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FACT: Every 8 minutes of every

Toolroom Mills

TM-1E ● 762 x 305 x 406 mm
TM-2E ● 1016 x 406 x 406mm
TM-3E ● 1016 x 508 x 406 mm
TM-1P ● 762 x 305 x 406 mm
TM-2P ● 1016 x 406 x 406mm
TM-3P ● 1016 x 508 x 406 mm

Drill & Tap

DT-1 ● 508 x 406 x 394 mm

Mini Mills

Mini Mill-1 ● 406 x 305 x 254 mm
Super MM-1 ● 406 x 305 x 254 mm
Mini Mill-2 ● 508 x 405 x 356 mm
Super MM-2 ● 508 x 405 x 356 mm

Office Mill

OM-2A ● 305 x 254 x 305 mm

VF Series VMCs 40 and 50 taper

VF-1 ● 508 x 406 x 508 mm
VF-2 ● 762 x 406 x 508 mm
VF-3 ● 1016 x 508 x 635 mm
VF-4 ● 1270 x 508 x 635 mm
VF-5 ● 1270 x 660 x 635 mm
VF-6 ● 1626 x 813 x 762 mm
VF-7 ● 2134 x 813 x 762 mm
VF-8 ● 1626 x 1016 x 762 mm
VF-9 ● 2134 x 1016 x 762 mm
VF-10 ● 3048 x 813 x 762 mm
VF-11 ● 3048 x 1016 x 762 mm
VF-12 ● 3810 x 813 x 762 mm

Toolroom Lathes

TL-1 ● 406 x 762 mm
TL-2 ● 406 x 1,219 mm
TL-3 ● 508 x 1,524 mm
TL-3B ● 762 x 1,524 mm

Office Lathe

OL-1 ● 305 x 204 mm

Long Bed Lathes

ST-40L ● 648 x 2.032 mm
ST-45L ● 648 x 2.032 mm

ST Series Lathes

ST-10 ● 355 x 356 mm
ST-10 Y-axis ● 305 x 356 mm
ST-20 ● 381 x 533 mm
ST-20 Y-axis ● 305 x 533 mm
ST-20SS ● 254 x 533 mm
ST-30 ● 533 x 660 mm
ST-30 Y-axis ● 457 x 584 mm
ST-30SS ● 406 x 660 mm
ST-40 ● 648 x 1,118 mm

DS Series Lathes Dual Spindle

DS-30 ● 533 x 660 mm
DS-30 Y-axis ● 457 x 584 mm
DS-30SS ● 406 x 660 mm
DS-30SS Y-axis ● 406 x 584 mm

Big Bore Lathes

ST-25 ● 381 x 533 mm
ST-25 Y-axis ● 305 x 533 mm
ST-35 ● 533 x 660 mm
ST-35 Y-axis ● 457 x 584 mm
ST-45 ● 648 x 1,118 mm

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Mould Maker VMCs

VM-2 ● 762 x 508 x 508 mm
VM-3 ● 1016 x 660 x 635 mm
VM-6 ● 1626 x 813 x 762 mm

Extended Travel VMCs

VF-1YT ● 508 x 508 x 508 mm
VF-2YT ● 762 x 508 x 508 mm
VF-3YT ● 1016 x 660 x 635 mm
VF-5XT ● 1524 x 660 x 635 mm

GR Series Routers

GR-510 ● 3,073 x 1,549 x 279 mm
GR-712 ● 3,683 x 2,159 x 279 mm

Super Speed VMCs

VF-2SS ● 762 x 406 x 508 mm
VF-2YT SS ● 762 x 508 x 508 mm
VF-3SS ● 1016 x 508 x 635 mm
VF-3YT SS ● 1016 x 660 x 635 mm
VF-4SS ● 1270 x 508 x 635 mm
VF-5SS ● 1270 x 660 x 635 mm
VF-6SS ● 1626 x 813 x 762 mm

Y-Axis Lathes

ST-10 Y-axis ● 305 x 355 mm
ST-20 Y-axis ● 305 x 533 mm
ST-25 Y-axis ● 305 x 533 mm
ST-20SS Y-axis ● 254 x 533 mm
ST-30 Y-axis ● 457 x 584 mm
ST-30SS Y-axis ● 406 x 584 mm
ST-35 Y-axis ● 457 x 584 mm
DS-30 Y-axis ● 457 x 584 mm
DS-30SS Y-axis ● 406 x 584 mm

EC Series HMCs

EC-400 ● 508 x 508 x 508 mm
EC-400PP ● 508 x 508 x 508 mm
EC-500 ● 813 x 508 x 711 mm
EC-1600 ● 1,626 x 1,270 x 813 mm
EC-1600YZT ● 1,626 x 1,270 x 1016 mm

5-Axis Universal Machine

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Super Speed 5-Axis UMC

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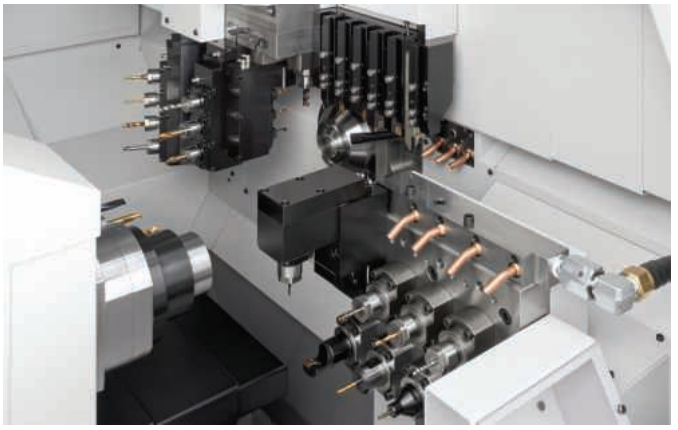
Citizen's new wave of technology

Already established as a manufacturing industry 'icon' in CNC sliding head turn-mill technology, Citizen Machinery has reinvented its top-selling, mid-range L-Series with the launch of three variants of the L32.

The new L-Series introduces a modular build specification and is available in Type-VIII, -X and –XII with between five axes, giving new orders in cost-to-performance, to a high-end version with seven-axes, a +90 to -45 degree rotary B-axis with driven tools and additional Y-axis feed to the back tool post. Rapid traverse rates are now 32 m/min.

The new generation of L32 which has a 40 tool capacity, benefits from optional 'functional' packages for the gang, opposite and back toolposts. It also has a bar capacity of 32 mm as standard which can be increased to 35+ mm as an option, while incorporating Citizen's popular operator exchangeable guide bush to non-guide bush. This concept saves material on short length parts and takes under 30 minutes to accomplish.



The three new versions all feature new wider access to the working zone through a rising and hinged operator door plus additional rear access. Main and sub-spindles have 7.5 kW and 3.7 kW motors respectively, providing 8,000 revs/min and driven tool speeds of 6,000 revs/min from 1 kW motors.

Added flexibility from the modular function package strategy provides a 'picking list' according to the machine selected and to suit production requirements. For instance, the L32 Type-VIII has optional driven tool capability on the opposite toolpost, Types -X and -XII also have a Y2-axis and driven tools on the back toolpost plus driven tool capability as standard on the opposite toolpost. Meanwhile, Type-XII also incorporates driven tools on the B-axis gang toolpost.

For the rotating B-axis on the gang toolpost there are four double-ended driven tools using the 135 deg of swivel movement. On the opposite toolpost there is a choice of packages having four fixed tools (Type –VIII) or three driven tools (Type-X and -XII).

The back toolpost has two options of four driven and one fixed tool position or, when incorporating the Y2-axis, nine double-decked tools, four fixed or driven spindles in the upper row and five fixed in the lower row.

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Spettacolo!

EMO Milan proves to be a great success for visitors and exhibitors

The world-leading metalworking show really lived up to all expectations when it returned to Milan after an absence of six years. With over 6,600 machines on show, many of them under power, the 12 halls of the impressive Fieramilano represented a panoplia of advanced machining technology for the huge number of attendees from across the globe.

As well as the latest machine tools and accessories, there was a particular emphasis on automation and advanced manufacturing techniques such as additive manufacturing, production software and 3D printing.

Hall 3 was a magnet for anyone keen to discover the latest in robot technology. The star of this part of the show was undoubtedly AMICO, the human-like robot which is particularly effective even in small spaces. This new technology emphasises Comau's commitment towards increasingly precise and effective robotics. It's a future in which machine-machine cooperation and, progressively, man-machine cooperation, evolves from a mere hypothesis to a real production opportunity that can be applied in total safety.

The arms of AMICO feature two SCHUNK SDH2 grippers, a multi-articulated gripping system with three fingers and the ability to grab a wide range of objects, which makes it perfect for robotic industrial applications. Two of the SCHUNK gripper fingers can, in fact, change their orientation to adapt to a wide variety of applications. The gripper is also able to recognise each surface and release the necessary strength through a specific sensor. In addition to extreme

precision, this allows the robot to immediately understand whether the gripping is optimal or should be adjusted.

The Hardinge Group presented the Hardinge Quest GT 27 SP, a combined Turning & Grinding Centre, specially designed for high precision manufacturing of complex parts. The machine features a 10 hp, 8,000 rpm A2-4 main spindle with 27 mm bar capacity. The Quest GT 27 SP can also be supplied as a "Big Bore" version to handle up to 42 mm bar capacity. The headstock assembly features a heavily ribbed construction, allowing minimal heat retention and optimum part size control.

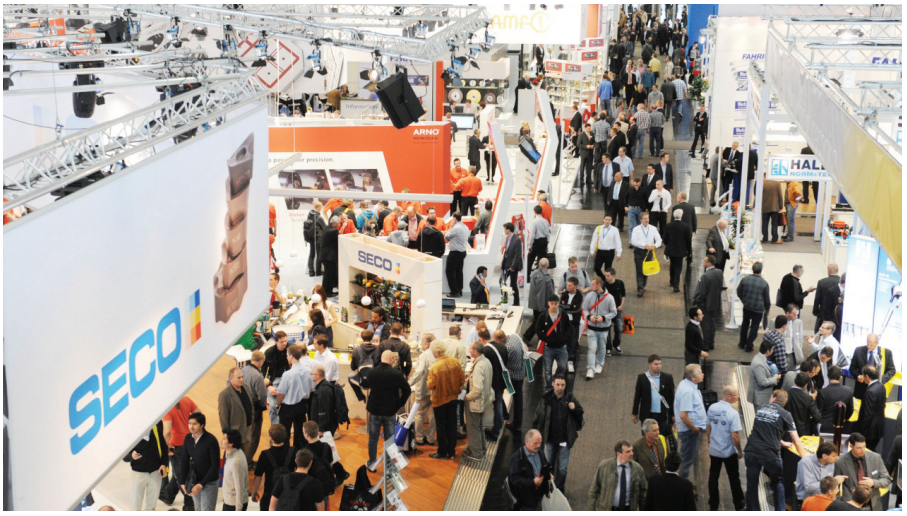
The new machine can be equipped with up to four grinding spindles, making it ideal for producing high quality, high precision parts, depending on how the machine is configured. The grinding spindles can have speeds of 30,000, 50,000, 80,000 or 100,000 rpm with surface finishes (turning) of .20 micron with an achievable exacting part roughness of .38 micron.

Various options include a High Frequency grinding spindle with hybrid bearings, Driven Tool attachments, C-axis, automation and bar feed systems. These optimise handling and help reduce production and process times.

Marposs demonstrated Marposs/Dittel System Monitoring for grinding machines. Increased productivity and reduced maintenance costs are key elements of an economic process. The optimum solution is real-time control of events not belonging to workpiece machining or machine conditions. Controlling events such as the grinding wheel-workpiece, grinding wheel-dresser approach speeds and dressing depth of the machine, increases productivity.

This raises questions, such as: do you need to shorten grinding cycle, increase grinder safety, improve dressing cycle, optimise dressing of the CBN wheel, reduce grinding cost or save on maintenance cost?

MARPOSS/DITTEL supplies the answer with a wide range of systems monitoring for grinding machines based on acoustic emission technology, able to satisfy various requirements, including continuous process control and air gap check, dressing, grinding wheel and workpiece collision.



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SMOOTH operator

Yamazaki Mazak unveiled its full SMOOTH Technology CNC 'family' at EMO 2015 with a dedicated SMOOTH zone, 3D theatre and 18 machines incorporating the world's fastest CNC. Having launched SmoothX, the 5-axis control along with SMOOTH Technology, at its European headquarters in Worcester in May, Mazak gave European debuts to its new SmoothG and SmoothC CNC controls at EMO 2015.

The SMOOTH Technology 'family' has a common design concept, the same servo drives and motor package and a common interface and operator experience, making it the ideal CNC solution for connecting machines across a single cell or an entire manufacturing facility.

Crucially, SmoothG and SmoothC are equally as fast as SmoothX, and are able to achieve machining processing speeds of up to 540 m/min, four times faster than its predecessor control, enabling it to easily respond to the demands of the latest generation of servo motors employed for unrivalled high speed operation.

SmoothG has been developed to handle machines up to 16 axes, with 4-axis in simultaneous motion, making it the ideal CNC for vertical and horizontal machining centres and high performance turning centres, from 2-axis up to multiple axes and spindle configurations.

SmoothG includes the same revolutionary features of SmoothX that deliver a step change in productivity. Like its sibling, it boasts a 19" touch screen panel as well as a new Graphical User Interface featuring five new process home screens that present critical data in a single page view, whilst simplifying the key operational stages: from part programming, management of tool data and setup, through to the actual machining cycle and machine maintenance.

Mazak's SMOOTH Technology CNC 'family' including SmoothG and SmoothC made their debuts at EMO 2015

The INTEGREX i-400 AM combines additive manufacturing technology with Multi-tasking capability

The new Quick MAZATROL interface for SmoothX and Smooth G also dramatically reduces programming time and the number of keystrokes required to enter a conversational program, in fact SMOOTH Technology is 38 percent quicker to program compared to its predecessor. This is achieved by the use of touch screen technology and real-time processing of the 3D part shape in simultaneous view as the program is completed. Users also benefit from a new Quick EIA interface that displays the tool path surface instantaneously with an intuitive touch screen feature, dynamically linking each program block for easy navigation, while the 'Analyze' function quickly determines tool path errors that could cause surface defects.

Yamazaki Mazak also gave a European debut at EMO 2015 to its revolutionary new hybrid machine which combines additive manufacturing with multi-tasking capability.

The INTEGREX i-400 AM integrates Direct Energy Deposition additive manufacturing technology into a state-of-the-art 5-axis Multi-Tasking machine to offer machine users unrivalled hybrid technology, combining the benefits of additive and subtractive manufacturing into one platform.

The INTEGREX i-400 AM makes use of a built-in 1 kW fibre laser to melt metallic powder, which is then applied layer by layer via interchangeable cladding heads. These heads are stored in the machine's standard 36-tool magazine and provide the ability to automatically change between additive and subtractive tooling, optimising process cycle time. Once the additive manufacturing process is complete, the machine's Multi-Tasking capability finishes the component.

The latest generation of the INTEGREX i-400 AM originally launched at JIMTOF in 2014, now also incorporates a full A and C axis NC Table providing the capability to both machine or clad simultaneously in full 5-axis, further enhancing the application geometry that can be generated.

The INTEGREX i-400 AM technology can be used to clad a range of material types, including stainless steel, nickel alloys and copper. The applications on display at EMO 2015 demonstrate the challenging combination of carbon steel substrate and Inconel 718 cladding. This capability to cover a variety of materials makes the machine ideal for a range of applications, from repairing existing worn or damaged components, to the addition of critical features or the complete generation of new parts.

The INTEGREX i-400 AM, which is now available with SmoothX control, has full 5-axis machining capability to efficiently process prismatic, round and highly contoured work pieces, as well as those near net features which have been created using the integrated additive technology. Finished parts can also be laser marked if necessary using the same head technology, making the INTEGREX i-400 AM truly capable of DONE-IN-ONE manufacturing. This hybrid machine is ideal for high-value added production.

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New Citizen and Miyano launches

Citizen Machinery launched four new significant products from its 10 Cincom sliding head and Miyano fixed headstock turn-mill product ranges at EMO.

Amongst the key new products from the Citizen-Cincom range include the 'icon-reinvented' world's top selling L-Series which is now built on a modular platform with improved lift-up access guarding. The new machines will be represented with the series topping 7-axis L32-XII and the 6-axis L20-XII both equipped with B-axis for driven tools, a back tool post with Y-axis feed, 40 tool capacity and detachable guide bush. In addition, a 5-axis L12 will feature high speed 15,000 revs/min spindle and 10,000 revs/min driven tools, plus fully automatic part unloading.

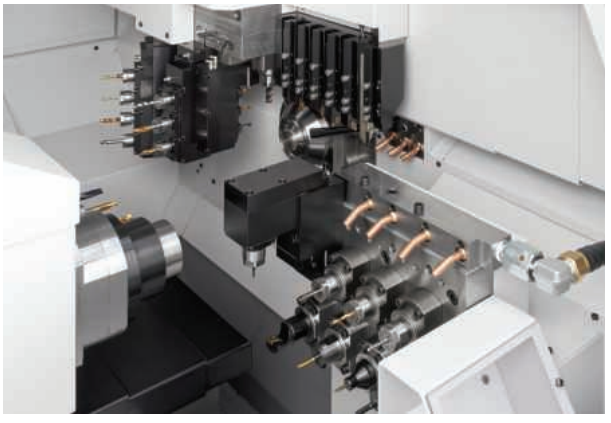
The new L-series machines are part of the new range pitched as an 'icon-reinvented' due to the previous generation series' record of installation successes around the world.

Central to the newly developed Citizen L32 is its modular design and extra wide, easy access, rising operator door and additional rear access for setting and the capability to enable the machine to be configured from a package of 'function modules' to meet their needs. It is delivered in guide bush and non-guide bush formats as standard and bar capacities of 32 mm as standard and 35+ mm as an option. The new series of three models span from a 5-axis machine with 30 tool capacity to a highly flexible 7-axis version having 40 tools plus a B-axis, and Y2-axis to the back tool post.

A significant launch by Citizen was the new ultra-compact R-series which has, in previous generations, been a best seller for smaller part production in the watch, instrument, connector and PCB industries. Available in 16 models covering RD01 with 1 mm and R04 for 4 mm capacity, configurations are also available in single and double spindle formats and with rotary guide bushes. Both single spindle R04 and double spindle RD01 were shown on the EMO stand, with fast accelerating 20,000 revs/min spindle and maximum machining diameters of 1 mm by 30 mm chucking length and 4 mm by 40 mm respectively. Depending on the variant, machines are available with between 3- and 6-axes and eight and 17 tool positions.

The Citizen-Cincom 'icon-reinvented' L32 was a significant launch in the mid-range of CNC sliding head machines at EMO 2015

Completing the Citizen line up was the award winning MC20-III modular multi-station machining cell. Utilising its three modular spindle / tool platen units, the exhibition machine was demonstrated with an Iemca barfeed, enabling simultaneous progressive machining at each integrated unit station. Providing a significantly faster change over and lower investment cost when compared to multi-spindle CNC machines the MC20 also gives high productivity and a lower cost-per-part than single spindle CNC machines.



Citizen-Miyano fixed head turn-mill centres were represented by four machines. The BNJ-51SY6 was launched providing overlap control on the main 12 station turret with both 15 kW main and 7.5 kW sub-spindles. The new machine can also be set for independent simultaneous machining on the main spindle with the main turret and sub-spindle to sub-six station turret.

The BNA-42GTY has an eight station turret, while a gang toolpost provides a total of 45 tool positions. This machine can be used for higher productivity balanced cutting and pinch milling in addition to 3-axis overlapped cycles.

Meanwhile, the BNE-51MSY with two 15 kW and 7.5 kW spindles and two turrets sharing 24 driven tool positions demonstrated simultaneous machining with three tools using the latest Mitsubishi Superimposition control.

Incorporating high speed integrated gantry loading, the GN3200W production cell features feeding and off-loading of two 2.2 kW 8,000 revs/min spindles serviced from a pair of platen style tool holder units.

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Tornos introduces new turning centre

Tornos launched a new version of its market leading Swiss GT26 turning centre at EMO. This best-selling unit from the Tornos brand was unveiled with a host of new developments that include a B-axis to increase the already impressive flexibility credentials of this machine.

Customer feedback shows that the existing Swiss GT26 has been a huge success in the marketplace with installations in the aerospace, hydraulic, pneumatic, defence and subcontracting sector. However, Tornos is taking the Swiss GT26 to the next level with a raft of new product developments. With 6 linear axes, two C-axes, three live tooling platens with the facility for 14 driven tools and a total of up to 40 tools, the GT26 provides remarkable flexibility and capability for the end user.

However, the arrival of the latest design now makes the new machine a more ergonomically feasible machine with the B-axis facility. The engineers at Tornos have integrated a positional B-axis rather than a fully interpolable design. By doing so, the B-axis sits on two fixation points, which makes it far more rigid and robust than competitor machines with just one fixation point.

The innovative design of the Swiss GT26 B-axis enables it to accommodate 2 x 4 rotating spindles with a spindle speed of up to 9000 rpm. Furthermore, the kinematics of the new Swiss GT26 provide the facility for 2 x 4 fixed front tool stations, ensuring that virtually any angle can be indexed or processed by the NC programs.

The B-axis machine tool design with a modular position can incorporate either a fourth rotating drilling station or a 'true' thread whirling head. This makes the new GT26 the ideal solution for the medical industry. This impressive new thread whirling configuration has a helical angle adjustment feature that can be fully controlled by the CNC control unit.

The new Swiss GT26 has a coolant system embedded in the B-axis and it can also be adapted to accept high frequency (HF) spindle units. This ensures the new B-axis configuration is effortlessly added to the work envelope without compromising the

operator access to the work area, which is particularly spacious and well lit with LED technology. The groundbreaking design of the latest GT26 has not only improved the capability of the machine but also made it more accessible from the rear of the machine.

