we take orders

electronically using an ERP system. We develop a data migration template which electronically transfers information."

KMF has also included an ASN (Advanced Shipping Notification) making their relationships with clients truly full service. Real time shipping information summarises all of the jobs in transit on a particular day. These are booked into the customer's premises using a single QR code. It means the customer can track the orders and see what products are coming and at what time.

This new digital integration gives the customer great advantages from a speed and accuracy point of view as well as full electronic traceability from order placement to goods receipt.

Giovanni Torino from Schneider Electric says: "KMF UK has been very fast and supportive to follow the aim of Schneider Electric to increase the digital interaction with all our suppliers. After deployment of PO acknowledgement process in our web-portal called SSP, they were ready to implement Advance Shipping Notification



with our plants at Swindon. This latest functionality provides mutual benefit as goods reception process will be much more accurate and fast. Thanks again to all KMF UK team for the collaboration on this digital journey."

This new digital integration is now being rolled out to more of KMF's key customers.

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New App for remotely controlling sawing machines

KASTO extends its digital networking capabilities

In today's Industry 4.0 era, digitalisation and networking are rapidly gaining ground to make manufacturing more efficient, flexible and cost-efficient. Manually-operated islands of production are giving way to continuously controlled, intelligent material flow whereby all elements communicate with each other autonomously. Similar is happening in computer controlled storage and metal sawing, which are often the first two processes in a factory.

The use of mobile devices is also gaining ground in industrial production. With this in mind, KASTO has introduced a new application, KASTOapp, to facilitate remote visualisation of its sawing machines on a shop floor. The app displays the operational status of all networked machines equipped



KASTO has introduced a new application, KASTOapp, to facilitate remote visualisation of its sawing machines in a factory or stockholding operation

with the manufacturer's proprietary SmartControl, AdvancedControl, ProControl or ExpertControl systems.

Users can see the name, machine number and type of saw at a glance. If a machine is running in automated mode, KASTOapp can also access the information stored in the program that is running. It provides users with exact information on relevant parameters such as the item, cut length, target and actual quantities, band feed rate and cutting speed. If a fault occurs, the app displays a graphic of the relevant error

message, enabling users to quickly visualise the problem and react immediately to minimise downtimes.

Robot-assisted sawing for greater efficiency

KASTO also has a solution, KASTOsort robot link, to automate production processes upstream and downstream of the sawing process and integrate them into a uniformly-controlled material flow. Industrial robots can not only remove sawn parts independently, but may also perform additional tasks such as deburring, chamfering, centring, threading, marking, printing, sorting, stacking and picking.

This robotic solution can be further integrated with a container management or driverless transport system. Depending on the customer's requirements, KASTO can integrate the robot control into either the saw's CNC system, or its own KASTologic WMS, or an existing ERP system, enabling users to monitor and control the process with a single interface.

Industry 4.0 integration

Quality standards are rising and there is continuous pressure to cut costs. To hold their own against international competitors, UK and Irish companies need versatile and efficient solutions for a wide variety of production tasks. One solution is to ensure that all process-relevant data is recorded and analysed, enabling users to optimise their entire value chain in a decentralised, autonomous and demand-orientated manner. The route from raw material to the finished product becomes shorter, more flexible, resource-saving and less expensive.

Sawing machines, for example, can be seamlessly connected to a raw material warehouse and supplied with the required long stock or sheet materials using manipulators and conveyor technology. Software optimises processes in and around the warehouse, making intralogistics faster and more reliable and travel routes more efficient by avoiding empty runs and placing items that are needed more often closer to storage and retrieval stations. The sawing process itself runs autonomously if the machine is equipped accordingly.



KASTO also offers KASTOsort, a solution to automate production processes upstream and downstream of a saw and integrate them into the material flow

Thanks to customised interfaces ranging from SAP, Infor and Microsoft Dynamics to customer-specific software solutions, the KASTologic Warehouse Management System (WMS) can be easily connected to a higher-level host system within the company, as can individual KASTO sawing machine controls. The resulting communication structure significantly increases transparency. Users can control orders, while the data collected and recorded in the sawing machines and storage systems can be comprehensively analysed and utilised.