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www.tornos.com

New compact drilling machine for profiles

HD-S, VERNET BEHRINGER's new compact drilling machine for profiles, was given its world premiere at EMO. The model has been inspired by the HD-X EVO drilling/ milling machine presented at last year's EuroBLECH. It immediately became THE reference in this category and will be positioned as an entry-level, particularly dedicated to locksmith and small- to medium-sized steel fabricators looking for a versatile machine with compact footprint.

The basic version includes three spindles to drill simultaneously the web and both flanges of H-beams, but also machine channels, angles, flats, as well as hollow sections (capacity 400 x 300 mm). The machine also comes with a powerful operating system allowing job programming on four faces.

Additional models have been designed to increase the versatility of the machine: powerful spindle motors for fast carbide drilling, unique clamping system with CNC-controlled x-axis with 150 mm stroke to ensure vibration-free milling operations on profiles (Long holes, openings etc.) exclusive v-scoring system for fast and precise scribing and automatic tool changer with four diameters/spindle.

The new HD-S line offers low running costs and is available with a wide range of infeed/outfeed loading and transport systems that can be installed in line with a high performance BEHRINGER band sawing machine for straight and mitre cuts.

Meanwhile, the new DG EVO1000 is a quick and cost-effective plate marking/ drilling machine. It offers all-in-one marking (v-scoring fast scribing or optional disk marking unit), fast carbide drilling (rotating speed up to 4,000 rpm), milling and deburring. The machine has been designed specifically to fulfil the demands of transmission line tower fabricators, where productivity and low running costs are key factors.

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Email: simon.smith@behringerltd.co.uk
www.behringerltd.co.uk

Javelin controls 10-million Sterimedix products a year

A company manufacturing 10-million instruments for ophthalmic surgery a year, manages its business operations with the Javelin production control system.
As well as providing Sterimedix with full traceability of each of its single-use needle and cannula products for eye surgery and non-surgical aesthetic procedures, Javelin tracks progress through the shop floor, while handling office work from sales order processing to costings and full business analysis.

Having used Javelin since 2006, Sterimedix now has around 20 licenses, and find the powerful new customer relationship management option in the latest release, Javelin 2015r1, particularly important. The new module focuses on converting opportunities with prospects and existing customers into sales orders. While previous releases have had basic functionality for recording contacts, a series of tasks and automated triggers in the new option provides the means to register all opportunities for additional work, and to follow it through.

Administration manager Nicky Cullen says that sample and brochure requests are now added into the CRM system and are automatically reminded to follow them up.

"We've also done a large mail shot and recorded the details within the CRM system, instead of keeping spreadsheets."

Based in Redditch, Worcestershire, Sterimedix is a legacy from when the area was the world centre of needle manufacturing, dating back to the 17th century. As the industry declined, only companies supplying niche markets remained in Redditch. One of those was Needle Industries Group's surgical division, which developed the single use ophthalmic cannula in the 1970s.

Sterimedix was founded at the end of 1989, and have created a full range of cannulas to support cataract surgery, and a large number of vitreoretinal instruments for operations at the back of the eye.

They also produce and supply a range of cannulas and needles to manufacturers of aesthetic fillers, who use them as delivery systems for their cosmetic facial fillers.

Chief executive Ronnie McFarlane explains that a standard needle has a sharp point, while cannulas have a rounded or blunt tip. Cannula may have up to eight side ports for either irrigation (fluid in) or aspiration (fluid and tissue out). A number of their products are soldered, or contain holes (side ports), which are produced using their Sodick EDM spark erosion machine. Other processes include grinding, surface treatments, tube manipulations in the form of angling, bending, flattening, and creating cutting edges. Couple that with the fact they export to around 60 countries, and, says Nicky Cullen, "it is easy to see why Javelin has become a vital part of our operation."

The multiple currencies capability within

the purchase order function is particularly useful. "We deal with suppliers from all over the world, and have Japanese Yen, US Dollars, Euros, and Swiss francs set up on the system. We also invoice many of our distributors in these currencies. All we have to do is periodically update the exchange rates," explains Nicky Cullen.

Shop floor data capture shows exactly where each works order is at any stage. "It records who's performed each process, the quantities that have been produced, and if any scrap is involved. It is also used to monitor all production from kitting components, through each production process, to final inspection, and putting into stock."

The sales office uses SFDC to give customers accurate delivery dates. "If we get an enquiry for a product that isn't in stock, we can see at a glance whether it is still being manufactured, packed or sterilised, or ready to be despatched." Up to 20 different operations are logged against some products, with just four or five for others.

And with nine SFDC terminals spread over the company's two neighbouring sites, Ronnie McFarlane says it also shows workforce efficiency. "We can see how quickly each operator performs each task, and identify training needs if required. We review our standard costs and the actual costs. By knowing what time an operator logs on and off we can see if we've got the timings right on each of the product routings."

Sterimedix is a certified ISO 9001 and ISO 13485 (medical device accreditation) company. Javelin provides instant product and component traceability, which is a requirement of these accreditations. Nicky Cullen says: "If we need to find where a particular batch has been sent to around the world we can now do that in about ten minutes. Before Javelin it would take several hours, as we were using batch stock cards, manual data entry and physically writing out individual works orders."

The company quickly adapted how they use sales order processing to their own specific needs. "We either enter the sales order and send our customer an acknowledgement or, if they prepay, we create a tentative sales order in Javelin so we've got something on the system. When entering the order, we enter the date the order needs to be despatched by and, on the customer's acknowledgement, we show the date it will arrive with them.

"Sales orders are entered in the sales office, and the despatch department prints a daily crystal report showing which orders need to be despatched that day."

MRP is run weekly, with the logistics manager reviewing all works and Purchase Orders that need to be raised, ensuring preferential purchase prices by amalgamating POs where possible.

The materials control function fully manages batches. "All Goods Received Notes are raised, and goods inward inspections are recorded here. We have a variety of inspection conditions for each and every part, which are detailed on the GRN when it is raised, so that our inspectors are aware of the conditions they are inspecting. The material goes into stock on a GRN number, and is then issued to, or kitted up to, a works order number. The unplanned issue and unplanned receipts function for stock adjustment also ensures we are in full control at all times."

Crystal reports are used extensively throughout the process. "We can obtain any information from Javelin in exactly the formats required. Crystal reports enable us to produce some extremely complicated reports."

Ronnie McFarlane also uses Javelin to analyse business performance. "It gives us a complete overview of our processes and the business as a whole."

With 50 employees and a turnover of around £6 m, Sterimedix was recently acquired by American ophthalmic specialists, Synergetics Inc. "It gives us the opportunity to develop our business on a stand-alone basis, but with the backing of a much larger operation," he says.

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Medical giant's success with first ever Tornos EvoDECO's

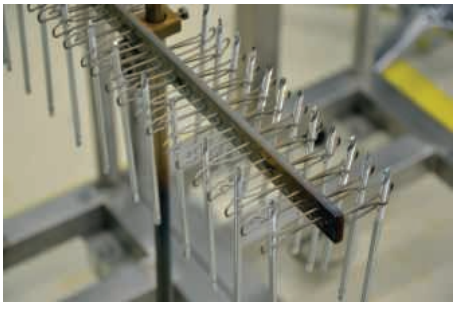
The Stryker Corporation is regarded as a global leader in the production of orthopaedic and general medical equipment. With an extensive range of products that include joint prostheses, trauma and vertebrae implants and surgical navigation systems, Stryker has over 25,000 employees in more than 100 countries. Regarded as the benchmark in its field, Stryker relies upon turning centres from Tornos for many of its global operations.

One production facility that forms part of the US $9 billion turnover company is the implant screw business in Selzach, Switzerland. The department for implant screws in Selzach has more than 32 Tornos machines with the latest additions being two new Tornos EvoDECO 20's. The immediate success of these machines has already resulted in an order for three more of these machines, which will contribute to the production of the millions of screws the medical specialist manufactures each year.

The two EvoDECO machines were purchased to produce parts that until their introduction had been manufactured on the Tornos Deco 20. They were also lined-up to create development parts. Stryker has an extremely comprehensive machine inventory, equipped with machines from a variety of well-known manufacturers, to ensure it has the right machine for every task.

Highlighting the reasons for producing particular parts on the Tornos Deco and EvoDECO, Roland Urben, the production manager for implant screws at Stryker says: "We constantly strive to select the most suitable machine for each part we produce, in terms of both technical and economic considerations. The Tornos machines are without question, the most precise in our machine inventory, which is why we use them for the most demanding parts. From an economic perspective the Tornos machines are currently very competitive as regards return on investment."

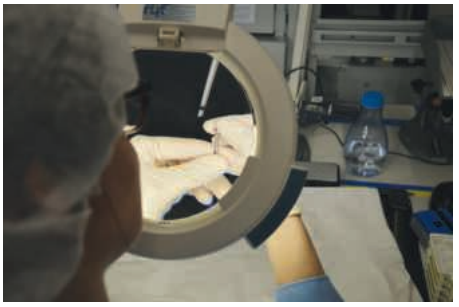
Since the launch of the first Deco machines in 1996, the TB-Deco software has made a name for itself in the sector. Commenting upon this, Roland Urben says: "There is a completely different philosophy behind it, which makes things somewhat difficult for beginners. However, once you master the software, it is a very efficient and easy-to-use tool''



The first two EvoDECO 20s ever

"Tornos supplied us with the first two EvoDECO ever made, and we were immediately able to work productively using the machines. The quick commissioning of the machines and the excellent service by Tornos cannot be emphasised enough," Roland Urben explains.

Even though established implant materials such as titanium and stainless steel are used to manufacture the screws, the challenges presented in terms of geometric and dimensional precision require machines whose performance can consistently keep up with requirements. Depending on the circumstances, Stryker have developed their own macros or turned to the specialists at Tornos. The final aim is always to use the machine to machine a complete workpiece.



Alongside its department for the production of surgical screws, Stryker also operates a centre for development and prototype manufacturing, which is able to rely on the services of an EvoDECO. "Thanks to the versatility and performance of the EvoDECO, particularly for milling and cutting, we were able to develop new screws and new processes. During the planning and development of new parts, we are engaged in a constant dialogue to ensure that we are able to deliver parts which precisely meet requirements. Furthermore, to make optimal use of the possibilities and capabilities of the machine, enabling us to optimise our production," states Roland Urben.

Reliability for production

Operators at Stryker work in shifts and the machines typically run around the clock for five or six days a week. Roland Urben is full of praise: "The EvoDECO is extremely reliable and robust, so we can implement small to medium-sized production runs, depending on the type of screw, without any concern. And when we need it, we know that we have a capable after-sales service we can rely on."

"In recent years, Tornos has been working constantly on improving its after-sales service, and we are now very satisfied with the results. Their reaction time is out-standing and the solutions they suggest are always suitable," concludes Roland Urben.

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Sodick AG40L on course to achieve ROI within 18 months

Sterimedix, one of the world's leading manufacturers of single use medical devices for ophthalmic surgery and non-surgical aesthetic procedures, has acquired a Sodick AG40L from Sodi-Tech EDM. This advanced die sink machine has enabled the company to improve the quality of its products, and generate significant cost reductions compared with the outsourced operation used previously. These savings put Sterimedix on course to achieve a payback within an impressive 18 months.

At its Redditch facility, Sterimedix manufactures a comprehensive range of cannula, hand-pieces and devices for all types of ophthalmic surgery and aesthetic procedures. The business has been built up over 25 years, and employs in excess of 50 people who generate an annual turnover of around £6 million. Approximately 80 percent of output is exported throughout the world.

"We started manufacturing cannula 21 years ago, gradually increasing our manufacturing capability ever since," explains Tom Parrott the company's head of technical operations. "Five years ago we relocated our operation to larger premises, and six months ago made the decision to rent additional premises nearby with the objective of creating an up to date manufacturing facility, with EDM machining at its core. We believed that by bringing EDM in-house, we would be able to take control of an important area of our production, introduce product improvements and generate cost reductions."

A comprehensive review of the EDM operation was undertaken by Sterimedix, where activities include the processing of stainless steel micro-bore tubing, typically with outside diameters ranging from 0.4 to 0.9 mm. These processes involve various operations such as welding, tube manipulation, swaging, porting and polishing. Porting is an operation that creates either single or multiple holes in the side walls of tubes.

"Previously our subcontractors ported tubes singly," says Tom Parrott. "In order to secure a return on the EDM investment, it was necessary to improve throughput significantly. This was achieved by working closely with the engineering team at Sodi-Tech."

Tom Parrott recalls that the Sodi-Tech team indicated the possibility of porting 40 tubes at a time. That indication is now a reality.

The selection of the Sodick AG40L EDM machine followed a number of visits to potential suppliers, with each one evaluated against a decision matrix. Largely as a result of its extensive support structure and the assistance given by the company's applications engineers, Sodi-Tech was identified as the preferred supplier.

"Sodi-Tech were proactive in arranging trial batches of components to prove the accuracy of the machine's capabilities, and in supplying names and addresses of existing users so that we could discuss their experiences with the machine," says Tom Parrott. "This ability to verify the performance of the machine pre-purchase, and an attractive offer within our budget, culminated in us taking delivery in December 2014."

Although the acquisition was a significant capital investment for a company the size of Sterimedix, it offered the opportunity to improve quality and achieve cost reductions.

"In the time since installation, Sodi-Tech has continued its support throughout the various validations that we needed to undertake, and we are on target to achieve payback within 18 months," confirms Tom Parrott.

The AG40L EDM incorporates a number of innovative features, including Sodick linear motors, which have a 10 year positioning accuracy guarantee, the latest no-flush EDM technology and energy saving circuits, zero electrode wear, and increased machining speeds. The XYZ travels are 400 x 300 x 270 mm respectively, with a 600 x 400 mm work table. The LN2 professional automatic programming system on the AG40L offers a wide variety of machining shape patterns and features, 'perfect active control' technology that enables simultaneous control of high speed electrical discharge, and axis movements through serial communication technology operating at 1 Gbit/sec.

According to Tom Parrott, one of the key requirements was that the EDM operation needed to be de-skilled from the operator's perspective. However, thanks to the impressive control and programming capabilities of the machine, and Sodi-Tech's applications expertise and specially designed fixtures, the operator only has to touch three buttons on the machine to make the process happen. "This is dream-like simplicity," he concludes.

Sodi-Tech EDM Ltd is the exclusive distributor of Sodick EDM products in the UK. A wide range of Sodick wire-cut and sink EDM machines are on display at the company's large showroom in Coventry, West Midlands. The site is easily accessed, sitting as it does at the hub of the midlands motorway network.

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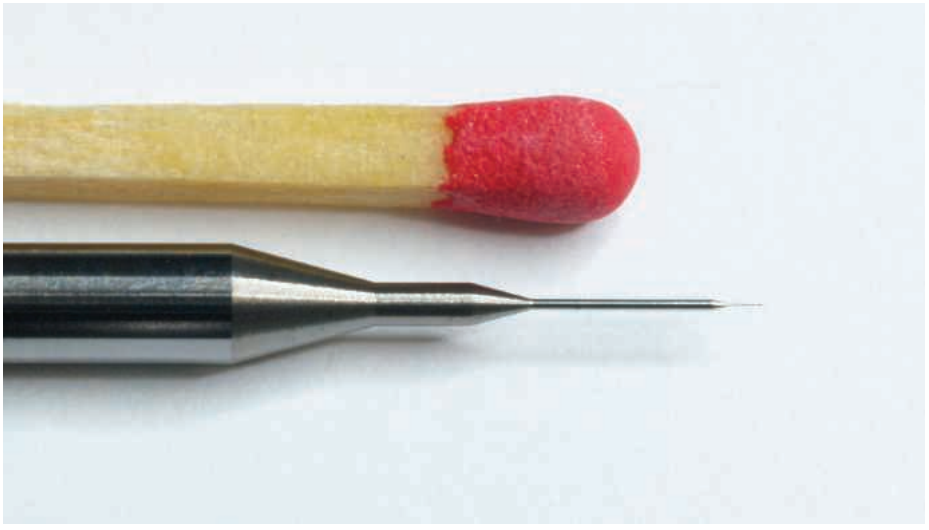
How easy it can be to measure in micrometres

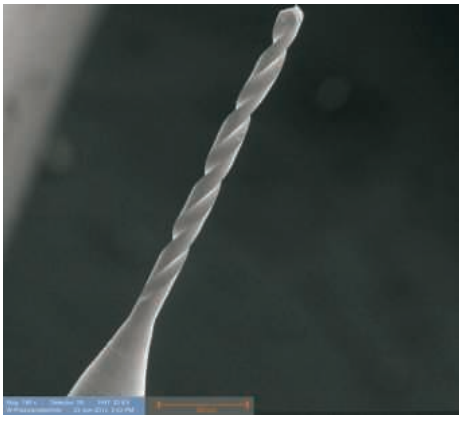
If you've never seen a 30 µm diameter drill don't worry, you would need a magnifying glass. Half the thickness of a human hair is just the scale that W Präzisionstechnik works on. High precision 5-axis milling machines produce the tiniest components with almost incredible accuracy. Laser-based measuring systems from Blum-Novotest are used for tool setting and breakage detection on these extremely sensitive tools.

Helmut Wandinger founded his company back in 1997 to produce machine components. He quickly made a name for himself thanks to his extremely accurate and small-scale milling work, such as production of micro-nozzles as small as 50 microns. Today, six employees work at W Präzisionstechnik and the machinery in use has expanded to a total of six 5-axis machines from Chiron, Mikron and Primacon.



Tools with 10µm in diameter

The range of products manufactured by this subcontractor are mainly for the electrical engineering and medical technology sectors. Apertures, nozzles and micro-mechanical components sit alongside custom-made products for university research facilities such as the renowned Fraunhofer Institute. A short time ago, Helmut Wandinger produced metal parts with several hundred recesses, each with a diameter of 30 microns; the ball cutter used had a diameter of just 10 microns. Even nozzle matrices with almost a thousand holes in the micrometer range are no problem for W Präzisionstechnik.



To maintain the micron precision, significant investment is required. The climate in the production shops is precisely controlled to 0.1 degree Kelvin and the machines are fitted with temperature sensors all the way to the base. If it is very cold outside, the machine base cools down when the machine is turned off. The machining centre then has to run empty for several hours until the entire system is once again at a uniform temperature level.

Helmut Wandinger recalls: "In the early days we had a window in the production shop and sunlight used to come through the shutters onto one of the machines. This beam of sunlight caused such significant temperature expansion that precision production was out of the question. We are often operating in tolerance ranges between two and three micrometres, not just for drilling, but for contour milling too."

All machines equipped with Blum laser measuring systems

Contactless tool measurement systems from Blum-Novotest are used on all the machines. Helmut Wandinger says: "At the beginning we calibrated the tools manually by touch, but even the slightest contact can destroy the tiny tool cutting edges or totally break off the tool, and we quickly moved over to laser systems." The Blum system initially arrived as part of a Chiron system and it impressed from day one.

As the LaserControl measurement systems have to be located in the working space in the machining centres, the optics need to be protected. Blum uses several methods to do this. On the one hand, the laser optics are mechanically protected by a shutter during machining. When the shutter opens for measurement, a sudden blast of air is released to clear the device of dirt and chips. During measurement, a stream of barrier air reliably protects the optics from contamination to guarantee excellent in-process reliability.

Focussed laser beam

Unlike other laser measurement systems, the laser beam on the Blum devices is focused, in other words the beam is extremely thin at a particular point between the laser transmitter and receiver. The models in the Nano NT series reach a beam thickness of just a few microns. On unfocused systems with a greater beam thickness, it is possible that the measuring system will "miss" the actual drill when determining the tool length and only detect the significantly thicker shaft. If these incorrect tool values are then used for milling, a tool breakage and a rejected workpiece are almost inevitable.

Reliable tool monitoring

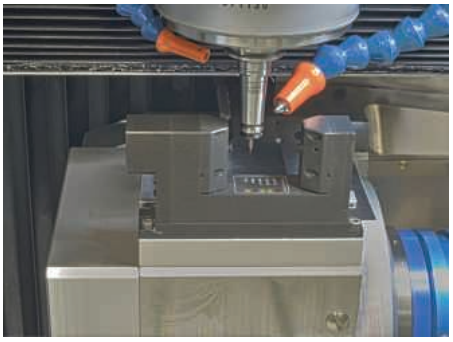
Tool breakage monitoring is also an important application for the Blum measuring systems. Between two machining cycles, the tool spindle briefly moves to the laser measurement system, which measures whether the drill is still in place. At 30,000

rpm, even a very minor resonance, such as a 2 micron imbalance, can cause a 100 micron drill to break, demonstrating how important breakage detection is.

Helmut Wandinger calls it 'total breakage'. In a worst case scenario, all of the downstream tools could also break as a result. The costs of a 'total breakage' ,but also of an individual broken tool, are far from negligible, as a single one of these highly sensitive tools can cost up to €250. In addition, the forces resulting from collision with the workpiece can also jeopardise the accuracy of the spindle.

Highest precision

For Helmut Wandinger, it is important that the laser measurement systems are fitted directly in the working space, ideally immediately adjacent to the tool holder. "This enables all influences, such as temperature-related expansion of the machine, to be measured and taken into account. The thermal expansion of the spindle and the tool fitting, as well as the speed-related displacement of the spindle, can also be compensated, which is essential when accuracy levels of less than ten microns are required."



The measurements that can only be carried out in the working space also include concentricity tests at operating speed. Sometimes it is not until the drill is being calibrated on the machine that incorrect labelling on the packaging is noticed. "You are trying to fathom why your 100 micron holes have a diameter of 120 microns, until you measure the tool diameter and identify the fact that the incorrect drills have actually been supplied," says Helmut Wandinger.