It enables continuous tracking of material and workpieces and uniform utilisation of sawing machines and other machine tools along the production route, shortening non-productive times, improving quality control and enhancing maintenance planning. Even remnant lengths and warehouse stocks can be sustainably optimised with relevant information, reducing production costs further.

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Hypertherm introduces extreme bevel plasma consumables

Hypertherm, manufacturer of industrial cutting systems and software, has announced the release of extreme bevel consumables for its MAXPRO200® LongLife® air and oxygen plasma cutting system.

The consumables, designed for mechanised, robotic and handheld cutting, have an aggressive pointed geometry so the plasma torch can tilt to an angle of up to 66.5 degrees. This makes the consumables ideal for a wide range of jobs including steep mechanised beveling, tube and pipe cutting, structural steel work, pressure vessel construction and handheld cutting. In addition, it makes it easier for operators to see what they are cutting and gives them better access to beam flanges and areas with limited clearance for better cuts and fewer secondary operations.

The extreme bevel consumables are available for both air and oxygen cutting at 130 and 200 amps. MAXPRO200 owners and operators can choose to purchase the consumables separately or as part of a starter kit, part 528058, that includes consumables for all the extreme bevel

cutting processes available for this system.

“The MAXPRO200 is a true workhorse for companies demanding great cut quality along with high productivity and low operating costs,” says Jorge Santana, a Hypertherm product manager. “It’s 100 percent duty cycle combined with 200 amps of power and the versatility offered by both hand and mechanised cutting make it an enormously popular system. The addition of these extreme bevel consumables creates new opportunities for customers around the world.”

Hypertherm engineers and manufactures industrial cutting products used by companies around the world to build ships, airplanes and railcars, construct steel buildings, manufacture heavy equipment and more. Its products include cutting systems, CNCs and software trusted for performance and reliability that result in increased productivity and profitability for hundreds of thousands of businesses.



Founded in 1968 and based in New Hampshire, Hypertherm is a 100 percent associate-owned company, employing more than 1,800 associates, with operations and partner representation worldwide. Learn more at www.hypertherm.com.

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Kyocera's industrial precision knives are now available in Europe

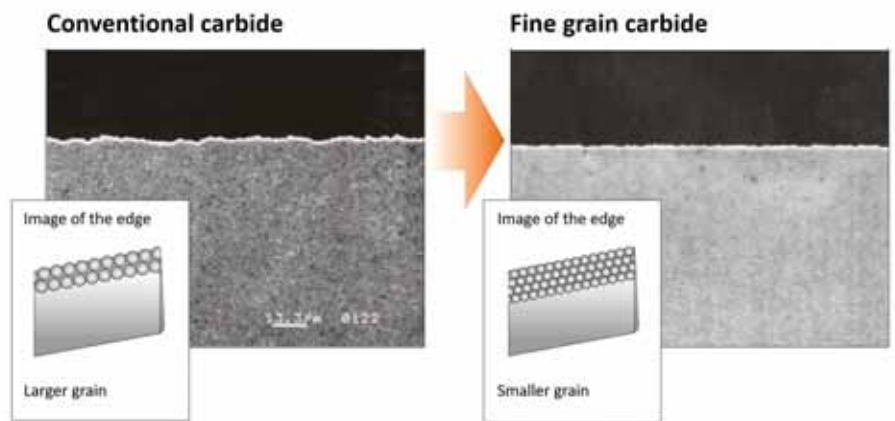
Precision with every cut is guaranteed with Kyocera's industrial precision knives. Applications range from functional films, rubber products, paper and cardboard, adhesive tapes to electronic devices such as LCD displays, lithium-ion batteries, FPCs, TAB and COF tapes and aluminium electrolytic capacitors. The products will be presented for the first time in March 2021 at ICE Europe, a leading international trade fair for the finishing and processing of paper, film and foil

It's all about the materials

Fine ceramics expert Kyocera uses three high-quality materials for its precision industrial knives: ultra-fine grain carbide, cermet and zirconium oxide. The first of these is suitable for a wide range of industrial applications due to its high density, hardness and break resistance. It is also very well suited for EDM. The composite material Cermet, which is composed of TiC, TiN, NbC with Co and Ni, among other materials, is known for its good wear resistance and low affinity to metal. This material can also be spark eroded and brazed. Zirconium oxide is the third substance used in Kyocera industrial precision knives. It is a tough ceramic with excellent corrosion resistance. It is neither magnetic nor electrically insulating. This makes it suitable for a wide range of applications, for example in knives and scissors.

Knife blades made of the above-mentioned materials are treated with Kyocera's own satin coating process. This is known as Micro Finishing® and makes costly polishing or coating superfluous. In a special process, the surfaces of the blades are roughened to prevent buildup on adhesive materials. The result is a Satin Surface® that reduces the frictional resistance of the knives. This not only prevents the spread of dust through friction, but also helps prevent materials, such as synthetic fibres, from sticking to the cutting edges. Further advantages include cost savings at the time of purchase, no rounding of the cutting edge due to coating or polishing of the blade and build-up on the cutting edge due to material sticking to the blade is avoided.

All in all, the industrial precision knives extend service life many times over thanks to the innovative combination of materials. At the same time, the surfaces are cut much



more precisely than with conventional metal blades and, unlike these, they offer an excellent cut surface. The fine grain size also ensures high intensity, very tough and highly break-resistant material. Another advantage is that the blades can be re-sharpened by Kyocera at any time.

Kyocera offers various industrial precision knives for a wide range of applications

Industrial ultrasonic cutters

The ultrasonic cutters are ideal for cutting soft, porous and unstable materials with fragile joints. Using ultrasound eliminates the risk of deformation of the products, so even delicate materials can be cut without hesitation. Thanks to the minimised surface friction, even the smallest surfaces can be machined cleanly and accurately. The blades are designed in such a way that they do not bond with the material, which is why there is no chipping or burring. They impress not only with high productivity and minimum cleaning time, but also with high processing speed, energy-saving efficiency and low environmental impact.

Gabel and gang knives

These knives are not only extremely precise,

but also durable. The longitudinal slitting knives are manufactured using proven and optimised production technology. The substrate selection consists of a combination of the aforementioned materials ultra-fine grain carbide, cermet and zirconium dioxide, thus combining the advantages of the individual substances in one blade.

Ring knives

Sharp-edged and highly precise, this is what makes Kyocera's ring knives so special. The sharpened edges and surface treatment are ideal for cutting everything from individual films to dressing materials.

Creasing and cutting blades

The blades are made of very hard, finest grain tungsten carbide. Thanks to the precise edge sharpening technology, not only do the blades have a longer service life, but they are also ideal for cutting cardboard boxes.

Straight-edge knives

In addition to the optimised quality, the knives also impress with their superior surface treatment. Both factors contribute

to reducing emissions during the cutting process. In addition, productivity is significantly improved thanks to interrupted cuts in fibre production due to the good wear resistance and sharpness.

Die and punch forms and shaped knives

These knives combine optimum material selection with high-precision processing technology. This results in high-quality, high-precision wear-resistant blades for a wide range of applications. The blades are also manufactured in cermet, which is particularly suitable for reducing scratches on the surfaces of finished products due to its low affinity to metal.

In addition to the industrial precision knives mentioned above, Kyocera also manufactures custom knives on request. This ensures that the customer's cutting requirements are taken into account to the greatest possible extent and the processes are adapted to suit the individual requirements.

Headquartered in Kyoto, Japan, Kyocera Corporation is a leading manufacturer of fine ceramic components for the technology industry. The strategically important



divisions in the Kyocera Group, which is comprised of 298 subsidiaries, as of March 31st, 2020, are information and communications technologies, products which increase quality of life, and environmentally friendly products. The technology group is also one of the most experienced producers of smart energy

systems worldwide, with more than 40 years of know-how in the industry.

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Behringer 3D-Series

The flexible solution for additively manufactured parts

For its 100th anniversary, Behringer complemented its product portfolio with the new 3D-Series including two models. The high-performance sawing machines were developed for cutting additively manufactured parts in different sizes and shapes.

Additive Manufacturing (AM), or simply said 3D printing, is becoming more and more important in nearly all industries. The new processes make it possible to produce simple as well as complex parts in different materials. The additively manufactured parts are printed on a base plate via a supporting structure. 3D printing offers many advantages, like a higher design flexibility and individualisation of the products. To use and process the 3D printed parts, they have to be detached from the base plate.