No scrap parts

"We are extremely satisfied with the laser measurement systems from Blum. Because the tools are measured directly in the machine, we can achieve a level of precision that is at the very limits of what is technically feasible. We have reached the limits of conventional measurement methods. The contactless measurement technology and extreme accuracy of the Blum tool measurement systems are the only way we can achieve these tolerances. In most cases, we can now make the very first part a good part, and this is thanks largely to the LaserControl equipment," concludes Helmut Wandinger.

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Lantek exceeds the quality requirements of the medical and surgical sector

The continual innovation of the software company, which leads the market in its sector, is the best ally of medical equipment and pharmaceutical furniture manufacturers

Building machinery, equipment and furniture for the medical, surgical and pharmaceutical sector is a true technological challenge for companies in the industry. The material has to meet strict standards for safety, quality, reliability, precision and hygiene. Most of the equipment, in one way or another, is in contact with patients and medical staff and is also, on many occasions, key to saving many lives. Manufactures in this sector are fully aware of these circumstances, and, for that reason, in recent years they have invested significant time and energy in R&D to improve their products. In this process of continuous improvement, they have found a significant ally in Lantek. With its software solutions for companies that produce pieces from sheet metal, tubes and profiles with any kind of cutting technology (laser, plasma, oxycut, water jet, shear) and punching, it has enabled a notable increase in the quality and safety parameters of the entire sector due, among other things, to the excellence of its CAD/CAM tools and their capacity to integrate with existing management systems.

Lantek offers powerful solutions in this field - Lantek Expert Punch and Lantek Expert Cut, two of the most sought-after systems in the medical and surgical industry. Lantek Expert Punch is a CAD/CAM system specially designed to automate the programming of CNC punching machines. It perfectly combines machines' technology and companies' programming and management needs. It also has an advanced interface that makes it easier and more efficient for users to program.

Lantek Expert gives companies in the medical and surgical sector a special advantage since it features excellent laser technology that offers extreme precision in cutting. Other notable features of Lantek Expert Cut are reduced lead-in management, lead-in with back down, custom piercing, flying cut, micro-joints and micro-welds, among other qualities that make it a perfect system in this field.

All Lantek Expert solutions are included in a single program, which in turn integrates perfectly with the business management program Lantek Integra, thus creating the widest range of CAD/CAM/ERP solutions in the sheet metal, profile and tube processing industry. It is also integrates into external ERPs.

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Innovations in combining machining methods

Sometimes established methods combined in new ways can bring huge advantages to the production process. In the case of face machining aluminium blocks and specifically cylinder heads in the automotive industry manufacturers often face the challenge to machine large numbers as cost-efficiently as possible while maintaining close quality parameters. Now a new tool innovation developed from two known machining methods addresses these challenges generating higher performance levels and eliminating burr formation problems.

Virtues of two different methods

Broaching is a well-established machining method for when precision results are needed. Properly used, surface broaching can be very effective in achieving tight tolerances and finishes and is used frequently in one-stroke operations where the tool is pulled or pushed. In rotary broaching, the tool is rotated and pressed into the workpiece, often to produce a shape. The principle of broaching is built on progressive, light depths-of-cut for each tooth, where the teeth are arranged in set sequence. Generally, a very productive, smooth method with a minimum of tool setting for rough to fine cuts in one pass.

Milling as machining method is, of course, as well established but far more flexible. These are rotary, multi-edge tools, using advanced indexable insert technology, available in many forms to perform a large variation of operations to produce flat or curved surfaces and various cavities, slots, edges, etc. Facemilling still dominates, where a uniform, axial cut is taken through the cutter rotating while being fed radially across the part, set to produce a certain chip thickness. A universal, productive method for roughing and finishing where some degree of tool setting is usually required.

Now modern cutting-tool technology has arrived at a stage where a unique combination of these two machining methods has been combined into one tool. With modern indexable insert technology, these two principle methods have been successfully sown together to improve the flat surface machining of aluminium alloy components, specifically cylinder tops or heads for the automotive industry. A completely new concept which minimises setting of cutting edges, allows high machining rates, generates high finishes to close tolerances, without the typical pronounced aluminium burr formation. An almost-too-good-to-be true solution to a long-standing, often problematic operation, performed in huge numbers.

The M5B90 cutter has been developed to combine the two methods giving the total axial (broaching) progression (the conventional axial depth-of-cut in milling) during one revolution of the cutter being fed as in milling. A set of, say ten inserts, have been positioned so as to each have a certain rise per tooth where the axial depth-of-cut is distributed over the teeth in the cutter. Typically each insert might take 0.1 mm with a radial advance (feed per edge) of typically 2 mm. This then determines the chip of each edge. Each insert can be seen as a roughing edge complemented by one wider edge which acts as a wiper to generate the surface finish and tolerances.

This facing cutter concept is now revolutionising the face machining of aluminium parts where parts are becoming increasingly challenging and can be demanding for manufacturers to achieve cost-effective solutions. Material specifications are becoming more and more severe with higher engine operating temperatures, increased combustion pressure with higher mechanical stresses involved and tops/heads are designed with more multi-portal layouts as part of advances in the combustion system. Alloys also vary according to the designated fuel type. So, the demands on the aluminium alloys escalate, affecting alloys, casting, heat treatment and subsequently machinability.

The only realistic tool material solution today is advanced polycrystalline diamond (PCD) insert grades. Being extremely hard, more than twice as hard as cemented carbide, only inserts in PCD can provide satisfactory tool lives and maintain quality limits over a long time. In fact, tool life is often five times or more compared to carbide and other materials when machining alloys with Silicone inclusions (Si 8 - 18 percent), that make parts extremely abrasive on tools. Also, the right PCD insert has good mechanical properties, making them less sensitive to impact loads in interrupted cuts. Grades can also be engineered to best suit the alloy

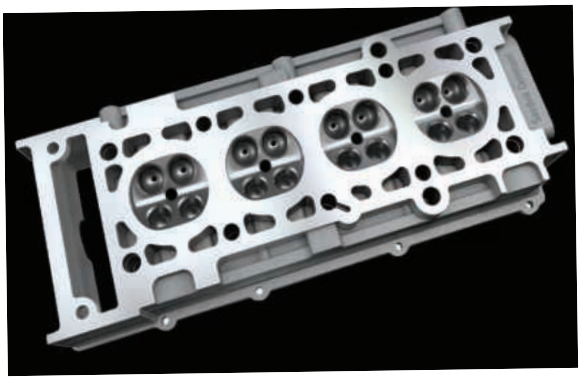
characteristics and inserts designed with optimal micro geometry in order to make the cutter capable of extremely high cutting speeds during a reliable process.

M5B90 cutter

The M5B90 cutter for face machining of aluminium blocks is a relatively close-pitch cutter, needing fewer inserts, which is engineered for optimisation of each application. Tangentially mounted PCD-inserts are held in a steel ring with fixed insert pockets, mounted on an aluminium cutter body. The cutting action is combined broaching/milling where the best of both worlds have been exploited to bring this manufacturing area forward. The cutter is engineered to a few application factors, such as: ideal cutter diameter, any adjoining protrusins on the part, spindle revolutions, machining allowance/depth-of-cut and table feed. Only one wiper/finishing insert is required and no individual insert presetting is required, in spite of the fact that this is a high precision cutter. The tangential inserts in this relatively close pitch cutter have been designed and positioned so as to provide accuracy, lower cutting forces and a smooth cutting process. Generated finishes and tolerances are well within automotive requirements.

The machining challenges in this area are thus increasing and manufacturers of aluminium parts have a number of requirements on which the development of the M5B90 has been based: long, consistent tool life, high, reliable productivity, simple, quick tool setting, good swarf control, full control of all part quality parameters, liminated or extensively minimised burr formation.

It is this last factor that has increasingly become a stumbling block for operations to be satisfactory from a modern machining perspective. Burrs have been a dominating problem in this area. The cutting action in many aluminium facemills tend to have unsatisfactory chip formation and direction and when the cutter reaches the end of cut, and exits the milled face, often leave a burr which with time grows to an unacceptable degree and thus prematurely ending the tool life of the inserts in the cutter. Many cutters then need insert changing and extensive cutting edge setting. Machine stoppages are frequent and tool handling extensive and costly.



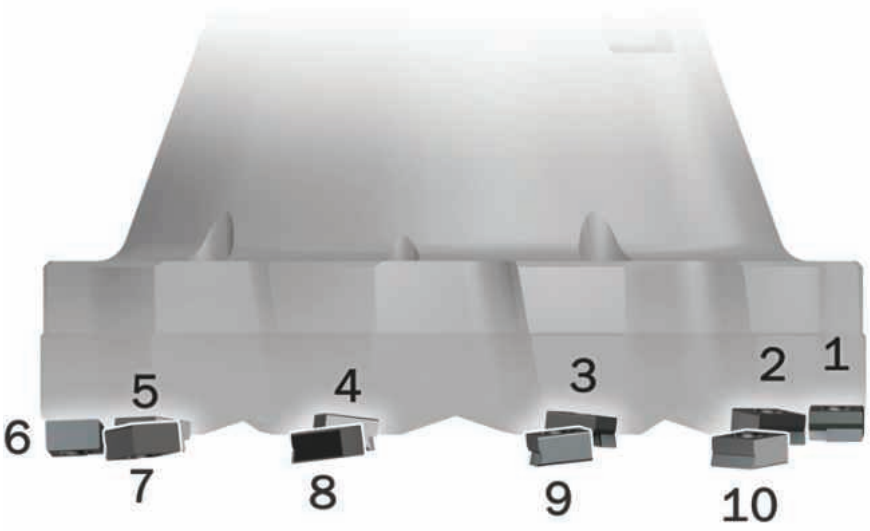
What can be achieved with an innovative approach to two machining methods?

The M5B90 has been adopted by a number of manufacturers of aluminium blocks. Automotive cylinder heads/tops have proved to be an ideal application area, where the tool has provided considerable advantages.

In one case, a 315 mm diameter cutter was needed, having eleven teeth including one wiper insert with no tool adjustment necessary. PCD insert grades were selected, one grade-type for the ten roughing inserts and one for the wiper to optimise performance for the machining allowance of 0.7 mm. The cutting speed applied is 2,500 m/min and the feed per revolution is 2.2 mm. The feed per tooth works out at 0.19 mm and the table feed 5,600 mm per minute. The aluminium alloys have silicone content values between 6 and 9.5 percent. The previously used milling cutter for aluminium facing in the transfer-line averaged 12,000 blocks before tool changing became necessary because of unsatisfactory, extensive burr formation on the face and surface edges. The M5B90 cutter machined over 40,000 blocks per setup, providing a measured flatness amounting to a third of the tolerance for the surface.

In another application involving blocks of a 9 percent silicone content aluminium alloy, a 160 mm diameter M5B90 cutter was applied with a cutting speed of 1,800 m/min, table feed of 7,000 mm/min, feed per revolution of 2 mm. The measured surface quality is Rmax 2.40, Wt 1.70, Rz 2.20 and Ra 0.35. This is well within the manufacturer`s demands throughout a considerably longer tool life than the milling cutter replaced. A major advantage was that almost 150 hours were saved in production during the first year, thanks just to the new tool changing.

In another automotive application, excessive burr formation was eliminated on the aluminium cylinder heads that are faced. Tool life was tripled and the tendency for any burr formation minimised and costly stoppages could be eliminated with the CoroMill5B90 cutter, thanks to much quicker tool changes in-house. A bonus was the elimination of costly tool handling: previously, the tool had to be sent back to tool supplier for setting every time the tool needed new inserts. Also, instead of 30 inserts in the previous cutter, there are only 12 in the M5B90 cutter.



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Taiwanese compressor company returns to Holroyd

When one of Taiwan's leading air and refrigeration compressor specialists required superior rotor milling capability, there was really only one choice: a 3EX-R rotor production centre from UK-based Holroyd Precision Ltd.

Having invested in several rotor milling and grinding machines over recent years from Holroyd, a Precision Technologies Group company, the customer knew they would receive both the technology and support necessary to meet their demanding manufacturing strategies.

Installed in August 2015, the 3EX-R has equipped the customer with class-leading performance and reliability for rough milling rotor blanks of up to 350 mm (13 inches) in diameter.

Appreciating uncompromising quality

"We were incredibly pleased to secure repeat business from such a longstanding and valued customer," comments PTG Group business development director, Neil Jones. "Over recent years, we have supplied them with three rotor milling machines, a TG350 grinding machine and a tool management centre. Being more than familiar with the uncompromising standards offered by our machinery, they did not wish to take a chance on performance, repeatability and productivity by selecting an alternative solution."

EX Series: globally-recognised capabilities

Holroyd EX CNC rotor production centres have earned global acclaim for their high speed, high precision and unrivalled build quality. Standard EX rotor production centres can cut rotor or worm helix profiles in blanks of as little as 50 mm (2 inches) to 850 mm (33 inches) in diameter. Where 850 mm diameter milling is not sufficient, Holroyd also build a bespoke model designed for blanks exceeding one metre in diameter.

3EX-R rotor production centres, such as that chosen by the Taiwanese customer, provide superior levels of power and torque for accelerated performance when milling larger diameter components. To further improve their performance, 3EX-R centres also incorporate an enhanced workhead and cutter head.

Class-leading performance

All Holroyd EX high speed rotor production centres offer class-leading performance and repeatability. This is due in no small part to advanced technology and includes the company's development of on-machine probing, and dry milling techniques. The flexibility of the EX Series also means all derivatives are exceptionally efficient at producing complex components with helical screw profiles, as well as gear parts such as worm shafts.

Cutting accuracy

Holroyd EX centres cut a full-depth groove by traversing the cutting tool through the material at the relevant helix angle, whilst at the same time rotating the component in the 'C' axis. Accurate synchronisation between the axes is maintained via CNC, with digital drive technology controlling all axis movements. The cutting head is able to remove so much material in one step because the majority of heat generated is transferred to the swarf chips. These are then removed from inside the centre by means of a conveyor system.

Power and precision

Holroyd milling machines have always been designed with immense rigidity and power for the rough cutting operation, and with the accuracy and precision required for finish profile milling. This technique is the preferred process when machining steep sided profiles and also for components that are manufactured in materials such as aluminium.

PTG. The first name in precision

Incorporating the brands of Holroyd, Binns & Berry, Crawford Swift and Holroyd Precision Components, PTG has established itself at the forefront of high precision machine tool design, build and supply. The PTG range includes ultra precision grinding machines for rotor, thread and gear operations; rotor milling machines; heavy duty lathes; deep hole boring machines; friction stir welding machines and special purpose machine tools for the manufacture of precision components. Industrial sectors served range from aerospace, medical and mould tool & die to marine, power generation, mining, oil & gas, steel, high end and heavy automotive.

Holroyd Precision receives a Queen's award for enterprise

Holroyd Precision Ltd is celebrating being named as a winner of the Queen's Award for Enterprise, the UK's highest accolade for business success.

Holroyd received the award for International Trade, having achieved year-on-year growth in exports. It was given in recognition of the company's achievements in developing new markets globally, creating new machine tool technologies with particular focus on those markets, and for Holroyd's considerable successes in exporting its highly specialised grinding and milling machines to organisations around the world. Over the last few months alone, Holroyd has secured export orders worth in excess of £7 million.

2015 marks the 50th anniversary of the Queen's Awards. Holroyd therefore joins an elite group of companies that have been recognised as deserving winners in what is a particularly significant year.

"We are extremely proud and honoured to have won what is clearly the UK's most prestigious business award," comments Holroyd Precision's chief executive officer, Dr Tony Bannan. "In securing the award, we were able to demonstrate significant growth in overseas trade, something that was achieved in spite of challenging global trading conditions. I would like to thank our staff here in Rochdale and our various support teams globally for the hard work and dedication that has made winning the Queen's Award possible."

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MAPAL expands milling cutter range for lightweight materials

The trend towards lightweight construction is resulting in the constant development of new materials with a very wide range of properties which create new demands also on the machining. Tool manufacturers have to react here, as reliable machining is no longer assured with the normal geometries. MAPAL has now expanded its extensive milling cutter product range that has been well-established on the market for many years to include four new high-performance milling cutters.

Thermoplastics are widely used in the automotive sector, for example in the production of instrument panels. Due to its low melting temperature, the material requires special tool geometries in order to avoid melting. MAPAL has therefore developed the solid carbide OptiMill-Thermoplastic with very sharp cutting edges for the reliable machining of thermoplastics. Its special geometry not only ensures the optimum discharge of the chips, but also minimises the build-up of heat during milling. MAPAL also offers the OptiMill-Thermoplastic-FR for the

machining of special fibre-reinforced thermoplastics, predominantly carbon fibres. As carbon fibres are very abrasive, the solid carbide milling cutter is diamond coated. Thanks to the arrangement of the cutting edges around the circumference, the fibres are cut off cleanly without burr formation.

The solid carbide end milling cutter, OptiMill-Composite-UD, was added to the milling cutter range for the milling of parts made from fibre composite materials such as CFRP that are either very thin or are difficult to machine. Thanks to its cutting edge geometry, it achieves a simultaneous pulling and pushing cut with compression effect in the part, thus preventing delaminations and fibre projections. The milling cutter is diamond coated for a long tool life.

Due to their low weight and flexural strength, honeycomb structures are used for support and reinforcement between the inner and outer skin of aircraft or in the vanes of wind energy converters. The difficulty when machining this very light material is its comb structure. MAPAL has developed the OptiMill-Honeycomb to meet the special demands of machining honeycombs. The eight-bladed solid carbide end milling cutter has extremely sharp cutting edges, a helix angle of 15 degrees and very fine serration. The new OptiMill-Honeycomb reliably machines even honeycombs with a wide variety of outer layers or with fillings.

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New generation of ecoMill V series

DMG MORI is presenting the new generation of the ecoMill V series with the highest accuracy of 6 µm in its class and cutting performance of 12,000 rpm as standard.

DMG MORI has been defining a standard for users of powerful entry-level machines for many years with the ECOLINE product range. This also applies to the new generation of the ecoMill V series. The range consists of a series of machining centres that can accommodate workpieces weighing 600 kg, 800 kg and 1000 kg respectively in the form of the ecoMill 600 V, ecoMill 800 V and ecoMill 1100 V with the traverse X-axis of 600 mm, 800 mm and 1,100 mm accordingly to the machines size. The highlight of the latest ecoMill V series is the completely revised ECOLINE New Design, by means of which DMG MORI has improved working ergonomics and achieved a high degree of value stability. The new 19" DMG MORI Multi-Touch SLIMline® Control with SIEMENS is the next step for innovative and modern user interface.

The performance of the three models in the ecoMill V series is outstanding, even in the standard version: the spindle operates at a speed of 12,000 rpm and with torque of 119 Nm in these models. The rapid traverse speed in all axis is 30 m/min. The highest positioning accuracy in its class is 6 µm (without direct scales), due to direct coupling in X / Y, no belt drive for no backlash. The tool changing time achieves up to 1.3 seconds. In total, the cutting speed has been increased by up to 25 percent. An optimised machine structure also increases stability during machining, and a high degree of manufacturing flexibility is provided in the standard version by having 30 tool pockets in the tool magazine.

All three ecoMill V models impress with their compact design and large working areas. They have a Y-axis travel distance of 560 mm and room for components with a maximum workpiece weight of 600 kg in the case of the ecoMill 600 V, 800 kg in the case of the ecoMill 800 V and 1000 kg in the case of the ecoMill 1,100 V.

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Citizen reinvents its 32 mm L-Series

An established manufacturing industry 'icon' in CNC sliding head turn-mill centre technology has been reinvented by Citizen Machinery by adopting modular specification and build techniques to further enhance the high productivity capable Citizen Cincom L-Series. The new machine is initially available in three versions of L32 ranging from a five-axis machine with 30 tool capacity to an ultra-flexible, seven-axis version having 40 tools plus the incorporation of a +90 to -45 degree rotary B-axis able to carry driven tools and additional Y2-axis feed to the back tool post.

Available through Citizen Machinery UK, this mid-range sliding head variant between the R01 (1 mm capacity) and M32 (range topping) machine types has been widely accepted for its world leading flexibility when machining complex component features in the main and back spindle. Now the new generation L32, having taken modularity to a new level, introduces optional 'function' packages for the gang, opposite and back toolposts.

The machine has a bar capacity of 32 mm as standard and 35+ mm as an option with the added advantage of the incorporation of Citizen's popular introduction in 2013 of an exchangeable guide bush to non-guide bush configuration. This capability has the benefit of adding greater economics to material usage on short length components and takes less than 30 minutes to carry out the exchange.

The three new versions, L32-VIII, L32-X, and L32-XII all feature new wider access to the working zone through a rising hinged operator door plus additional rear access. Main and sub-spindles have 7.5 kW and 3.7 kW motors respectively, providing 8,000 revs/min and driven tool speeds are 6,000 revs/min from 1 kW motors.

An important gain in machine tailoring, giving extra flexibility from the modular function package strategy, means the availability of a 'picking list' according to the version of the machine selected to suit production requirements. For instance, the L32 Type-VIII has optional driven tool capability on the opposite toolpost, Types -X and -XII also have a Y2-axis and driven tools on the back toolpost plus driven tool capability as standard on the opposite toolpost while Type-XII also incorporates driven tools on the B-axis gang toolpost.

For the rotating B-axis on the gang toolpost there are four double-ended driven tools using the 135 degree (+98 to -45 degree) of swivel movement. On the opposite toolpost there is a choice of packages with U150B having four fixed tools (Type –VIII) or U121B with three driven tools (Type-X and XII). The back toolpost has two options with, U151B having four driven and one fixed tool position or, when incorporating the Y2 axis, U12B can also accommodate nine double-decked tools, four fixed or driven in the upper row and five fixed in the lower row.