The new 3D-Series from Behringer separates the additively manufactured parts from the base plate with the highest cutting precision. Neither the print plate nor the printed parts get damaged due to the high cutting accuracy of the Behringer band sawing machines. The 3D-Series includes the two models HBE320-523 3D and LPS-T 3D.

Highest sawing precision even with large cutting dimensions

No matter whether steel, aluminum, titanium and nickel-based alloys or plastics the 3D-saws from Behringer cut all additively manufactured parts in different sizes and shapes without any problems. As the fixture can be individually manufactured

to customer requirements, high flexibility is guaranteed.

The HBE320-523 3D, based on the existing and established HBE Dynamic Series, offers a fixture for small and medium-sized plates up to 500 x 300 mm. A simple and quick setup process and compact machine dimensions are advantages of this model.

The LPS-T 3D demonstrates its strengths when sawing larger printing plates. The vertical design of the machine with a freely accessible machine table ensures an easy loading and handling of big and heavy base plates. Especially when cutting steel or other difficult-to-cut materials, the standard servo feed system provides a steady saw feed movement which helps to ensure a quiet and stable cutting process. This results in high cutting performance and blade life for the machine.

With the blade deflection monitoring system and its adjustable thresholds, both models of the Behringer 3D-Series ensure highest sawing precision. The sawing of additively manufactured printed parts with a minimised supporting structure is made possible. In addition, different cooling and lubricating systems optimise the sawing of various materials.

Simplified setup

The fixture of both models is moveable, which ensures easy loading and handling. Due to the standard zero-point stop system, manual positioning by the operator is not necessary. By aligning to the base plate, the



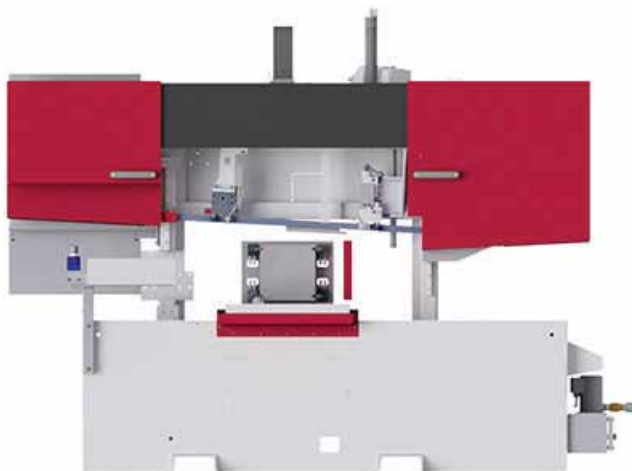
swiveling zero stop simplifies the setup operation and also reduces sources of errors.

Safety features

Both the HBE320-523 3D and the LPS-T 3D offer the option of a machine housing with an optional evacuation system to extract oils, aerosol mists, vapours or metal dust. This ensures that no substances at risk of health get into the working environment.

The Behringer Group is a manufacturer of high-performance bandsawing machines, circular cold saws and structural fabricating equipment. Operating as Behringer Ltd., the UK operation is located in Pitstone, Bedfordshire and is a subsidiary of the parent company Behringer GmbH, in Kirchardt, Germany.

It prides itself on building the highest quality metal sawing and fabricating equipment in the world. The primary goal is to create value for its customers, by continuously striving to achieve the highest combination of speed and accuracy, combined with cost-effectiveness. All equipment design is based on achieving these primary objectives, on a dependable and long-lasting machine and, in that regard, Behringer demonstrates its excellence and quality.



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Saws UK offers virtual service support

The COVID-19 pandemic, as well as the subsequent lockdown, has affected businesses in every industry and sector. While some have been harder hit than others, almost all companies operating in the UK have had to adapt in order to serve their client base and survive in these difficult times.

Like many of the country's most innovative and forward-thinking companies, Saws UK has found ways to continue manufacturing, selling and supporting during the lockdown. One of its most exciting innovations is its new virtual service support. Allowing the company to provide customers with the help they need, while keeping staff and clients safe, it's helped to maintain its high standards of customer service during lockdown.