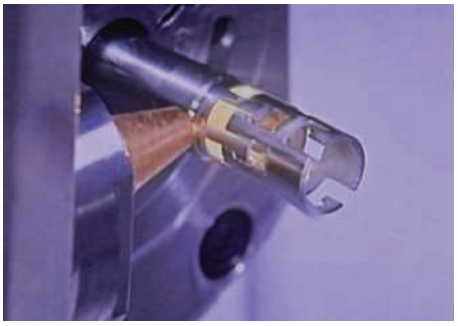
With such a large capacity for cutting tools, significant positioning and overlapping of slideway movement could become a disadvantage when achieving competitive cycle times so here, Citizen has countered by increasing rapid positioning rates to 32 m/min with fast acceleration in XI, YI, X2, Z2 and even Y2, which is fitted to the L32–X and –XII versions of the machine.

With high unattended running now common with Citizen CNC sliding head machines, as an option, an integrated component unloading conveyor can be fitted in combination with a long part device. In addition, and as part of the Citizen Cincom control software and following the company's ECO strategy, power consumption can be viewed for individual workpieces.

Integrated laser cutting breakthrough

Believed to be a world-first by Citizen Machinery is the full integration of laser

processing into the turn-milling cycle of a CNC sliding head lathe enabling near endless possibilities for the creation of geometric shapes in the walls of tubular bar material. The development opens the metal cutting production process to producing burr-free holes as small as 0.2 mm diameter, produce features such as spiral cuts with 0.025 mm kerf width and maintain consistent and accurate radii less than 0.1 mm in corners of slots without any risk of tool wear or breakage. These can also be produced at a far faster rate than can be achieved by a separate EDM process, for instance.



Due for European launch in 2016, the Citizen Cincom breakthrough opens new design concepts, in particular in sectors such as medical, electronic and micro industries where the speedy, accurate, highly flexible and reliable Citizen CNC sliding head machine can be integrated with the gains and advantages of non-contact laser operations.

Laser cutting can offer quick and accurate 'swarfless' cutting, the minimisation of any chance of material deflection due to cutting force reaction and the highly precise production of special shapes and forms.

The nitrogen gas assisted 1,500 watt laser head with an air purge to seal and clear the lens was mounted in the gang tool slide of a Citizen L20E machine in order to be incorporated into the cutting cycle to produce a complete medical stent in a single cycle.

The laser system had a separate control and amplifier unit connected to the machine's Cincom control. The medical component was machined out of 304 stainless steel tube that was fed through a special bar feed unit that allowed standard soluble oil coolant to be pumped at 70 bar pressure through the bore of the material. This flow of pressurised coolant ensured a cool cutting condition, washed away any melted material and localised the laser beam to the 1 mm wall thickness of the component as it was fed at a cutting rate of between 300 and 400 mm/min.

Different types of laser oscillators can be used such as fibre laser and CO_2 with the selection based on the workpiece material and thickness. The assisted gas is discharged coaxially with the laser beam and blows away any melted material. The system also comprises a CCD integrated camera for optical viewing and to aid alignment, fine X and Y axis beam adjustment and alignment to the laser is possible with 50 to 80 mm adjustment for the focal length.

The stent component, produced from 10 mm diameter tube, was turned, faced and three flats milled equi-spaced halfway down its length. The laser then produced along and around the periphery, using C-axis rotation, a series of diamond shaped features, a bayonet fitting at the front end, cut a complex logo plus a series of holes as fine as 0.12 mm diameter and a number of close dimensioned slots. These slots, at the rear of the component were laser cut so that they intertwined with other slots created in the main body of the part. As a result, once the component was finished, it enabled one end to slide axially over a short distance while still being connected to the main body.

World showcase takes turning technology into another age

More than 3,000 people including 150 from Europe attended CFA85, the Citizen Machinery factory automation showcase staged at the company headquarters and machine tool manufacturing facility at Karuizawa in Japan. The showcase was part of the company's celebration of its 100,000th machine installation (It is currently building up to 650 machines a month) and gave visitors the opportunity to see the latest product launches and insights to near future technology developments.

New developments from the CNC sliding head turn-mill range included the introduction of common platforms for one Citizen A20, the L20 family and one for the L32 family of machine models. This added a modular capability to accept guide and non-guide bush plus a whole range of standard units such as spindles and tool holding devices. The next generation of the compact micro-machining capable R01 (1 mm capacity) and R04 (4 mm capacity) was launched with 16 variants having up to 6-axes and 20,000 revs/min fast accelerating spindles. The RD version was also launched with two/four spindle configurations.

Expanding the success of over 50 installations in Japan, the MC20 turning cell which sits between a CNC lathe and multi-spindle machine, but having greater flexibility and up to 10 axes, was shown as an extended family of twin, three and four spindle variants having fixed and driven tools. Each is capable of autoloading parts from 'near net shape' source material.

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Adnet steps up to a twin-turret

Adnet Precision Engineering, based in Brockworth, Gloucestershire, has invested in a Nakamura-Tome WT150 twin-spindle, twin-turret turning centre that will complement its existing sliding head capacity and allow it to produce complex milled and turned components in a single operation.

The centre has been supplied by the Engineering Technology Group (ETG) based in Southam, the UK distributor for Nakamura-Tome.

Founded in 1990 by managing director Adrian Day, Adnet specialises in the manufacture of ultra high-quality components for industries demanding a high standard of precision and finish. Customers include major companies in the fields of metrology, scientific instruments, aerospace, pharmaceuticals and food manufacture.

The company first moved into CNC machining around 18 years ago, investing in a number of Cincinnati turning and machining centres and built on this with the addition of a Maier sliding head machine with a capacity from 5 to 32 mm.

In the last couple of years it became clear to Adrian Day that he needed to complement this sliding head capacity with a machine that could work on larger components and offer more milling and drilling power for materials such as stainless steels.

This led to the decision to invest in the WT150 machine, which has a 65 mm through-spindle bar capacity and can hold 12 driven tools in each of its dodecahedral turrets, with a driven tool machining power of up to 5.5 kW.

Adrian Day says: "We had sliding head capacity up to 32 mm, but that didn't really give us the power to drill large holes in stainless. The Nakamura can take bar work up to 65 mm and so it gives us a much larger capacity and is a much more powerful machine that will let us get turned and milled parts off in one operation."

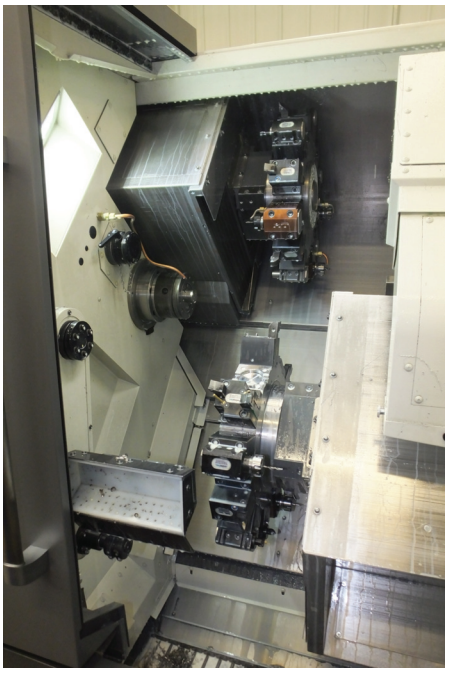
One component that is destined for the new machine is a disk-shaped component that is part of a piece of seismology equipment. At present this is made using two turning operations and three milling operations, and is also engraved on the milling machines.

Another recent example is a turned and milled handle that is finish machined from bar in under 3 minutes. Previously this would have to be scheduled across three machines.

"We bought the machine with an 8" chuck on the main spindle and a 6" chuck on the second spindle so we have the option of doing these disk-type components. We will turn, mill, face off and then do the other side, wrapping five operations in one. We can also be much more flexible on the twin-turret Nakamura, and the Y-axis allows us to machine off-centre holes," says Adrian Day.

"By doing that all in one go it will be much quicker. It will also allow us to take work off our ageing milling machines."

He adds that the machine will bring other benefits too. It is always difficult to get staff. We have taken on two apprentices over the past 18 months, but this is another way of tackling the problem. Putting multiple operations together on one machine means we don't have to find the staff to carry out all those other operations.



One of the first jobs done on the new machine was a knurled nut with a drilled and tapped hole through the side that is destined for the pharmaceutical industry. This is now being made in one from bar.

Adrian Day explains the benefits that have come from putting this on the WT150: "The hole in the side was always a problem in the past as we had to put in a deburring operation and a polishing operation to remove the burrs on the internal bore. Now it is all done on the same machine we can simply re-machine the bore so there are no burrs and we have eliminated an extra operation.

"With this new capacity we are now looking to take on more medium-volume, high-complexity work in demanding markets. With this new machine we are stepping up in size and stepping up in quality and precision," concludes Adrian Day.

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MILLS CNC

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Great news for manufacturers.

Not so good for our competitors!

Doosan DNM Mark II verticals now available with the Siemens 828D Control.

Component manufacturers who preferred their machine tools to have Siemens Controls have been at a disadvantage.

Because, no matter how much they wanted a Doosan DNM Mark II vertical machining centre with a Siemens Control...none were available. And that meant they probably had to make do with a machine that wasn't necessarily their first choice.

We're sorry about that.

But the good news is that Doosan DNM Mark II machines are now available from Mills CNC with the Siemens 828D Control and on-board Shopmill conversational programming software. We're confident that this will go down well with manufacturers...but less so perhaps with our competitors.

New Kafo high speed double column machining centres

The UK is a world leader in the mouldmaking industry. Unrivalled in the ability to produce high quality mould tools in short lead-times, the nation's toolrooms can now call upon the high performance and build quality of P/PV high speed double column machining centres from Kao Fong Machinery (KAFO) to help boost competitive gain even further. Available in the UK from sole agent, TDT Technology, the new machines offer a price-to-performance ratio that is difficult to match without compromising on build quality.

Quality was the premium factor for KAFO when designing the P/PV series. A box structure machine bed along with a one-piece cast iron column and cross beam configured in a thermally symmetric structure help assure rigidity and high speed performance. Cutting rates of up to 20 m/min can be achieved in all axes, along with rapid traverse rates of up to 48 m/min on the P/PV-16 model. All machine castings are stress relieved and age-treated for long term precision without deformation.

The HSK A63 spindle is also designed for precision and rigidity with an enlarged diameter of 70 mm and ceramic bearing. This helps control vibration and thermal displacement to ensure repeatable accuracy over the lifetime of the machine. Spindle speed options are available up to 24,000 rpm (30 kW power, 125 Nm torque).

As standard, the range comes with linear scales and closed loop control system on all three axes to facilitate precision positioning of ±0.015 mm (with repeatability of ±0.003), as well as high performance contour machining. Control is via the latest Siemens 840D SL.

All axes adopt high speed, high precision servo motors to deliver impressive acceleration and deceleration, while the Z-axis also features a dual-screw servo drive system (without balance weight), which shortens the distance from the track surface to the spindle centre to support impressive metalcutting capabilities. To help deliver further competitive gain for mouldmakers, high precision, preloaded, roller-type linear guideways ensure superior dynamics and extended service life.

The axes on KAFO P/PV machining centres are driven by precision-ground preloaded and pre-tensioned double-anchored ballscrews featuring a central cooling system to minimise thermal expansion and enhance positioning accuracy. The series is available in four models, with travels ranging from 1100 to 2300 mm in the X-axis, 600 to 1300 mm in Y-, and 460 to 700 mm in Z-. A robust design means workpieces weighing up to 5000 kg can be accommodated on the two largest models.

Included as standard are a coolant unit, spindle blast, spindle oil mist lubrication, air and coolant gun, auto power-off, RS232 and USB interfaces, chip conveyor and rigid tapping. Optionally, customers can add automatic tool length and diameter measurement, automatic workpiece measurement and an oil/mist collector.

TDT Technology is the exclusive United Kingdom and Ireland sales and service distributor for the KAFO line of machine tools, manufactured by the Taiwan based Kao Fong Machinery Co Ltd. Founded in 1968, KAFO produce all kinds of Mills, vertical milling machine and vertical, horizontal and double column bridge/gantry type of machining centre. So whether your expertise is in general machining, heavy machining, production, die/mould or aerospace applications engineering, CAD/CAM programming or metal-cutting machine tools, you can be sure that the extensive line up of KAFO machining centres will include a solution that will certainly meet your demands and requirements.

TDT Technology Ltd, headquartered in Rugby, Warwickshire, is the official UK & Ireland importer, sales distributer and service agent for numerous machine tool sector related manufacturers. Carefully selected technical partners from around the world produce some of the most technologically advanced products and CNC systems available including the very latest machine tools, together with a comprehensive range of ancillary equipment plus machine guarding and machinery safety systems to comply with all PUWER 1998 regulation issues.

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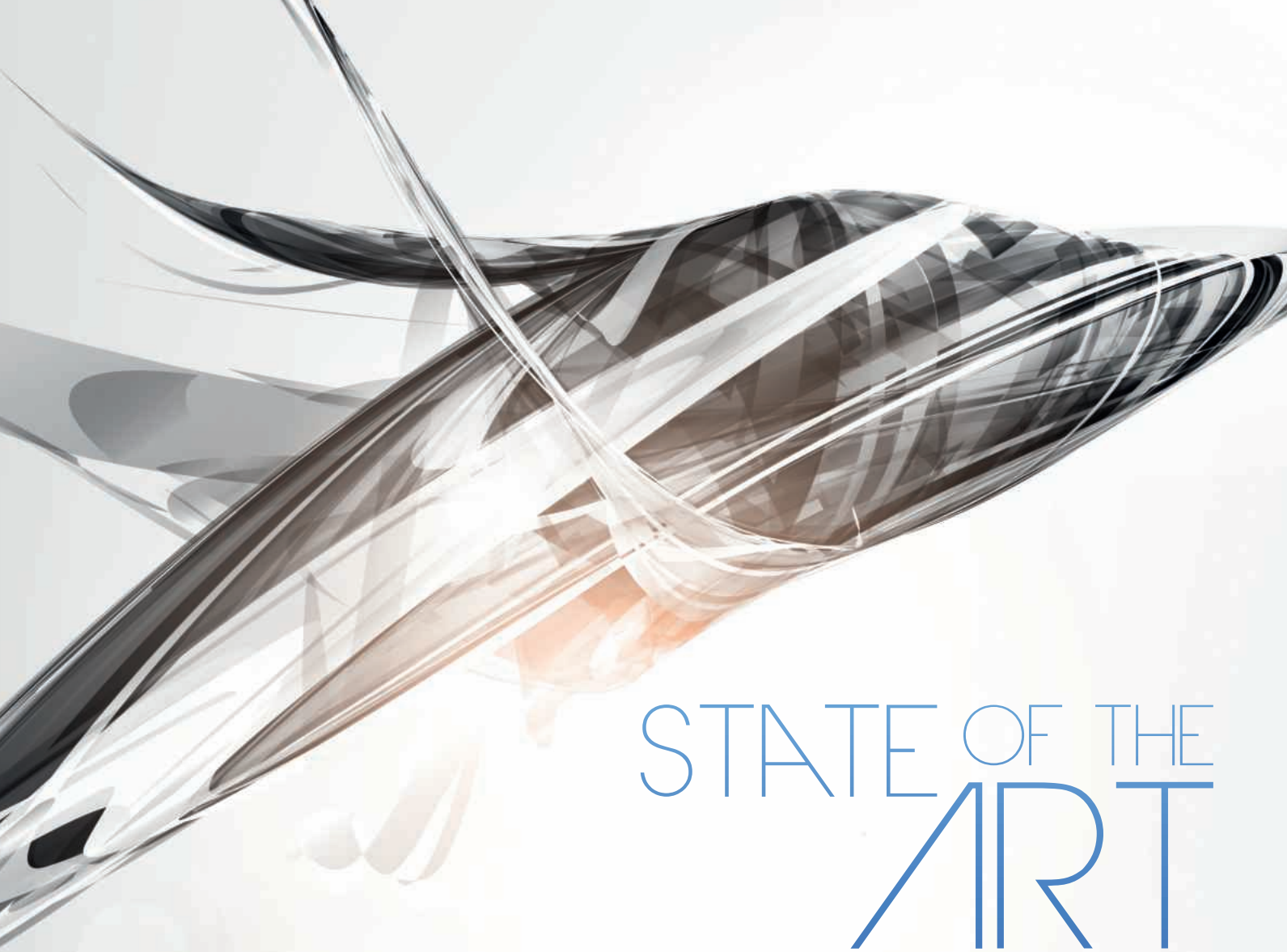

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Crossrail

Empire strikes back with a new CMZ machine

To maintain its growth levels that have been impressive since the company opened its doors for business just eight years ago, Empire Manufacturing Ltd has just invested in a new TA20 YS gantry loaded CNC turning centre from CMZ machinery. The company opened its doors for business with just three sliding head turning centres from Star, however the ongoing growth and the addition of the CMZ machine has now enabled the Hertfordshire company to enter new markets.

With a broad customer base that includes clients in the aerospace, electronics, automotive and horological industry through to the perfume, cosmetic, leisure and entertainment sector, Hoddesdon based Empire was continually faced with demands for parts beyond the capacity limits of its sliding head machines.

As Stuart Wade, director at Empire Manufacturing Ltd says: "We already had customers that were enquiring with regards to larger work than what we could handle on our sliding head lathes. Until the purchase of the CMZ, we had to subcontract that work out to external suppliers. Once the enquiries became regular enough, we decided we wanted to do the work in-house to cut out potential problems with quality or lead time."

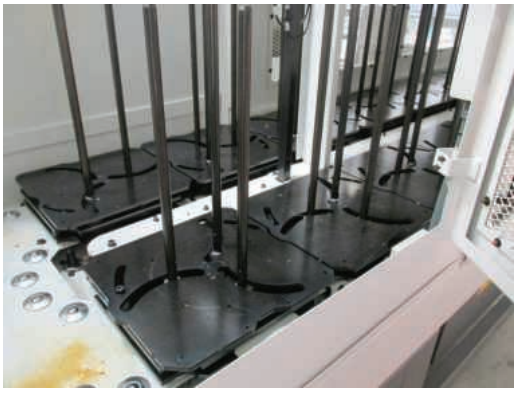
To bring this work in-house, Empire has just purchased a TA20 YS gantry loaded turning centre from CMZ. Stuart Wade says: "It's a new market for us producing parts with a fixed head machine and there was obviously a learning curve that was a little daunting, but the type of work we do on the CMZ is similar to the work on the Star machines. We do a lot of high volume lights-out machining of parts that frequently require complex turning and milling processes."

Giving the reasoning as to why Empire invested in the CMZ, Stuart Wade says: "We were looking for a flexible and highly productive solution that matched the philosophy of our business. With the bar feeder and gantry loading system, the CMZ clearly fills that demand. Additionally, the fully integrated machine utilises a Fanuc control system like our sliding head lathes, so training and setting up the machine is easy."

"The programming is very similar to our sliders as the G-codes are pretty much the same. So, the transition from the sliding head machines to the CMZ was simplified, which wouldn't have been the case if we opted for a machine with a different control unit."

As well as having the gantry loading facility, the CMZ TA20 YS also has an FMB Turbo 5-55 bar feeding unit at the opposite end of the machine. For high production runs, the CMZ TA20-YS integrates a high capacity barfeed and at the other end, the machine has a stacker with 14 pallets to accept a plentiful supply of billets. Whilst running, the CMZ has in-cycle tool monitoring, coolant monitoring and the machine is eco-friendly as it will shut down when the production run is completed.

For Empire, this astounding flexibility enables the company to run the CMZ lights out and when staff arrive in the morning there will either be a full pallet or bin of parts whilst the machine is still running. As the machine has an integrated spindle motor with 22 kW and 15 kW on the sub-spindle, the subcontractor can conduct heavy machining of its component list that will include anything from plastic, stainless steel , inconel, brass, mild steel, hardened steels and much more,



To support the heavy duty cutting of parts, the CMZ has a tool turret with 12 stations that can be driven with the powerful 12 kW motor whilst the Y-axis is particularly generous with a travel of -50 to 60mm. The high speed and power of the driven tooling has been a revelation for manufacturers like Empire that conduct high speed machining of light alloys whilst the torque is also suitable for heavier and more robust metal cutting.

Stuart Wade concludes: "We are extremely pleased with the machine and the support that has been provided by CMZ."

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New Mitsubishi EDM series from HK

The EDM marketplace can now be significantly more productive and flexible with the latest Mitsubishi MV2400-SZ+ that is now available from HK Technologies. This latest innovation is now capable of submerged cutting up to 425 mm deep with full support of the best auto threading system on the market today.

Incorporating the latest advancements in machine construction and power supply technology, the MV2400-SZ+ is sure to revolutionise EDM machining and increase shop floor productivity. For example, the new Mitsubishi MV2400-S Z+ introduces an impressive annealing length of over 350 mm that makes this system capable of threading the maximum workpiece height and also providing a realistic opportunity for the customer to thread through the gap. This is an innovative new feature for end users that may need to recover broken wire.

The MV2400-SZ+ also features a new, non-contact cylindrical drive system and the M700 series control with a particularly large 15-inch touch-screen. This Windows based control is both intuitive and user friendly and with the 15 inch screen, it improves operation for the end user.

From an operational cost perspective, the new MV2400-SZ+ introduces Mitsubishi's new V350-V AEII Power Supply DMX-S (Digital Matrix Sensor) that shapes each spark to reduce electrode wear considerably. This feature reduces consumable costs for the customer whilst reducing the power consumption and subsequent running costs of the machine.

From a productivity standpoint, the MV2400-SZ+ introduces the World's first linear shaft drive system XY (UV-Z use ball screws), which delivers smooth, highly controllable movements and unparalleled precision levels. With unbeatable speed and precision. This new technology also requires less electricity. Coupled with this, the MV2400-SZ+ has an 'all fibre optic' servo control that permits internal communication that is four times faster than conventional systems.

All this technology is built upon a fine grain 'Dianite' casting material that guarantees the one-piece hardened 4-sided stainless work table is mounted on the most robust and precise high quality base available.

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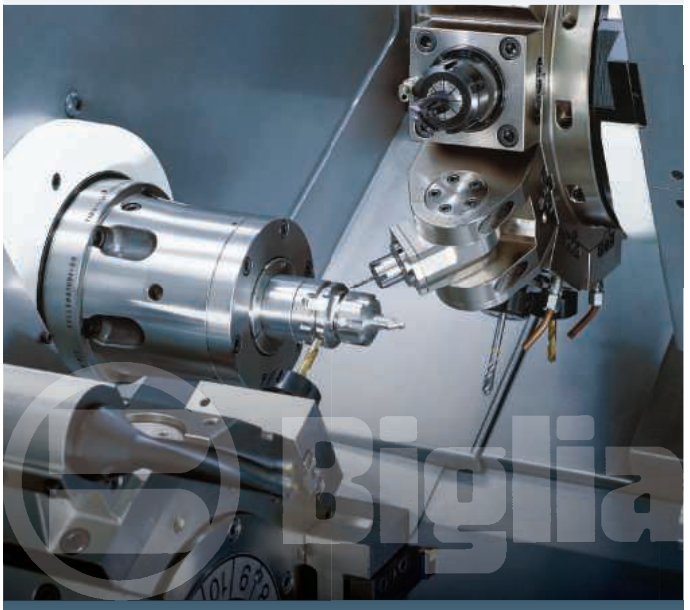

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Italian lathe is ideal for machining plastics

Many subcontractors offer to machine components from metal as well as plastics, but they are different disciplines and it is difficult to excel at both. Plastic materials present special challenges, not least the long, stringy swarf that is normally produced during turning. Chip breaking is almost impossible, whatever tooling is used, except when machining acetals with relatively high feeds and speeds.

Italian CNC lathe builder, Biglia, represented in the UK by Whitehouse Machine Tools, offers a range of lathes that alleviates the difficulty. It does this by allowing the sub-spindle to be offset downwards and to the front of the machine by up to 115 mm, instead of being collinear with the main spindle.

The main reason for the manufacturer providing this feature is to eliminate the possibility of interference between the two (or three) turrets when they are working simultaneously in certain configurations. However, Nylaplas Engineering in Nailsea, near Bristol, has identified an additional advantage that results from offsetting the spindles.

While a plastic component is being turned in the main spindle the coils of swarf, which tend to move horizontally to the right before falling away, do not interfere with simultaneous machining of a parted-off component in the sub-spindle, as it is lower and more importantly offset horizontally. If the spindles are on the same level, the right hand machining area invariably becomes covered in swarf from the left hand side, which is detrimental to second-operation machining, compromising both accuracy and surface finish.

On the other hand, the ability to move the sub-spindle back in line with the main spindle is also useful, as it allows the former's B-axis to come into play. A long component can be gripped and rotated at both ends to avoid it deflecting during turning and cross milling or drilling.

Nylaplas is a global supplier of thermoplastic machined components and stock shapes to the nuclear, defence, aerospace, pharmaceutical and semiconductor industries. Technical director, Andrew Bassett, who runs the family-owned firm with brother James and mother Leonora said: "We discovered this feature of Biglia lathes by chance when we installed our first model 15 years ago.

"It had two C-axis spindles served by two turrets with live tooling and proved very productive in the manufacture of a long-running job involving turning molybdenum disulphide-filled nylon bar into carriage rollers for a rail motion system. We needed to produce 120,000 of the 48 mm diameter by 25 mm long components per year.

"We only had a single-spindle, single-turret CNC lathe on the shop floor at the time and we needed a more productive machine with in-cycle second-operation capability to lower the unit manufacturing cost and keep the work from going to China."

The Biglia lathe managed to secure the carriage roller contract for Nylaplas, taking 15 seconds out of what would have been a 63-second cycle on the single-spindle lathe. Driven tooling was not needed for this particular job, but has proved valuable for a multiplicity of other work that has been put onto the machine. A majority has been in the 30 to 70 mm diameter range, with smaller components generally being produced on sliding-head lathes.

Tolerances can be as tight as 0.05 mm, but a couple of degrees Celsius variation can

cause some engineering and advanced thermoplastics to expand or contract by more than that, so temperature management is crucial. One-hit machining is a major advantage in this respect, as a component stays in one environment during the entire manufacturing process. Most plastics are annealed before machining to stress-relieve them and help stabilise the materials.

When the time came in March 2015 to replace the Biglia lathe, Andrew Bassett reviewed the market again but decided in favour of another of the Italian-built turning centres. A 10-axis B465 T2 Y2 equipped with an LNS Quick Load Servo short bar magazine was duly installed.

As the machine's designation implies, it has the added advantage of Y-axis CNC movement on both turrets, each of which has 12 live stations. Coincidentally, when the company was visited, a batch of cube-shaped components was being produced from round plastic bar that could not have been machined for the required price had the lathe been purchased without the optional Y axes.

An additional improvement on the latest Biglia lathe is a twin conveyor arrangement

on the output side, rather than a parts catcher. A component emerging from the machine on one conveyor is directed onto a second conveyor at right angles that carries it into a waiting container at the front. However, by the time a bar remnant arrives on the first conveyor, the control has already told the second conveyor to reverse direction so that the bar end is routed to another container at the rear.

Control is provided by a Fanuc 31i-B CNC system, which allows programming on the shop floor of even quite intricate parts as well as 3D simulation. More complex components are programmed offline using a OneCNC CAD/CAM package.

Andrew Bassett concludes: "The Biglia machine's design has proved ideal for machining our plastic materials, including laminates, PTFEs and PEEKs, for a decade and a half and continues to do so.

"The technical input from Whitehouse has proved useful as well. For instance, they showed us how to adapt a peck-drilling macro in the control to generate a chip breaking action. It is good for roughing plastics, especially when carrying out balanced turning using a tool in both turrets.

"We have also been impressed with their back-up. The staff are attentive and provide a prompt and personal service. Notable is the standard of training they provide.

"As an added bonus, they managed to find a buyer in Italy for our second-hand Biglia lathe, which despite being 15 years old was in good condition, as it had only worked a single shift cutting plastics."

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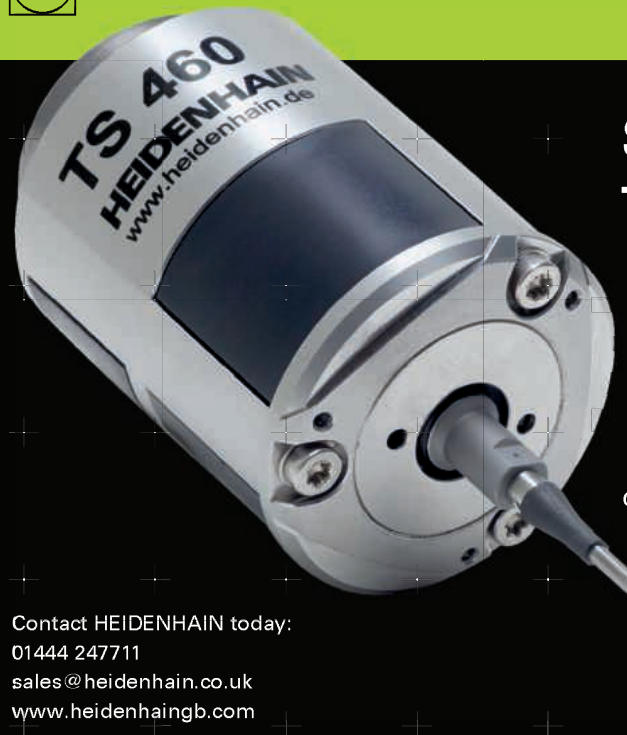

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XYZ helps subcontractor see the light

Moving from the relative security of employment to setting up their own subcontract machining business was in some ways a leap of faith for father and son team Ken and Matt Barnard at MKB Precision Engineering. However, their faith was repaid, with the business being busy almost from the outset. Work came from a wide range of customers, but the business has developed a particular niche supplying machined parts for the specialist lighting sector, that supplies bespoke lighting systems to theatres, factories, offices and high-end domestic customers.

With just the two of them directly involved in the business, the initial expenditure on machinery was quite straightforward, buying a second-hand manual lathe, a grinding machine, and an XYZ manual mill. However, they also knew that they would need a CNC vertical machining centre to complement these manual machines. "Having worked in a number of engineering companies I had a wide experience of machines and control systems, but my preference was for one particular combination, but for whatever reason it was proving difficult to locate the right machine, so we had to widen the search. The one control that neither Matt or I had any experience of was Siemens, but during a visit to MACH we talked to XYZ Machine Tools and the simplicity of the Siemens control system was an eye opener," says Ken Barnard.

Having seen the Siemens control on an XYZ 710 VMC, Ken and Matt asked for a demonstration down at XYZ's Waltham Abbey showroom, which took place on a Saturday morning, as that was the only time the pair could spare. "We only went for a fresh look and a one-to-one demonstration," says Matt Barnard, "but we ended up placing the order there and then, with XYZ arranging a very competitive finance package for us to make the process that much easier." With the machine delivered and installed the pair then needed training on the efficient use of the control, this was done on-site at their premises, again due to them being busy and not able to spare the time away from the business. What particularly pleased the pair was after this initial training they weren't forgotten about and continued to receive ad-hoc visits from XYZ's applications engineer Russell, when he was in the area, who passed on additional tips.

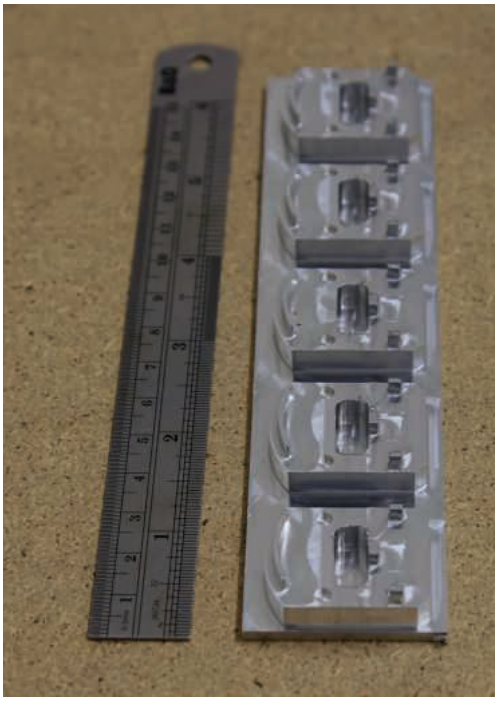
"The first XYZ machine was a revelation and, as we saw it, would suit the business for the next three years as we steadily expanded our customer base. However, within 18 months business was such that we needed a second machine as we had won a large contract to support a customer on a major theatre lighting project. The choice of another XYZ 710 VMC was pretty straightforward, but we needed it quickly, which wasn't a problem for XYZ," says Ken Barnard. "The machine was promised on a two week delivery and on the morning it was due we received a phone call from the delivery team, saying it was on its way, three hours later it was being unloaded and put in position, 90 minutes after that the service team had installed it and by the following morning we were cutting metal. The whole process was tremendous."

So, now with a machine each to operate

Ken and Matt Barnard continue to develop their business which offers services from prototype machining through to batch production in a wide range of materials, as well as working with customers to develop products for manufacture and refining the machining process for maximum efficiency.

They make full use of the machine's 20 hp, 8000 revs/min, BT 40, spindle and 760 mm by 430 mm table size and the Siemens 828D ShopMill Control with JobShop concept making programming straightforward on even the most complex parts thanks to the easy to understand prompts that help to plan the machining operations, with the control taking care of all of the coding in the background.

"We pride ourselves in working with customers to ensure that they get what they want when they want it. This is why it was so refreshing to find a machine tool supplier that operates on the same principles. An example of the service level from XYZ was when we had a power cut and one of the machines was mid-toolchange. I called to request a service visit, as that is what my past experience said I needed, along with the bill to go with it. However, I was told to take the phone to the machine, and was talked through the reset procedure, without any fuss at all, saving valuable time and money. For a small business like ours, service at this level is invaluable," concludes Ken Barnard.



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Feeding on success with PSL Datatrack

Barfeed manufacturer Hydrafeed of Milton Keynes also runs a major subcontract engineering business. With a vast range of products and services, managing the manufacturing and administration processes represented a major challenge. This has been solved with the implementation of PSL Datatrack software.

Hydrafeed's barfeed systems are usually sold as a package with new CNC turning centres or directly to companies looking to increase production capacity. Engineering subcontracting work is provided to a diverse range of companies in different industries. When current owner Martyn Page, took control of the company in 2012, he recognised that a major overhaul of Hydrafeed's production administration procedures was needed.

PSL Datatrack software fitted in well with Hydrafeed's business model as it is designed for small to medium sized engineering companies. The focus was initially on the subcontracting business and the software was rolled out to the manufacture and assembly of the barfeeders. It helps to avoid unnecessary overproduction, reduces administration, records and values, the actual time taken for manufacture and creates a history of when parts are made, on which machine and by which person.

Major improvements have resulted in the speed of order placing, raising enquiries, material allocations, traceability and the generation of certificates, vital to ISO and aerospace requirements. The history of materials used has led to improved reporting for supply monitoring, more accurate stock records and enables the company to give better information to suppliers when negotiating prices. Furthermore, when an order is repeated all the historical data is available, saving further on administration time and effort.

"PSL Datatrack is making Hydrafeed more efficient, competitive and professional, "says Martyn Page. "We are in a position to win more engineering subcontract work and continue to expand our barfeed operation, confident in the knowledge that PSL Datatrack will allow us to cope as it can be adapted easily to new requirements."

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Modular system for direct workpiece clamping

Minimal batch sizes, high requirements for precision and complex geometries, applications such as those that occur in tool and mould making have always been complex and demanding. Especially for this purpose SCHUNK, the competence leader for clamping technology and gripping systems, has now developed a new modular system for direct workpiece clamping. In the production of single parts and small batches this system can become an important piece in the puzzle for more productivity and cost effectiveness. Modular clamping columns enable direct clamping of molding plates, free-form parts and other workpieces on the machine table within seconds, without additional clamping devices and therefore without interfering contours. The clamping pillars guarantee collision-free processes, a defined clamping situation, and a reliable simulation of the machining. In addition, changes in the workpiece can be implemented quickly due to the high precision of this clamping solution.

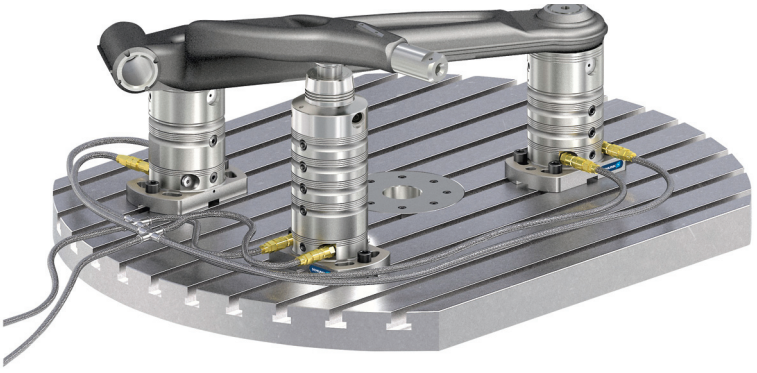
Variable height

The modular system consists of VERO-S WDB base modules for the ma-hine table, VERO-S WDN clamping modules (ø 99 mm), and freely combinable VERO-S WDS stacking modules. The latter have a standard-ised height of 30 mm and 50 mm, to allow fine graduations of 10 mm in the height of the clamping columns starting at a height of 80 mm, without the need for special solutions. The connections between the single modules are designed for high machining parameters, with a very high pull-in force of up to 25,000 N. All that is needed to operate them is an Allen key. To ensure distortion-free workholding, height differences can be compensated by a

steplessly adjustable, hydraulically clamped VERO-S WDA compensation element.

High precision

All interfaces feature scope-free taper centring, which ensures a repeat accuracy of 0.005 mm between the single components. An integrated air feed-through allows actuation of the clamping modules and monitoring of the presence of a workpiece, without the need for an external media feed-through. The actual workpiece clamping takes place in an energy-neutral process by means of spring force with self-locking and form-fit clamping. The workpieces themselves remain securely clamped even if the pressure in the air system should suddenly drop. A pneumatic system pressure of 6 bar is sufficient for opening the clamping modules. Regardless of the diameter of the clamping pillars, standard VERO-S SPx 40 clamping pins are used. For a longer life and increased process reliability, all functional parts such as the base body and slide assemblies are made of hardened stainless steel, are absolutely corrosion-resistant, and very easy to clean.



Superior clamping and gripping

SCHUNK GmbH & Co. KG of Lauffen/Neckar is a German family-owned company and global player all in one. The company was founded in 1945 by Friedrich Schunk as a mechanical workshop, and has developed under the leadership of Heinz-Dieter Schunk to a leading company for clamping technology and griping systems. Today, the company is run by the third generation siblings Henrik A. Schunk and Kristina I. Schunk. More than 2,500 employees in 8 plants, and 30 directly owned subsidiaries and distribution partners in more than 50 countries all over the world ensure an intensive market presence. The annual turnover in 2014 amounted to 325

million euros. With 11,000 standard components SCHUNK offers the world's largest assortment of clamping technology and gripping systems and with 2,500 SCHUNK grippers the largest product range of standard grippers. The complete program of gripping systems comprises more than 4,000 components. Its customer base includes a who's who of mechanical engineering, robotics, automation and assembly handling, and all the renowned automotive brands and their suppliers. Since 2012, the goalkeeper legend Jens Lehmann has acted as brand ambassador for precise gripping and concentrated, safe holding in the SCHUNK team.

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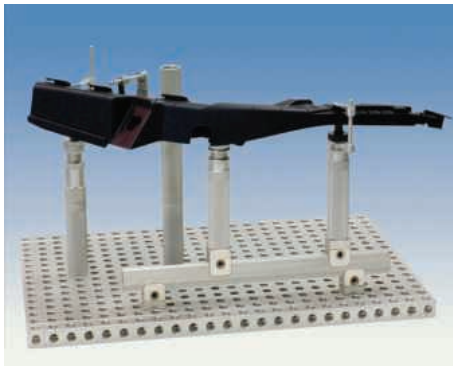
Infinite workholding solutions for component measurement

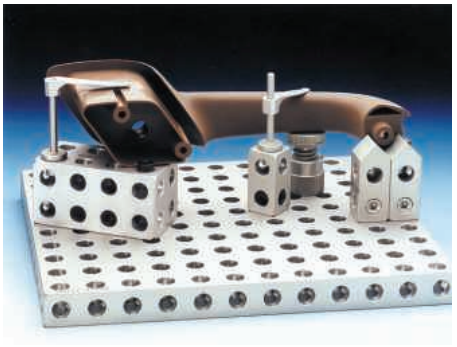
Workholding of components from the simplest geometry to the most complex imaginable part has now been simplified by Thame Workholding with its new Alufix modular fixturing system.

Developed for use on CMM's and measuring fixtures, checking gauges, assembly or welding fixtures, the new Alufix range is the ideal solution for manufacturers conducting design projects and producing R+D and prototype parts where product development changes are commonplace.

Manufactured from high-tensile aluminium, this modular system is available in six sizes that can be combined with each other to permit clamping operations on the most challenging of parts. The potential for the Alufix is almost infinite with base plates, bars, struts, blocks, clamps, screws, connectors and much more, all having the ability to interconnect to create the clamping structure that you require.

Once the customer has built and used the appropriate clamping device, it can be disassembled and the individual components can be used for new assemblies. The bars and base plates that form the construction of the desired clamping set are available in a vast array of sizes to suit the need of the end user. These bars and base plates are provided in grid dimensions of 16, 25, 40 and 50 mm with centralised hole diameters of 8, 12.5, 20 and 25 mm. This creates an exceptional level of flexibility whereby the customer can specify module grid sizes to support the clamping of the smallest of parts that require low clamping forces through to extremely large or heavy parts and structures that demand a robust solution.





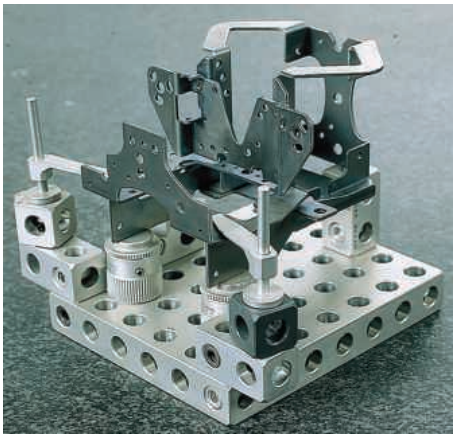
The Alufix line guarantees precision clamping of all components regardless of material type, dimensions and geometries with a lightweight but stable solution that is not restricted by workpiece weight or size limits. Furthermore, the Alufix range enables the end user to combine various system sizes, and when it's all disassembled, it requires minimal storage space. If customers are restricted on storage space, Thame can supply a range of workstation storage solutions for the Alufix. With the Alufix line being corrosion free, long lasting and maintenance free, these storage cabinets enable the customer to neatly store the individual Alufix elements for future re-use.

Thame offers efficiency on a plate

Now available from Thame-based workholding and fixturing specialist, Thame Workholding, the Lang Quick-Point multi-clamping system is the latest addition to the company's modular zero-point clamping system that can be retrofitted to almost all machine tool's table, making it a perfect solution for time saving change-over of vices, fixtures and workpieces.

The new mechanical, multi-clamping grid plate system allows up to four vices or fixtures per plate to be clamped and released using only one actuation screw, making it possible to reduce and divide setup time by a factor of four, increasing the ease of operations. The various ways to equip the machine table by aligning different sized grid plates is almost unlimited and the plates work in any orientation. This will help machine shops achieve maximum space and flexibility on the bed or table of any machining centre or milling machine.