While its machines are precisely engineered and built to the highest standards, they still require regular maintenance in order to keep them in top condition. Occasionally, when something does go wrong, some of the machines may need repairs or servicing to get them back

up to standard. As finding a repair person is not so easy right now, it has launched a virtual service support to help customers maintain and repair machines themselves. This virtual service support takes the form of online video tutorials. Designed to be as easy to follow as possible, the videos will help to diagnose issues with a saw and put the problem right.

One of the main benefits of the online video tutorials is that you can watch them at a time that suits you. What's more, you're able to replay the most relevant sections of video to ensure you get the fix just right.

There are already a number of support videos online. These cover common repair and maintenance issues with some of the most popular models and should help you to get your saw up and running once more. If the issue you're dealing with isn't covered by one of the videos, get in touch and Saws



UK will try to create a video that addresses the problem you're facing.

Alternatively, the company can talk you through the steps required over the phone and help to get your saw up and running. In many cases, this virtual support will help to reduce the cost of servicing and repairing your saw. For some issues, it could eliminate the cost of unnecessary repairs altogether.

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Why your project needs a top-quality circular saw

Since its inception in the 19th century, the circular saw has been a mainstay in the arsenal of DIY enthusiasts and tradespeople alike. Offering quality, affordability and endurance, these saws and their blades are employed for all sorts of jobs.

With circular saws, the cutting rates that you get are as good as they can be. With top-quality components and high speeds, you can achieve rates way above what you've previously had. This performance is boosted further depending on the type of blade you choose to work with. Our solid carbide blades are designed to maximise performance and these can be viewed by browsing our stock.

Due to the quality that these blades and saws offer, your component unit cost is usually reduced significantly. These long-lasting, high-quality tools are designed to work on projects without fault. By using the best materials, tried-and-tested methods and an extensive quality control process, every product is created with the customer in mind. Circular saws are

well-used tools and as such, they need to stand the test of time. You're guaranteed quality for as long as you use our products.

While you may be limited by other tools, you shouldn't have any such problems with the range of circular saws from Accurate Cutting Services (ACS). Usable with manual, semi-automatic and fully automatic machines, the blades that ACS provide are multi-use and perfect for a range of applications. The saw blades range from \varnothing 20 mm - \varnothing 315 mm with thicknesses ranging 0.2 mm to 6 mm in variable increments with tooth forms: A - B - BW. By having such a range of options available, ACS can fulfil your needs, for those of your business and any projects you've got in the calendar.

With circular saws, you're sure of a simple, efficient process. Unlike the reciprocating saw, the circular saw is always ready to cut. Typically moving at 5,000 revolutions a minute, these saws glide through lumber



and other materials effortlessly with no fuss and no waiting. Using carbide blades further improves this performance as the blade isn't slowed down.

Practical, efficient, and high-quality, these saws hold a multitude of advantages over other tools on the market. However, one of the biggest advantages is that the circular saw can be adjusted to suit your needs for most projects.

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www.accurate-cutting.co.uk

Warrior 750i is ESAB's most powerful multiprocess welder

Combining durability, portability and performance

ESAB Welding & Cutting Products has launched its Warrior® 750i CC/CV, a multi-process welding power source with a 750 amps output at 100 percent duty cycle and top output of 850 amps, which is up to 100 amps more power than competitive systems. Warrior 750i can carbon arc gouge with 13 mm electrodes, creating a stable gouging performance to produce high quality results at the maximum output. The unit's extra power also enables greater productivity with larger diameter electrodes in such applications as flux cored welding, hardfacing, cladding and mechanised applications. These processes are widely used in shipyards, offshore fabrication, civil construction, structural steel, heavy equipment fabrication and repair and other industrial fabrication activities.

The inverter-based Warrior 750i weighs 97 kg, offers MIG, flux cored, MMA and TIG welding outputs, uses 380V-460V~AC ± 10 percent 3 ph main power and has an electrical efficiency of 91 percent for greater energy savings. It features an IP23-rated weatherproof case and crane-rated lifting points. It uses an "air tunnel" cooling design that isolates electronics from dust, oil, metal shavings and other airborne contaminants. Thick metal side panels provide impact protection, yet the design enables easy access for service and maintenance. Its ergonomic handles are crane rated. The optional cart also features dedicated crane lifting points, as well as a torch holder and large cable holders for better organisation.