Two grid plate sizes are available with an array of four by four or two by four locations, measuring 384 by 384 and 192 by 384 mm respectively. The Quick-Point plates can be placed in any configuration on the machine tool's bed or table to provide multiple locations for fixtures and direct component location, as well as the fitting of the Lang Makro-Grip system that requires just 3 mm of clamping depth on a square or rectangular workpiece to provide maximum holding power at minimum clamping force. Advantages include material savings due to minimal wastage and unrestricted access for five-face machining that facilitates the use of short cutting tools.



Sales director, Maurice Day says: "The new Quick-Point multi-clamping grid plate system will increase the flexibility of any machining centre, as the worktable effectively becomes a large zero-point reference. At just 27 mm high it is one of the lowest systems in the world, which minimises the reduction in the distance between the spindle nose and the workpiece. With exceptional positional repeatability and accuracy the system can drive up manufacturing efficiency with less time spent loading and unloading more parts can be machined per hour."

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Hainbuch extends its grip on turned parts

To increase the clamping power placed upon turned parts, Hainbuch has now launched its impressive new TOPlus range of chucks. For customers that may already be using high-end solutions such as the Hainbuch SPANNTOP range, the

revolutionary new TOPlus provides 25 percent more holding power.

The R&D department at Hainbuch has developed a novel new innovation that permits 25 percent higher clamping forces whilst utilising the same clamping cylinder that is used to actuate the market leading SPANNTOP range of chucks. The TOPlus incorporates a pyramid arrangement of glide surfaces to make this possible. The clamping head rests with full-surface contact in the TOPlus chuck body. This even applies with large workpiece tolerances.

In addition, this geometry ensures the TOPlus line is significantly less sensitive to contamination than previous chuck/clamping head solutions. This enables the TOPlus to provide an unbeatable concentric precision of 0.015 mm for chuck sizes up to 100 m bar capacity. For raw materials, cast and forged parts and also fine-particle non-ferrous metals such as brass, the new TOPlus excels. With all-round optimised values, the TOPlus is an ideal partner for modern manufacturing strategies and state-of-the-art machine

tools. Additional benefits of the TOPlus include the elimination of radial displacement between clamping head and chuck body, which makes it resistant to contamination. Furthermore, the chuck incorporates vibration damping technology that also enables the end user to improve surface finishes and precision levels.

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Stable clamping for thermoplastics

The Roemheld M-TECS 130 magnetic clamping system has outstanding power concentration that makes it stronger than any comparable magnetic plates. Stable up to 130 °C, the system has been designed specifically for the temperature range used within the thermoplastics processing industry.

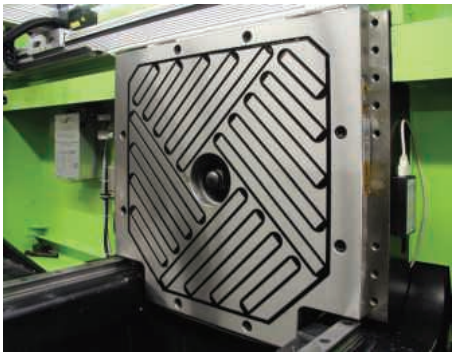
The secret of the power concentration of the M-TECS 130 magnetic clamping system lies in its long pole design, which is based on a double-magnet technique. The magnetic poles enable the system to build up a clamping force of between 5 and 12 kg/cm^2.

M-TECS magnetic clamping enables injection moulds to be changed quickly and easily, without the need for retooling. The even distribution of the clamping force over the clamping surface ensures tool wear is considerably reduced, which lowers tool maintenance costs. As there are no moving parts, the system is also virtually maintenance free. Applications range from the processing of large workpieces to small batch runs. The M-TECS system is ideal for retrofitting into existing production environments. Roemheld is committed to researching and developing products designed to meet not only the demands and expectations of today's discerning buyer, but also emerging markets and applications. Through continued improvement of products and services, the Roemheld Group intends to remain an innovator at the forefront of technology providing 'All your workholding needs from a single source'.

Clamping in seconds with Roemheld magnetic technology

Roemheld's tried and tested magnetic clamping technology enables die changing on automatic punching machines and presses to be carried out in minutes, thanks to clamping times of just two to three seconds. As a result, the M-TECS range is ideal for the decreasing small batch sizes and increasing variety of workpieces that the sheet metal and plastic processing industries need.

This flexible, universally applicable magnetic clamping system also means that no standardisation of dies is required. While



clamping times of between two and three seconds are resulting in decreased downtime, reduced setup costs and higher productivity.

The Roemheld M-TECS magnetic clamping system also makes clamping in hard to reach places simple. The full-surface clamping force ensures clamping with almost no distortion ensuring in improved product quality and reduced wear of dies. This, in turn, means reduced maintenance costs and machine downtime.

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WNT migrates Dragonskin coating to rotating tools

Since the introduction of the Dragonskin coating for indexable cutting inserts, the advantages of WNT's innovative coating technology have become apparent, with customer feedback highlighting significant increases in tool life due to less wear and a strong performance. It was a logical move, therefore, to take the next step and also coat rotating tools with Dragonskin technology, the universal WTX-Uni solid carbide drill series is the first recipient.

The development and introduction of the Dragonskin coating technology has enabled unprecedented levels of performance for indexable milling and turning systems and WNT is now applying those benefits to its drilling systems, which are being upgraded with this extremely hard and almost impenetrable surface coating. The WTX-Uni drill is the first to receive this treatment as it is one of the most popular universally applicable drills in the WNT product range. "Thanks to this special coating, the WTX-Uni will perform even better and, it can be used at a significantly higher cutting data. In test results the at WNT's Technical Centre in Kempten we found that the tool life increased by up to 40 percent, exceeding our highest expectations," says WNT's product manager, Wolfgang Schneider.

The WTX-Uni with Dragonskin coating was well received recently when it was unveiled during a customer event co-hosted by WNT Germany and its partner DMG MORI. A practical demonstration of the new WTX-Uni enabled customers to see the unique performance of the drill in action for the first time and the reaction was extremely positive.

While the visual appearance of the Dragonskin coating with its gold colouration is obvious, it is at the microscopic level where the coating is even more impressive. The combination of the Dragonskin coating, carbide substrate and drill geometry deliver tremendous resilience and high levels of wear protection that allow for elevated cutting speeds and elongated tool life, making the WTX-Uni drills ideal for applications where high speed and process security are a priority.

As the name implies the WTX-Uni has a wide application range across steel, stainless steel and cast iron components and is available in a diameter range of 3 - 25 mm with three standard shank styles available (HA, HB, HE).

"With these features the WTX-Uni drill is a true all-rounder that will fulfil the highest demands of industry. With the addition of the Dragonskin coating the WTX-Uni easily outperforms its predecessor, with longer tool life and improved performance and in line with WNT's drive to reduce manufacturing costs for its customers this higher performance is available at the same price as the original WTX-Uni drills," says WNT (UK) managing director, Tony Pennington.

Any customer wanting additional information on the WTX-Uni range, or a machining demonstration, should contact their local Technical Sales Engineer, for new customers a technical sales engineer visit can be organised by contacting the WNT sales office.

The secret of Dragonskin's superiority lies in decades of experience and consistent and continuous development of new and unique coating processes. Above all, and through innovation and expertise in powder metallurgy, WNT can achieve an unprecedented level of performance in machining. As with the invulnerability of Dragonskin, the new WNT Dragonskin coating technology offers maximum protection against wear, and has been developed with an almost impenetrable layer for the toughest requirements. Emerging from this is an elegant, satin coating with an extremely hard and indestructible surface that sets new standards.

The perfect combination of ultra modern high performance substrates and novel coating structures allow high cutting speeds and increased process security. Unlimited application possibilities puts everything that has gone before in the shade! A proven, up to 80 percent, increase in performance with the new Dragonskin coating technology offers a significant competitive advantage.

For every application the right solution

With 45,000 high quality products exclusively for metal cutting WNT is a market leader with a highly comprehensive product range. Be it turning, drilling, milling, grooving, finish-boring, clamping: for every operation WNT offer a broad range of innovative, state-of-the-art products, with an availability of 99 percent. For every application the ideal tooling solution.

WNT, a specialist for metal cutting, offers everything between the machine spindle and the table.

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New parting and slitting mill

Tooling giant Walter GB has announced the Blaxx F5055 parting and slitting mill as part of the Walter Cut SX grooving system. Like its Blaxx range stablemates, F5055 boasts extremely robust and precise construction, as well as outstanding performance and process reliability.

Available in diameters of 63 to 250 mm for insert widths of 2 to 4 mm, F5055 features Tiger·tec Silver indexable inserts with WSM33S and WSP43S cutting materials in three geometries: the stable CE4 for medium to high feed rates and applications with good chip compression; the universal SF5 for most materials and low to medium feed rates; and the easy-cutting CF6 for good machining conditions and low feed rates or for non-ferrous metals. The tool is suitable for cast-iron, steel and stainless steel components.

The F5055 cutter is part of the Walter Cut SX grooving system which is based on self-gripping, form-locking indexable inserts and extremely favourable cutting force guidance into the tool. The flexible top clamp can be relieved or can fully deploy its clamping force. The effect is a safely-anchored indexable insert and, as a result, excellent process reliability. Indexable-insert losses are almost completely eliminated.

The F5055 design ensures safe clamping of the insert even at higher speeds and, as a result of the cutter body's excellent concentric and axial run-out values, vibration is minimised.

In addition, because Walter Cut SX and F5055 use the same indexable inserts, users of both tooling systems benefit from reduced inventory costs.

New performance class for drilling

The new Supreme tool, the DC170 Supreme for steel and cast iron workpieces, is more than just another high-performance tool. Thanks to its revolutionary design and new features, this high-end drill is in a performance class which has never before been achieved and boasts the very latest high-end technology. It is the characteristic lands in particular which make this tool stand out from the rest, both visually and in terms of technology. The flat grooves guide the coolant that is released at the tip around the drill, ensuring 360-degree cooling. This allows the circulating coolant to control the machining temperature.

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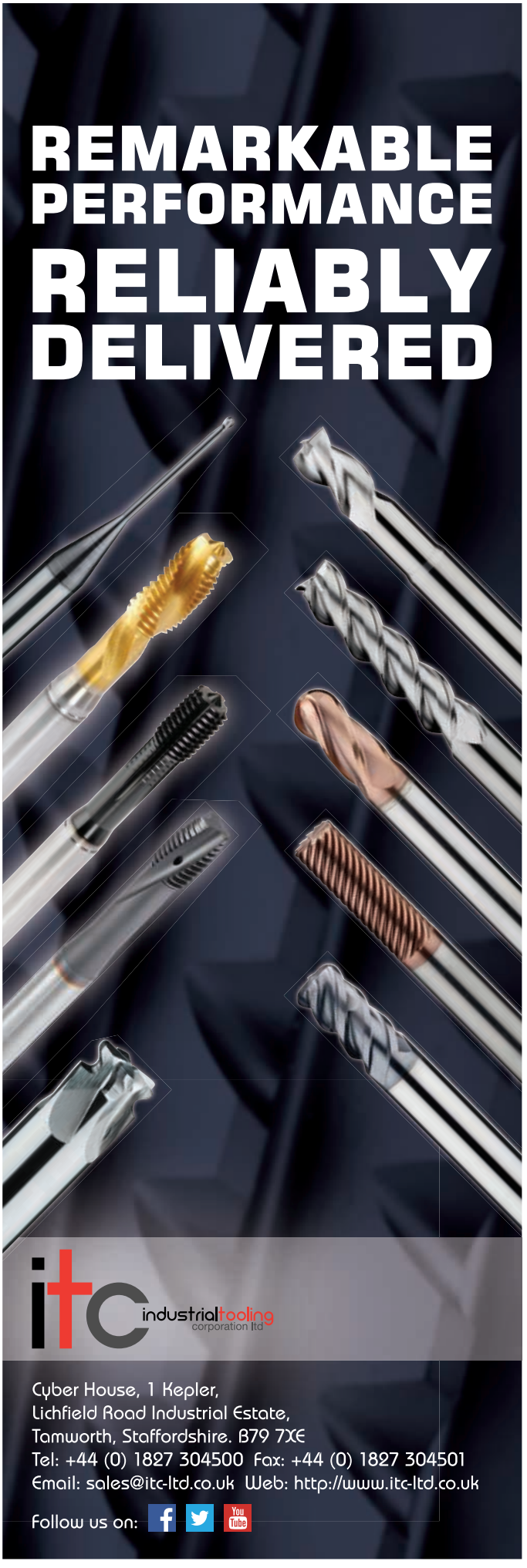


Sumitomo steps up hard turning solution inserts

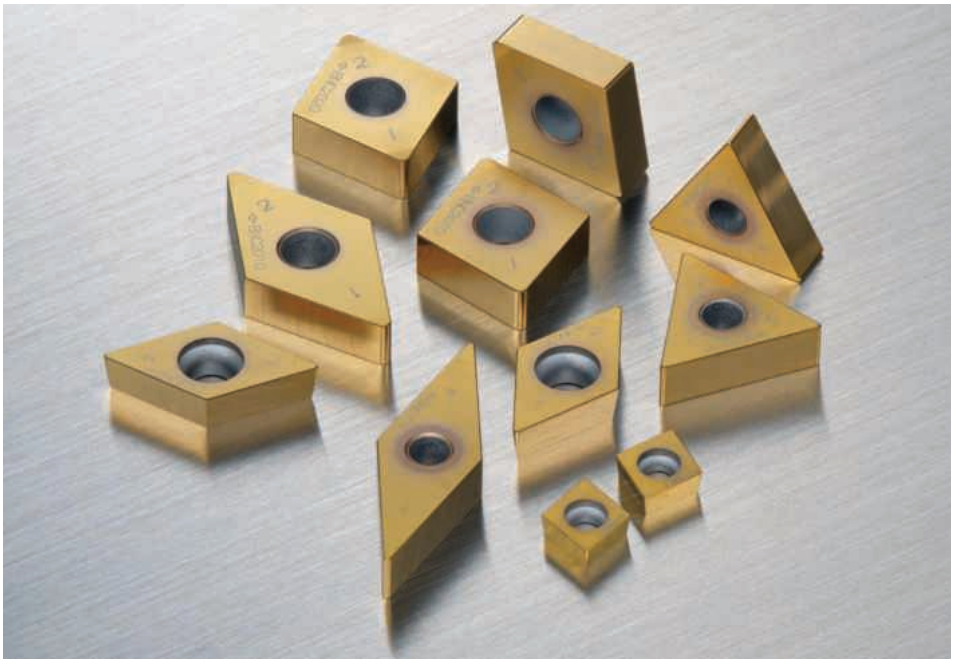
Sumitomo Electric Hardmetal has extended its specialist solution range of hard turning inserts with the launch of hybrid, physical vapour deposition coated (PVD) Sumiboron BNC2010 high precision and BNC2020 general purpose grade series. With the new inserts, the company also introduces a totally new range of Break Master chipbreakers NFV, NLV and NSV and one-use special wiper inserts -Type WG and WH.

The new hybrid coating insert range, now available through the UK headquarters of Sumitomo in Princes Risborough, is based on a recently developed sintered cubic boron nitride (CBN) powder with a titanium carbonitride binder substrate giving high orders of stability which is then multi-layer coated.

Indeed, the BNC2010 high precision finish turning grade incorporates no fewer than seven layers of coating, three are highly secret and each is sandwiched between layers of TiCN in order to create high cutting edge integrity with excellent resistance to flank wear. Finally, the insert is topped with a layer of TiN which aids superior surface finish.

Meanwhile, the general purpose BNC2020 insert incorporates a high bonding adhesive layer between its tough CBN substrate and TiAlN layer able to accommodate continuous cutting, light and heavy impact conditions whilst maintaining excellent chipping resistance even when heavy interrupted turning cycles are involved.

A prime example of BNC2010 being applied is the recent trial producing a transmission shaft where tool life was improved by 230 percent against an incumbent tooling supplier product using conventional coated CBN. The machine was run dry at 200 m/min with 0.1 mm/rev feed and 0.35 mm depth-of-cut and maintained a surface finish of Ra 0.6. A further application producing constant velocity joint cages which involved interrupted cutting, a BNC2020 insert increased tool life for the customer by 150 percent against conventional coated CBN tooling. The trial was run without coolant at 120 m/min with 0.10 mm/rev feed and 0.15 mm depth-of-cut.



The latest hybrid PVD coated Sumiboron BNC 2020 inserts are targeted towards hard turning applications requiring higher orders of stability

The addition of Break Master NFV, NLV and NSV chipbreakers enable chip control to be improved in hardened material production cycles with NFV ideal for finishing with up to 0.2 mm depth-of-cut. NLV performs better on greater depths-of-cut up to 0.3 mm and NSV is targeted at the removal of carbonised layers on hardened as well as non-hardened parts. Sumiboron One-Use Type WG and WH wiper inserts are primarily for use with continuous cutting cycles on hardened steel where comparable finishes to grinding can be achieved. WG is used on low-feed rate turning applications and WH for higher speed continuous cutting conditions.

Sumitomo Electric Hardmetal Ltd is a leading manufacturer of modern standard and special tools for demanding machining tasks in turning, milling and drilling.

As part of the Japanese Sumitomo Electric Hardmetal Corp., a subsidiary of Sumitomo, the company specialise in the development of cutting materials like carbide, cermet, CBN (Sumiboron) and PKD (Sumidia).

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A new Twist in protective packaging

BlockPack, the newly patented packaging concept from rose plastic, impresses with its TwistLock locking system. So much so that it has been presented with two packaging awards

In order to offer the customers a wide field of application possible, the product range has now been extended by several new sizes and includes tool diameters of 8-105 mm and effective lengths of 50-620 mm.

The two-piece protective packaging combines two essential functional product advantages: the bayonet-type twist lock technology, for smooth slide opening of the tube and the ratchet length adjustment, for individual securing of product content. BlockPack only requires the minimum operating opening force for length adjustment, offering both the manufacturer and end user effortless entry in to the packaging. It only takes a quick click to engage both parts and a simple rotation of about 10 degrees fixes the desired length. Special contoured tube ends, lateral stiffening ribs and an integrated base provides stability and gives a cushioning effect. BlockPack is available with an optional clip on / off hanger system making it one of the most universal tool packaging on the market today. Available as standard in natural PE material from stock.

For decades, Rose Plastic has been engaged in the development and production of special plastic packaging. Closeness to customer, a skilled and motivated workforce and a tightly interlaced network of perfected processes are the components for innovative packaging solutions of outstanding quality and for optimum service. The company's creativity and innovation is recognised not only by long business relationships with customers but also by national and international awards for innovative products.

Rose Plastic is a world leader in the production of protective plastic tubes and boxes for the cutting tool industry. It develops, produces and sells innovative products with an outstanding quality level and optimum delivery service. Whether standard solutions at favourable prices or tailor-made solutions with individual design, the company's comprehensive customer service and vast product range makes it a unique supplier of special plastic packaging with remarkable diversity.

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ITC cuts a new profile with extensive ID turning line

The continued development of the Micro 100 line of boring tools available in the UK from Industrial Tooling Corporation (ITC) now sees the Tamworth tooling specialist offer the QPF and QPR line of boring and profiling tools for intricate feature machining on small internal diameters.

The extension to the renowned MicroQuik boring line is the result of meeting market demands for extremely precise solid carbide boring and profiling tools that deliver astounding tool life. The MicroQuik combines these attributes with a toolholding system that is easy to setup and guarantees repeatability with its 3-point location system.

The QPF line of boring and profiling tools has a geometry with a 50 degree clearance angle that permits 45 degree cone machining on the internal diameter. The QPF also has a corner radius of 0.13 or 0.2 mm to improve surface finishes, tool life and chip breaking. To further enhance tool life, the QPF line is available with five rigid shank diameters that can machine maximum bore depths from 5.1 to 53.3 mm with minimum bore diameters as small as 1.27 mm through to 12.5 mm for the largest shank.

Available uncoated or with an AlTiN coating, the QPF and QPR line of profiling tools can be applied to a wide variety of materials that include aluminium, brass, copper, steel, stainless steel, high temperature alloys, exotic materials, thermoplastics and even composite materials.

The same shank diameters, maximum bore depth & diameter and also corner radii on the QPF line are also available on the new QPR range of profiling tools. The key difference lies within the tool geometry that provides the QPF with a larger cutting edge protrusion to increase the depth of the machined profile. With a 40 degree rake angle, the geometry enhances swarf removal.

Like all the boring tools in the MicroQuik product line-up from ITC, the QPF and QPR boring and profiling tools correspond with the innovative 3-point locking/locating toolholders. The 3-point system has been engineered for maximum rigidity whilst delivering remarkable centreline repeatability of 0.01 mm from tool to tool. This next generation toolholding system reduces machine setups and downtime whilst boosting productivity and cutting tooling costs.

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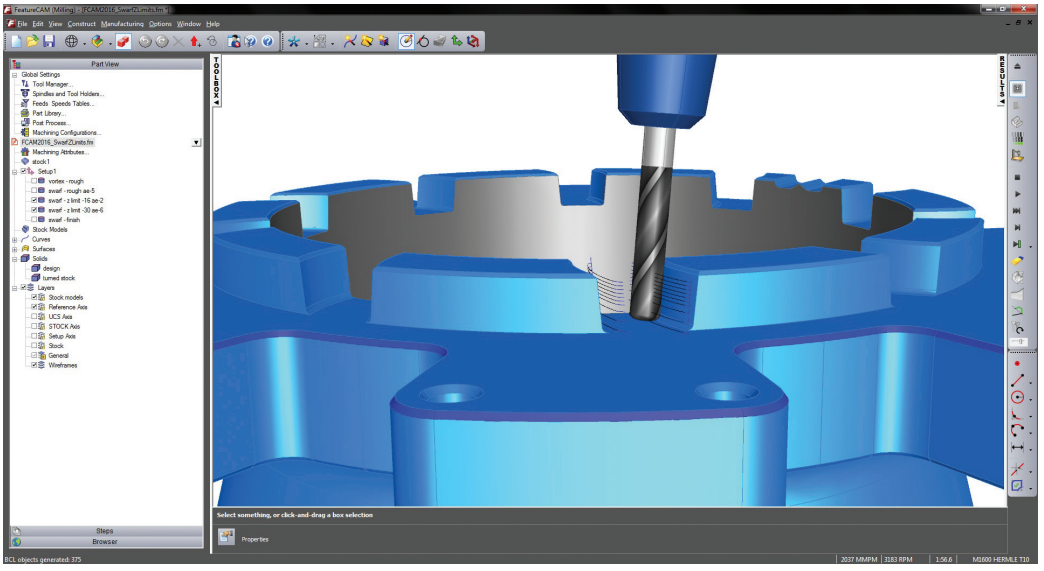
Delcam launches 2016 FeatureCAM



Delcam has launched the 2016 release of its FeatureCAM feature-based CAM software. This includes a range of enhancements, in particular more options for the Vortex high-efficiency area-clearance strategy, support for bar-fed mills, more efficient turning and user-interface improvements to make programming even easier and faster.

Full details on the new release, including video demonstrations of the main enhancements, are on the FeatureCAM Learning Zone.

FeatureCAM was the world's first feature-based programming software when it was launched in 1995. Constant development since then has ensured that the system has retained its leadership in programming speed and ease of use, while an increased range of strategies has been added to provide more efficient toolpaths that give greater productivity on a wider range of machinery, including mill-turn machines, five-axis mills and wire EDM equipment.

The 2016 release includes a number of enhancements to the Vortex area-clearance strategy. Vortex gives the fastest safe metal removal from solid carbide tooling, in particular designs that give deeper cuts by using the full flute length as the cutting surface. It produces toolpaths with a controlled engagement angle and so maintains the optimum cutting conditions for the complete roughing cycle, giving faster machining and longer tool life.

The ability has now been added to adjust and fine tune the non-cutting moves of 2.5D and 3D Vortex toolpaths, with options to retract the tool and/or to increase the feedrate. These options can be set individually, or can be combined to achieve an optimum toolpath, with a reduced cycle time.

Other roughing improvements include the ability to take into account any remaining stock on the model during holder collision checking, ensuring that Z-level roughing toolpaths are completely free of tool-holder collisions.

Milling of inside or outside groove features has been upgraded with a number of improvements. These include support for different types of roughing links, wind-fan approach and retract moves for finishing, better gouge checking for plunges and retracts, and tool radius and partline cutter compensation support.

Support has been added to FeatureCAM for multi-tasking bar-fed milling machines, such as the Mazak Integrex I150, and the Willemen-Macodel 408T and 508T. Access to the back of the component is possible with an option to set the swivel angle of the machine, with additional cut-off operations now available that use milling tools.

5-axis swarf machining has been made more flexible with a new option to control the upper and lower Z limits of a simultaneous 5-axis swarf toolpath. This is useful if there are limitations on the tool length that can be used or if the stepdown needs to be varied for different segments of the toolpath.

For users of FeatureTURN, the selection of turning tools has been simplified with the ability to use a single tool in multiple orientations. This new automatic tool orientation categorises tooling into either outside-diameter or inside-diameter turning tools, so shortening the time taken to program parts and reducing the number of different tools required in the tool crib.

In addition, the engage angle can now be set for the lead-in approach move. By controlling the approach move in this way, smoother chip formation and lower cutting forces can be achieved.

FeatureCAM now allows the quick import and alignment of a variety of pre-defined vices and chucks into a machining project. The result is increased productivity, not only due to the speed of programming but also because collision checking is provided automatically during simulation.

Used in combination with PowerSHAPE, FeatureCAM now allows machining files to be selected and nested automatically in a single block to optimise stock material usage.

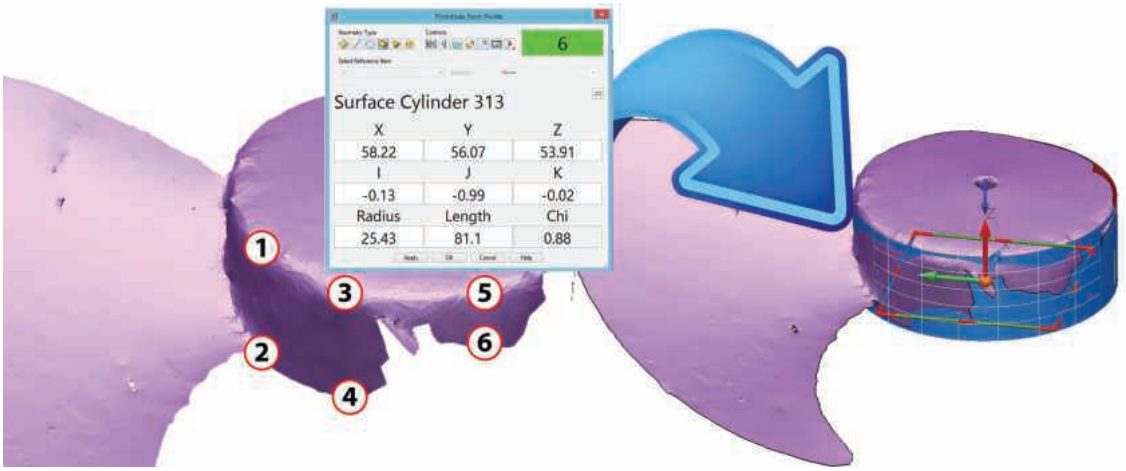
Interface improvements include the ability to create additional setups quickly during FeatureRECOGNITION, via a new button in the Feature Wizard. This reduces the overall programming time significantly.

In addition, items within the part view are now highlighted when the cursor hovers over them. At the same time, the items are also highlighted in the graphics screen, making it easier to find and select the desired items quickly.

Finally, Autodesk RealDWG has now been integrated into FeatureCAM, bringing with it increases in the speed of import of DWG files and support for DWG solid model import.

PowerSHAPE Pro offers faster modelling and reverse engineering

Delcam has added a series of enhancements to its PowerSHAPE Pro software for modelling and reverse engineering that will help users to complete complex designs more quickly and more easily. In addition, a combination of new, more efficient, code and the extension of multi-threaded



calculations to many commonly-used tasks will make the software significantly faster than any previous version. By offering a combination of solid, surface and direct modelling, together with reverse engineering, PowerSHAPE Pro provides the most comprehensive range of design techniques available in a single CAD program. Having all the different technologies in the same package reduces the need to transfer data between multiple programs and so streamlines any modelling-for-manufacture projects that require both reverse-engineering and CAD functionality.

The first enhancement in the 2016 release allows groups of features to be copied between two solids in a single operation. While the features do not need to be of the same type, the most common application is expected to be in copying patterns of holes with a single click from one solid to another, for example from one mould plate to any other plate in the mould stack.

Another new option to save modelling time is the ability to edit the axis direction of any number of surface or solid primitives simultaneously. Similarly, the axis direction of a group of primitives that are not aligned can be brought into alignment in one operation. PowerSHAPE Pro already had the ability to edit simultaneously the dimensions of groups of primitives.

For customers using PowerSHAPE Pro to capture data for reverse engineering, the software can connect directly to most scanning hardware to capture and display scan data in real time. In the 2016 release, it has been made easier to switch between measuring modes when using devices that offer data collection by both laser scanning and point probing.

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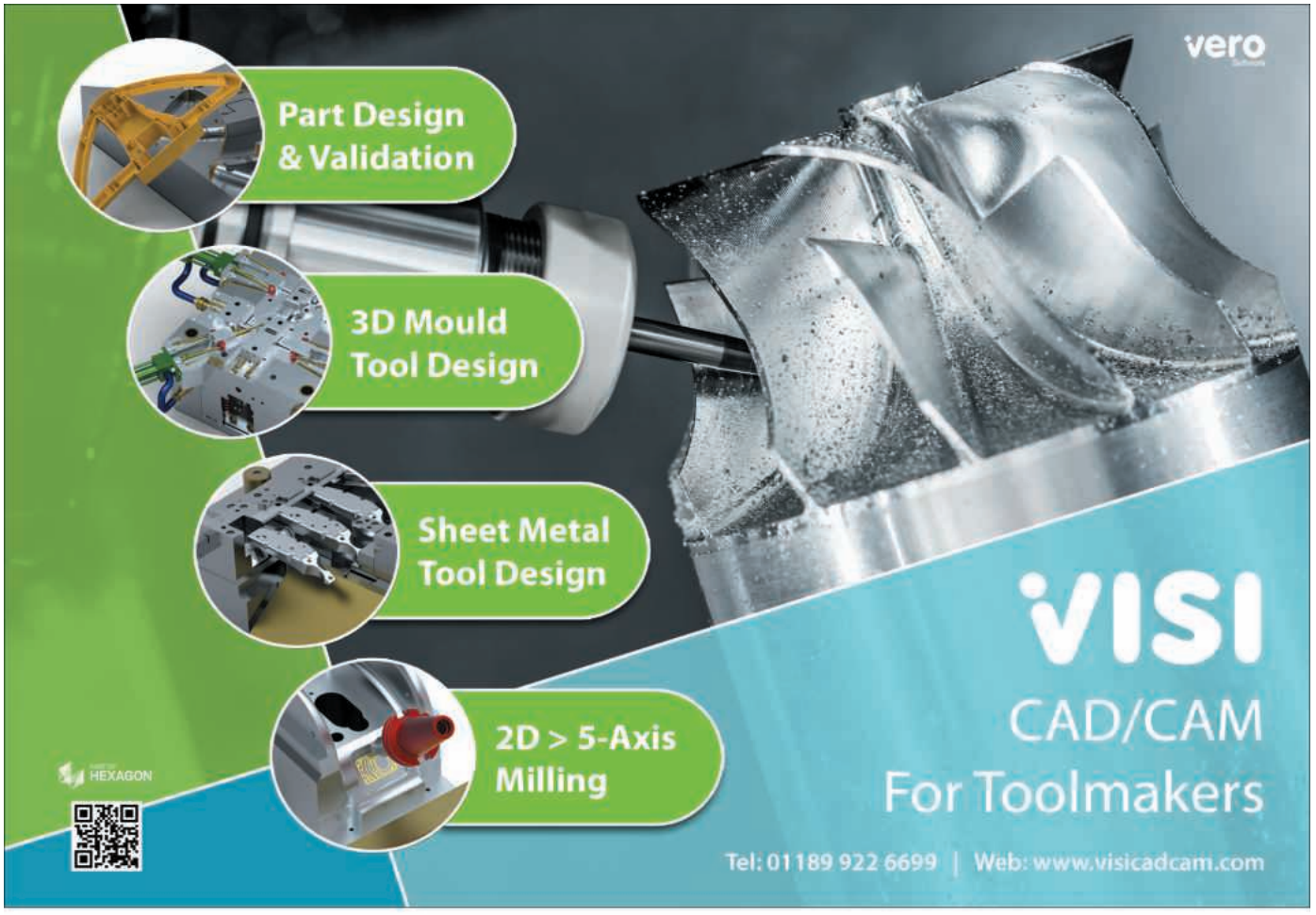

Dassault Systèmes launches SOLIDWORKS 2016

Dassault Systèmes, a leading company in 3D design software, 3D Digital Mock Up and Product Lifecycle Management (PLM) solutions, has announced SOLIDWORKS 2016, the latest release of the company's successful portfolio of 3D design and engineering applications. SOLIDWORKS 2016 delivers new and enhanced capabilities that will help 2.7 million users quickly and easily innovate, design, validate, collaborate and build, from initial concept to final product.

Powered by Dassault Systèmes' 3DEXPERIENCE platform, SOLIDWORKS 2016's integrated 3D design environment covers all aspects of product development. New user-requested enhancements include the ability to flatten any surface, visualise and help validate design performance, more efficiently communicate with manufacturing, quickly create marketing-quality images, and more easily access commands. With these and hundreds of other new capabilities, including an improved user interface, designers and engineers can focus on their designs, solve complex problems, streamline parallel design processes and fast-track designs through manufacturing.

"Our design teams work on complex models and we really appreciate many of the new features and enhancements in SOLIDWORKS 2016 but, in particular, the ease to select with 'Selection Breadcrumbs' and the 'purge' feature will help our designers be more efficient," says David Herlin, senior CAD data manager, Gaztransport & Technigaz.

"The SOLIDWORKS community creates remarkable products that range from small consumer electronics to industrial equipment with hundreds of thousands of parts, and integrate the latest technical trends, enhancing product form, function, and innovation," said Gian Paolo Bassi, CEO, SOLIDWORKS, Dassault Systèmes. "More than 90 percent of SOLIDWORKS 2016 enhancements directly resulted from our community's valued feedback, including their need to work faster and easier. As the next generation of products emerges, SOLIDWORKS advanced capabilities help millions of design professionals, educators, students and 'makers' efficiently innovate in product design, simulation, technical communication and data management."

The following are some of the top user-requested features, new products, and enhancements included in the SOLIDWORKS 2016 portfolio:

Focus on design, not software
Accelerate the design process, reduce time and effort to achieve desired geometry, increase modeling flexibility and easily access commands with the following features:

Curvature continuous edge fillets Create super smooth blends or "curvature continuous" fillets faster than ever before for all fillet types, including asymmetric and variable sizes.

Sweep Command Create complex swept shapes faster than before with better, more reliable and predictable results, and automatically create swept circular profiles in sections, with bi-directional sweeps in either or both directions.

Thread Wizard accurately model standard and custom-defined threads with one quick and easy-to-use command.

Breadcrumbs quickly and easily access any model without viewing the feature tree and reduce mouse travel with the breadcrumb in the cursor.

Solve complex problems quickly
Make analysis more efficient to help solve complex problems, visualize and verify functionality, and find potential errors before they occur.

Innovative Design Simulation Tools greater control and insight over operation sequencing, loads, part movements, forces needed and mesh quality result in reliable performance data.

Flatten Everything quickly and easily flatten the most complex geometry for manufacturing, easily identify strains induced when forming shapes back onto 3D surfaces, and introduce relief cuts for the flat pattern to alleviate excessive stretch/compression.

Streamline the parallel design process
Communicate, collaborate, and work concurrently across teams, disciplines, customers, and vendors with mechatronic design, concurrent design, and streamlined electrical/mechanical design.

Mate Controller similar to a game controller, easily and intuitively create and animate complicated assembly motion with calculation, control, and visualization features.

eDrawings Improve collaboration and communication of designs throughout product development by consistently measuring designs, navigating between documents and more accurately visualising models.

Fast-track designs through manufacturing
Create more detailed outputs for manufacturing and shorten product development to manufacture while saving time and reducing errors:

At the recent SOLIDWORKS 2016 UK launch event held in London, David Falkingham, sales director said: ''It's our community of users we are most proud of. If we are not listening to our customers and what they want we are not fulfilling their needs. Simple as that.

''Our strength has always been taking market share. More and more people are moving from our competitors to SOLIDWORKS. It's because of the breadth of product we can offer,'' concludes David Falkingham.

Dassault Systèmes SolidWorks Corporation
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Email: dave.falkingham@3ds.com
www.solidworks.com/launch

New 4-axis machining module

ModuleWorks, a leading supplier of CAD/CAM components for 5-axis machining and CNC simulation, is happy to announce the release of a new module dedicated to rotary or 4-axis machining. ModuleWorks is at the forefront of 5-axis machining and simulation technology, providing the toolpath generation and simulation technology that powers many of the most popular CAM systems available around the world today. ModuleWorks has more than 100 industry partners around the globe.

For many years, users have used the ModuleWorks 5-axis technology for machining rotary parts. However, although this gives very good results, it is not always easy to get the best results. Now, ModuleWorks will provide a dedicated module with new algorithms designed for rotary parts and a new User Interface.

Rotary 4-axis applications include: screw shapes, compressors, freeform parts, gears, worm shapes, across a wide range of industries including aerospace, automotive, oil and gas and general engineering.

ModuleWorks and Aixtooling, providers of precision molding technology for optical glass, are pleased to announce the results of their partnership.

Aixtooling and ModuleWorks first worked together on research projects as far back as 2008. These projects, and in particular 3DOptics and OptiStruct helped ModuleWorks develop Optics software technology which could then be applied in the Optics manufacturing process by Aixtooling. Further research projects, KoDaRe and MicroAdapt, are now allowing this research to progress even further.

Aixtooling was originally established 10 years ago as a spin off from Fraunhofer IPT in Aachen, with the aim to make optics manufacturing technology available to industry. Good strategic partnerships, the use and mastery of excellent equipment, extensive technological expertise, trusting collaboration with customers, and the trend towards wider use of complexly shaped optics are the fundamental principles of Aixtooling GmbH, and in the past few years they have led to successful corporate development.

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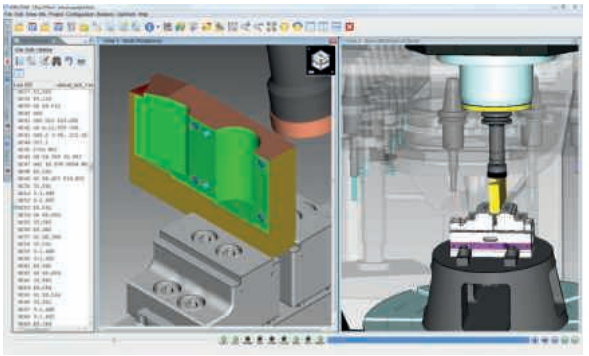

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Edgecam code for rotational mould tools

Edgecam software is playing a pivotal role in assisting a precision engineering company in the niche market of supplying mould tools to the UK's rotational moulding industry. Having invested in a further two new Haas milling machines and a new high specification computer to handle the specific requirements of producing rotational mould tools, Turnell and Odell say they simply could not manufacture them without Edgecam.

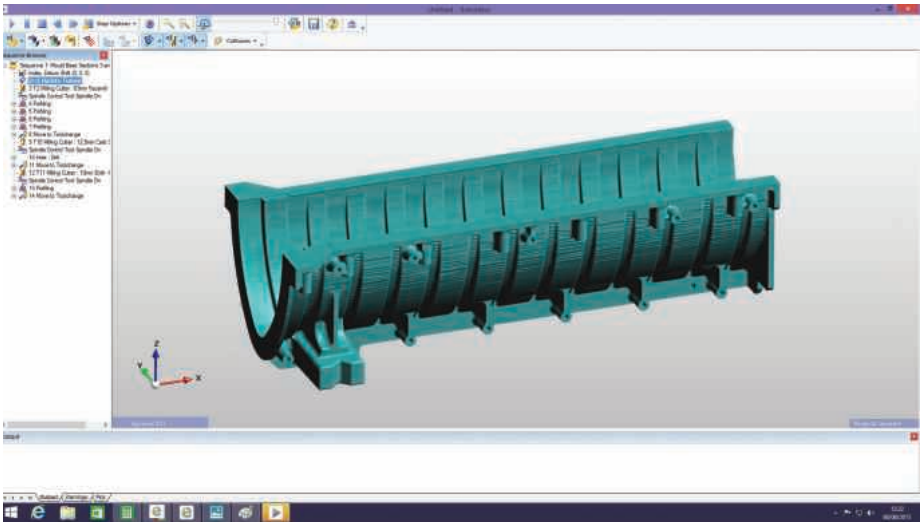
CNC milling supervisor Lee Billingham says they have recently created two-metre-long rotational mould tools for construction industry pipes which required millions of lines of code: "We needed 1.2-million lines of code just for one operation. It would be absolutely impossible without Edgecam."

The Northamptonshire company produces rotational mould tools ranging from 200 mm cubes to two metres, for a number of industries including construction, medical and food. Rotational moulders create their plastic products by feeding polymer plastic granules into the mould, which is then placed in an oven and rotated, usually around two perpendicular axes. When heated, the softened plastic is thrown against the sides of the mould and hardens into the rigid product in a cooling chamber. It keeps spinning throughout the heating and cooling cycles.

Turnell and Odell's production director, Kevin Rees, says rotational moulding tools are highly complex because a uniform wall thickness has to be maintained: "Anything in the internal features which is going to create the actual plastic product has to be mirrored on the outside, to ensure the wall stays at a constant thickness."

He says the file sizes are considerably bigger than for normal machining, because of the tools' complexities. "The demands put on Edgecam for the piping moulds were extremely heavy, but the software dealt with it so easily that a half-day's programming for one part of the mould created code for a full 24 hours machining. We always aimed to have the programs ready towards the end of the day, to make the most of lights out machining."

Customers provide them with models of the finished plastic product they want to make, then Turnell and Odell design the mould tool in SolidWorks by creating a block around it and shelling away to produce the internal features. "We always need to think about shrinkage, and it needs drafting out to ensure the product comes away easily from the tool.



"Once we know that our design will work, we import it into Edgecam and apply the machining strategies. Then we run it through Edgecam's powerful simulator to make sure there won't be any expensive collisions when we start cutting metal. When we're happy that we'll be able to machine the mould tool exactly how we want it, we create the NC code with any chosen post processor.

"It's one thing to design a mould tool, but Edgecam gives us full confidence that it can also be machined accurately and quickly. Depending on the size of the mould, the turnaround time is usually between two and 12 weeks."

Kevin Rees says Edgecam makes the task of machining rotational mould tools' particularly complex features, an easy process: "This is because any shape within Edgecam becomes simple. Even with the most demanding shapes, the only complexity is how quickly Edgecam can process the information. It handles several millions lines of code just as easily as a few thousand, it just takes a little longer."

As well as investing in two additional Haas

VF4 SS machines for high speed machining at 12,000 rpm, which are perfect for their aluminium rotational mould tools, the company have installed a new six dual-core computer capable of running 12 x 3.5 gigahertz simultaneously, which he says is vital to handle the huge file sizes. It also has a solid state hard drive, 31.9 gigabytes of RAM, and NVIDIA Quadro K4200 graphics card.