Performance starts with a sun-friendly display and intuitive controls that enable easy process selection. The Warrior 750i lets users tailor MMA welding arc performance for basic, low-hydrogen, rutile or cellulosic electrodes; adjust arc force to hold a shorter arc length without the electrode sticking, which is beneficial when welding in narrow gaps and out-of-position and adjust control inductance when short circuit MIG/MAG welding to reduce spatter and improve bead wet-out.

For MIG/MAG and flux cored welding, connect the Warrior 750i to the Robust Feed



The ESAB series of heavy industrial welding systems features the new Warrior 750i CC/CV, an inverter-based, multi-process welding power source. These systems provide an unmatched combination of reliability, durability, performance, process flexibility and energy efficiency

Pro wire feeder, which redefines the concept of a fully enclosed wire feeder by combining an IP44 protection class rating, an industry first, with an optional built-in heater to ward off condensation and preserve wire integrity. Robust Feed Pro has a feeding performance with solid and cored wires that exceeds that of most benchtop wire feeders, allowing users to standardise on one style of feeder to simplify training, maintenance and wear parts stocking. Robust Feed also offers best-in-class ergonomics, crane-rated lifting options and optional wheel kit that affixes to either the bottom or side of the unit to provide a very stable wheeled solution. The digital display can be rotated 90 degrees for a vertical or horizontal orientation so operators can read parameters without straining.

The Warrior 750i is the newest product in ESAB's line of heavy industrial systems, which include the new Aristo® 500ix pulsing power source, new Robust Feed Pulse and Robust Feed U6 wire feeders, the Robust Feed Pro and the Warrior 400i and 500i CC/CV power sources.

ESAB exists to shape the future of welding and cutting. It connects fabricators with the widest range of products within an industry-leading brand portfolio with the latest technologies to solve virtually any industry challenge. This is backed up with knowledge, experience and passion to help them be more productive than ever before.

ESAB is a leader in the production of welding and cutting equipment and consumables. Its innovative, world-renowned equipment and solutions are developed with input from our customers and built with the expertise and heritage of a global manufacturing expert. The company offers a world of products and solutions for virtually every welding and cutting process and application. To learn more, visit esab.com.

ESAB Group (UK) Ltd
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Email: service@esab.co.uk
www.esab.co.uk

Simply better welding

New welding power source QINEO StarT

The QINEO StarT MIG/MAG welding power source offers an easy entry into the world of modern welding technology. Due to the excellent price-performance ratio, users can weld any workpiece at economic conditions. The heart of the QINEO StarT is an inverter power unit developed by CLOOS which clocks with a high frequency. This allows an even better arc control for excellent results.

The configuration possibilities of the QINEO StarT are as flexible as the welding applications are versatile. This is guaranteed by the consistently modular product concept. From the capacity class to the wire tip, each QINEO StarT is customised. Due to the modular system with the Eco, Master and Premium versions, users can customise the QINEO StarT to be their individual welding system.

The easy, quick and intuitive operation is a convincing feature of the QINEO StarT. Users benefit from the comfortable operating concept that they can adapt to their individual requirements. Last but not

least, the QINEO StarT is characterised by high-quality components with numerous optional functions. The maximum quality standard makes the QINEO StarT a long-lasting and robust welding machine.

Robot and welding technology from a single source

Since 1919, Carl Cloos Schweisstechnik GmbH has been one of the leading companies in welding technology. More than 800 employees all over the world realise production solutions in welding and robot technology for industries such as construction machinery, railway vehicles, automotive and agricultural industry. The modern CLOOS welding power sources of the QINEO series are available for a multitude of welding processes. With the QIROX robots, positioners and special purpose machines CLOOS develops and manufactures automated welding systems to meet the specific requirements of its customers. The special strength of the



Due to the modular system, the QINEO StarT offers configuration options individually adapted to the welding task

company is its widely spread competence. From the welding technology, robot mechanics and controller to positioners, software and sensors; CLOOS supplies everything from a single source.

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www.cloos.de

Telsonic's HandyStar Energy

Flexible ultrasonic technology for prototypes and production

The benefits that ultrasonic technology brings to a broad spectrum of joining and cutting applications, is leading many manufacturers to transition from other methods to the ultrasonic process.

In many cases Telsonic's ultrasonic technology is integrated as part of a comprehensive manufacturing system. However, there are other instances where perhaps production volumes do not require an automated solution, or where prototype or development work is being undertaken. The solution in these circumstances is the compact, yet powerful, HandyStar Energy system, which can be used for a variety of applications.

Equally suited for use within a manual workstation or as an entry-level device, the HandyStar is a great introduction to the ultrasonic process. Typical applications for this lightweight hand-held system include spot welding, inserting, riveting and cutting.

The MAG ultrasonic generator, integrated

at the heart of the HandyStar Energy unit, is designed for maximum process stability and maximum flexibility. Thanks to the comprehensive range of configuration options, the HandyStar Energy is capable of being used on even the most sophisticated of applications, providing a reliable, cost effective and high quality solution. Functional design was a key part of the development process of the MAG generator, resulting in clearly arranged LED displays which indicate at a glance, the status of the device. The capability to precisely fine-tune the amplitude between 10 percent and 100 percent ensures flexible application solutions and optimum results each time.

Other features, in addition to the standard manual mode, include time only and energy. Also, the integrated compressed air cooling for the converter is switched on automatically, if required, minimising consumption and keeping



operating costs low. The standard handheld device can be further enhanced through the addition of an alternative hand grip, if required by the ergonomics of the application.

Telsonic offers a comprehensive range of ultrasonic modules and systems for a variety of plastic welding, cutting, sealing, cut'n'seal, metal welding, packaging, sieving, food cutting and cleaning applications within a wide range of industries.

Telsonic UK Ltd
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Brighouse welded mesh manufacturer announces £2m investment and new jobs as it celebrates its 125th anniversary

After 125 years of trading, welded steel mesh manufacturer Siddall and Hilton Products has started the New Year with a bang, announcing its largest investment in 12 years with the purchase of a new £2m specialist welding machine that will increase capacity and efficiency at its Brighouse manufacturing site and head office, as well as creating more than ten new jobs.

The £18 m turnover company dates back to 1895 and is the UK's largest manufacturer of welded steel mesh for high-security fencing, general fencing and industrial mesh panels, processing over 1,500 tonnes of wire a month. Currently employing 51 people, it is seeing sustained growth following an MBO in August 2019. Under the leadership of chief executive Ian Thurley, the management team has undertaken a programme of operational improvements and the new machine will play a key part in bringing about further efficiencies and enabling the business to expand production in addition to creating a further 12 full-time manufacturing roles.

The new LGR102 welding machine, which is due for delivery in March, utilises the latest medium frequency welding technology and is manufactured by EVG, based in Graz, Austria. It will be configured to manufacture 100 percent of Siddall and Hilton's industrial mesh product range and will be the fifth in the company's fleet of EVG machines. The investment has been funded by Siddall and Hilton's primary lenders, ABN Amro.

"Having supplied all four of our existing machines, we have enjoyed a long-standing



relationship with EVG going back over 30 years and know that their welding equipment is amongst the best in the world," explains chief executive Ian Thurley. "The new machine will run 40 percent faster than any of our other machines and will produce up to 70 percent less process scrap. As it will focus on the production of industrial mesh, it will also free up capacity for fencing mesh on our existing equipment."

He continues: "We're proud to be one of the oldest and largest employers in Brighouse and it's great news for the business that we will be making our largest investment for over 12 years as we celebrate 125 years of trading.

"This exciting new phase in the business' development also means that we will be expanding the team and we are actively



recruiting mesh operators as we will need to increase our total headcount by 25 percent. We recognise that our success is dependent on having a committed and engaged workforce and we will be looking for people to train as the next generation of managers and engineers to take the business forward as we continue to expand."

Located in Foundry Street, the business' history dates back to 1895 when Richard Redfearn and Samuel Bedford founded Redfearn & Bedford; the company merged with Siddall and Hilton in 1958.

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