CNC miller Alexey Don has been working on the pipe mould tools, saying Edgecam not only made the job simple, it made it possible in the first place: "With millions of lines of code it would be a lifetime's work to do it manually. We just wouldn't be able to work out the co-ordinates. But Edgecam does it within a couple of hours."

With an array of Haas, Bridgeport and Cincinnati CNC machines Turnell and Odell turn their hand to any high precision machining across a range of industries, including food, energy, nuclear, motorsport, food, mining and plastics. They recently gained AS 9100 accreditation and have begun taking enquiries from the aerospace industry.

Managing director Clive Odell says the company can look ahead with confidence, especially as they develop what he calls home-spun talent through an apprenticeship scheme, having taken on Higher Level apprentices Layla Weaver and Ashley Easton this year: "The average age of our milling department is in the 30s, so we have a good succession plan. And with our growing role in the rotational moulding and aerospace industries, I believe Turnell and Odell has an exciting future."

Part of the Vero Software Group, Edgecam is a leading production CAM solution, combining the power of sophisticated toolpath generation with seamless CAD integration. Used globally within a multitude of industries, Edgecam provides a complete solution for milling, turning and mill-turn programming.

Vero has direct offices in the UK, Italy, France, Germany, Netherlands, USA, Brazil, India, Japan, Korea and China and a comprehensive global reseller network across more than 45 countries.

Vero UK Ltd
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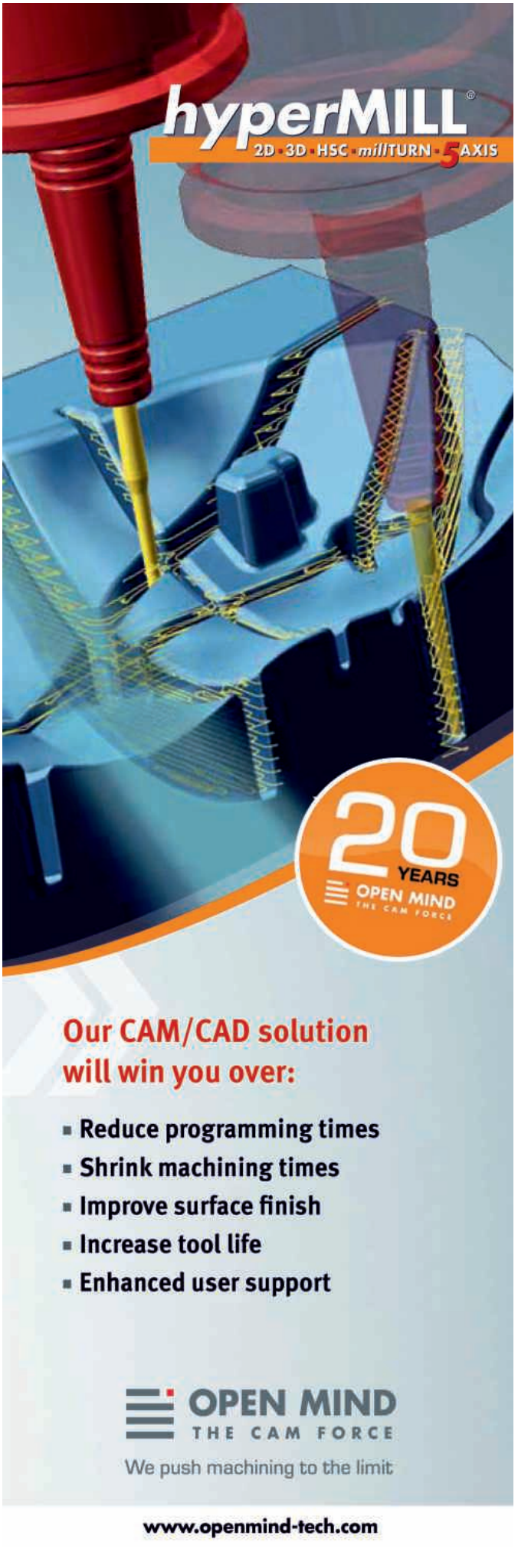

Essentials for excellence in aerospace manufacturing

Do you need to accelerate development and get into production faster? Are you looking for new ways to stay competitive? If the answer to these questions is 'yes' then a collaborative one day conference entitled 'Essentials for Excellence in Aerospace Manufacturing' could provide the solutions. Organised by CGTech and TTL, the conference will be held between 9.30am to 3.30pm at the Manufacturing Technology Centre (MTC), Ansty, Coventry, on Thursday, 26th November 2015. You can register for this event by visiting:
www.cgtech.com/aerospace-manufacturing
www.ttl-solutions.com/aerospace-manufacturing

Any company that needs to reduce programming time and respond quickly to design updates, or is looking to confidently generate collision free toolpaths and eliminate costly errors on its machine tools should attend. Focusing on making components right the first time and reducing programming lead time the presentations at 'Essentials for Excellence in Aerospace Manufacturing' will be aimed primarily at precision engineering companies involved with the production of aero structure components.

Presentations by CG Tech, Siemens PLM and TTL will illustrate an end-to-end programming and verification process chain. They will cover reducing lead time for deploying machine turnkeys; efficient re-programming of parts already in production to take advantage of the latest machine performance and capability, as well as reducing time with knowledge re-use.

Following a brief overview of the process chain, TTL will look at Knowledge Re-use, including the original CAD model, associativity with Siemens NX CAD/CAM software, toolpath generation, templates and libraries. This is logically followed by simulation and verification presented by CGTech, and will consider the VERICUT link to Siemens NX and the transfer of fixtures, tool library and stock materials.

The next step in the chain is toolpath verification, and CGTech will focus on verification and trapping errors leading to an error free part and comparing the machined part to the original design using the Autodiff module. TTL will then consider and compare different machining strategies and the replacement assistant that incorporates design change, for easy re-programming of any parts. The shopfloor application of VERICUT's collaborative tool, reviewer, that can run on PCs and Apple iPads, provides the final link in the process chain.

TTL managing director, Rob Pope, says: "Developments in the CAD/CAM arena make Siemens NX a viable option for the aerospace manufacturing sector. Synchronised with the CAD/CAM software, the partnership between TTL and CGTech will highlight 'Joined-up thinking for Part Manufacturing'."

Live software demonstrations, a customer testimonial, and presentations will be used to shine a spotlight on all the benefits available. "Commercial Aircraft orders are increasing at record pace and the supply chain is struggling to deliver parts on time and at cost. This collaborative conference is designed to help improve efficiencies and control costs," explains John Reed, managing director, CGTech.

Headquartered in Irvine, California CGTech specialises in numerical control (NC/CNC) simulation, verification, optimisation and analysis software technology for manufacturing. Since 1988 CGTech's product, VERICUT® software, has become the industry standard for simulating CNC machining in order to detect errors, potential collisions or areas of inefficiency. CGTech has an extensive network of offices and resellers throughout the world.

With more than 150 years of combined hands-on experience in CNC programming, multi- axis machining and an in-house NX driven machine shop, TTL is uniquely placed to provide the expert help and support required to maximise the return on a CAM investment. Recognising this experience and expertise, Siemens Industry Software has chosen TTL to be its UK specialist CAM partner. Serving the aerospace, power generation, motorsport, medical and pharmaceutical industries, TTL provides NX CAM sales and support through a professional, dedicated and expert team that is focused on solving clients' machine programming problems, and is committed to helping customers get the best out of Siemens PLM Software technology.

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JETCAM rolls out new software at Fabtech

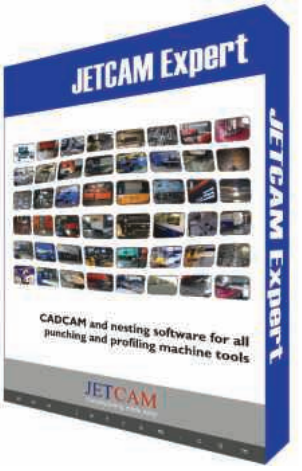
JETCAM International s.a.r.l. will use the Fabtech International show in Chicago to roll out new versions of its core sheet metal software products, at booth no S2279 between November 9th and 12th 2015.

Its flagship nesting software JETCAM Expert recently underwent a transformation with an entirely new interface in v18, along with several major new punching features including ASP (Automatic Sheet Processing). The latest v18 release builds on this with dozens of enhancements across the CAD, CAM and nesting sections, new turret management capabilities as well improvements to several popular postprocessors.

The new user interface draws much of its styling from JETCAM's CrossTrack product, and focuses on reducing the mouse movements a user has to perform during day-to-day operations. All file management and tabular data views have been improved with new controls, and general performance enhancements have been made throughout the interface.

Attendees are invited to bring CAD files with them to submit for a free nest comparison benchmark, with v18's new high performance nesting. Companies often see savings of over 10 percent which, when cutting expensive material such as titanium, can generate a return on investment of months or even weeks.

The Premium versions of JETCAM Orders Controller (JOC) also include several new features. Starting with CAD, a new DXF nest splitter allows users to automatically split a DXF file containing multiple parts. Multiple configuration profiles can be created, providing the user with parameters such as tolerance, whether to keep text or to use found text as the name for the resulting DXF files. With one click a DXF nest can then be split into separate files, ready for CAD import. Similarly, JETCAM Expert's CAD filtering now also allows multiple configuration profiles to be configured through JOC, ensuring that the selected profile settings are applied automatically on a per-file basis, fixing any issues during the CAD import process. Other additions include improvements to part/nest costing and a new reports designer.



JETCAM will also be demonstrating the recently launched Cut Scheduler, a low cost and capable job scheduling application. Running in either standalone mode or as a multi-terminal master/shopfloor mode, it allows drag and drop scheduling of nests and one-click job starting, which downloads NC code to each CNC machine.

JETCAM International s.a.r.l. Tel: 0870 760 6469
Email: info@jetcam.com www.jetcam.com

Visualise and analyse large 3D CAD models

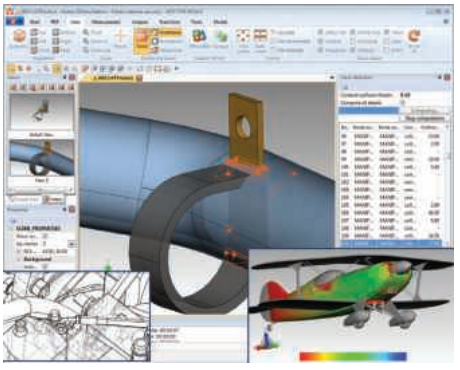
KISTERS has announced the release of the 2015.1 3DViewStation. The KISTERS 3DViewStation is known for its modern user-interface, high performance 3D-viewing, advanced analysis and Digital MockUp (DMU), current and mature CAD-importers for a broad range of formats including Catia, NX, Creo, SolidWorks, JT, 3D-PDF and STEP plus an extensive set of functional tools to view, analyse and communicate 3D-data as i.e. STEP, JT or 3D-PDF.

The focus of the developments of 3DViewStation V2015.1 has been set to optimise further the handling of extremely large assemblies and the enhancement of the analysis functions.

The model tree has been replaced in order to accelerate selections in extremely large assemblies thereby improving filtering and isolation of large assemblies such as selecting 5000 parts of a specific colour in a 100.000+ parts assembly. The filtering has been cut down now to fractions of a second. Performance and memory usage have been optimised by migration of the graphics kernel to DirectX 11 while ensuring to better support virtual systems.

There have also been enhancements in the area of analysis functions: a wall thickness analysis displaying colour gradation based on the ray method has been added; the calculation of volume and surface will no longer be performed during loading, but is now accessible via a menu item; the presentation of results from the clash detection has been improved; the SVG 2D-vector export of hidden line removed data has been enhanced; a minimum bounding box has been added; PDF-Export has been enriched; ISO-like dimensioning has been enhanced; a new XML-based API has been added, which is now available for all product types: Desktop, ActiveX and WebViewer.

The KISTERS 3DViewStation was developed by very closely following customer requirements. It is available as Desktop, ActiveX and HTML5 WebViewer product-versions. All product types are intended to be used together with a PLM-, ERP- or other management system



providing all necessary APIs. KISTERS offer standard software solutions for the energy markets and the manage ment of water and air, for environmental protection, for the handling of hazardous substances and dangerous goods, for safety at work and health care. KISTERS offers high-capacity scalable systems, which can easily be tailored to customers' and local demands.

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Aberlink software is the deciding factor

Although the capabilities, accuracy and speed of Coordinate Measuring Machines (CMMs) can often be similar, the diverse nature and the varied operating characteristics of CMM manufacturers' software means that the deciding factor for potential purchasers is frequently the CMM's software. This was the case when Wrate Engineering Co recently purchased a CNC version of Aberlink's popular Axiom Tool CMM.

Having considered the offerings from several leading CMM manufacturers, company partner Chris Wrate decided that the ease-of-use and speed of Aberlink's feature-rich 3D measuring software gave the company's Axiom Too CMM a major advantage over its competitors.

Established in London in 1973, A Wrate Engineering Co. is a busy BSENISO9001:
2008 accredited, precision engineering business that specialises in manufacturing hi-quality components for a range of industries.

Explaining the business' need for a precise CNC CMM, Chris Wrate said: "Over the years we have built-up an impressive collection of highly productive machine tools and associated equipment, enabling us to perform a range of operations including CNC and conventional turning and milling and surface and cylindrical grinding. In addition we are able to undertake a wide range of second operations.

"As increased demand for our services and rising levels of production were beginning to create bottle-necks in our quality department, we recently viewed demonstrations of several CMMs from various manufacturers. As we were unimpressed by one or two of the machines on offer, we ended up with a short-list of just a couple machines. Although these CMMs were comparable in many ways, the functionality and ease-of-use of Aberlink's 3D measurement software set the company's Axiom Too CMM apart, and we were happy to place an order.

"We purchased the CNC version of the Axiom Too along with Aberlink's standard 3D inspection software and also invested in the company's easy to use CAD comparison software.

"Unlike the software of the other CMMs we considered, Aberlink's software was extremely easy to use, intuitive and logical. This simplicity shortened our CMM training time and meant that our operators became proficient very quickly. Aberlink 3D has many very useful features, for instance, when we perform an inspection routine using Aberlink 3D, an image of the measured component is automatically created on the computer screen. As the displayed dimensions between the measured features reflect those that appear on the component drawing, we are able to compare measurements as required.

"Also, every time a component is inspected using Aberlink 3D software, a programme for measuring identical components is automatically created. We are then able to store the program, recall it when required then inspect multiple components in a fast CNC mode.

"Following the inspection of a single part or batch of components, we are also able to generate inspection reports in the form of fully dimensioned graphical representations or tabulated reports that show nominal conditions, tolerances, errors, pass/fail status, geometric tolerances and other parameters."

Available in manual and CNC variants, the Axiom Too is the

best-selling CMM from the largest UK owned Coordinate Measuring Machine manufacturer. Aberlink's Axiom Too CMM is ideal for use either in controlled environments or within less than perfect shop-floor conditions.

Explaining the philosophy behind Aberlink's popular 3D software and the company's CAD Comparison software, Chris Davies, Aberlink's business development manager said: "Although we have ensured that our Aberlink 3D CMM inspection software encompasses all of the required features and functions, our aim when developing Aberlink 3D was to make even the most complicated of measurement tasks trouble-free and fast to complete. This built-in ease of use results in a significantly reduced software learning curve and makes Aberlink 3D equally rewarding when used by a novice or an experienced CMM operator.

"As Aberlink 3D delivers its depth of functionality in a very logical and intuitive way, it is ideal for use by either occasional users or full-time inspection professionals. In fact, in addition to quality personnel operating their Aberlink CMMs, as our 3D software is so simple some of our customers allow their production operatives to use their Aberlink CMMs to perform in-process checks and to verify their own work.

"Aberlink 3D has become the software of choice not only for Aberlink CMMs, but also for numerous global manufacturers of measuring arms, vision systems and other metrology devices. To ensure that Aberlink 3D remains at the cutting edge, we regularly release new, enhanced software versions, and unlike, most of our competitors, we issue all updated software free of charge to all of our existing customers.

"Aberlink's optional, CAD Comparison software module

complements Aberlink 3D by providing the capability to compare measured points to a CAD model and can be used on a manual or CNC CMM. Often this is the only way to measure more complex components."

Now the largest UK owned CMM manufacturer, Aberlink's comprehensive range includes 23 standard sizes of both CNC and manual CMM variants. Aberlink CMMs enable the precise measurement of the smallest of components, to parts of over 3 m long and up to six tonnes in weight. Customers are also able to select from a wide range of probing and non-contact measurement options and on-machine fixturing. The company's wide range of available solutions allows Aberlink to offer high quality CMMs to suit all applications and budgets.

Based in Eastcombe, Gloucestershire, Aberlink Innovative Metrology LLP has established a global reputation for its metrology products which are innovative, easy-to-use and competitively priced.

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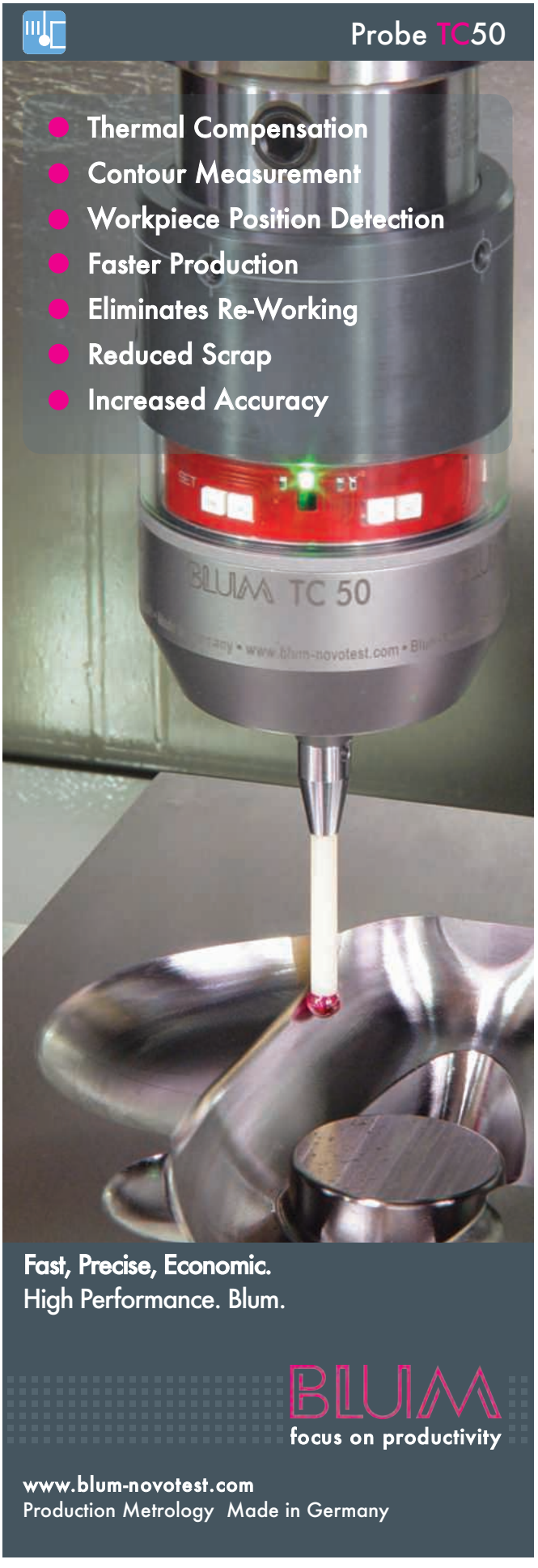


Optimised TIGO SF for automated measurement

New integration options available for the compact shop-floor coordinate measuring machine (CMM)

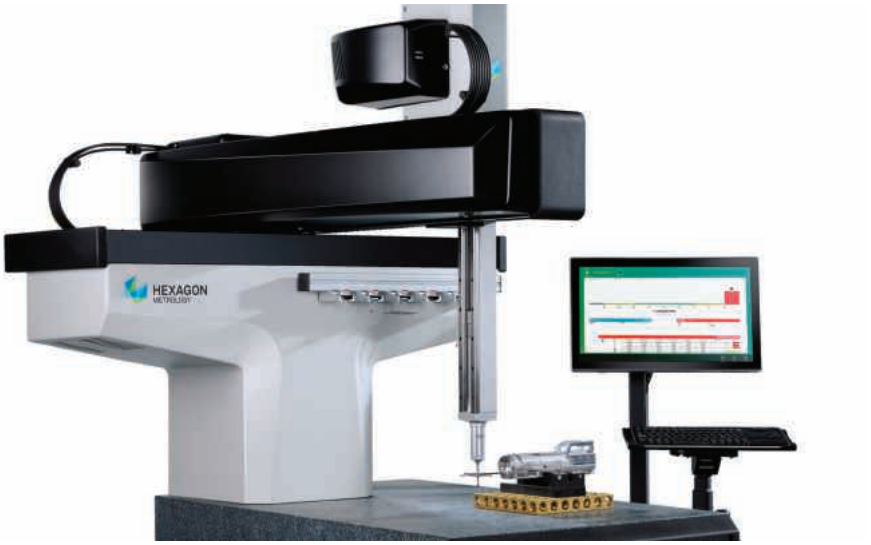
Hexagon Metrology has announced new options for the latest version of its TIGO SF shop-floor CMM, enabling easy integration into fully-automated in-line or near-the-line inspection cells or as part of a complete production and inspection setup.

With a 500 x 580 x 500 mm measurement volume and shop-floor specific features, the TIGO SF is designed to measure small to medium sized parts efficiently in a harsh workshop environment. The structure of the machine is open on three sides for maximum accessibility, making it ideal for use with robotic part-handling systems or automatic workpiece recognition systems. A new optional I/O Kit enables the CMM to interface directly with automated lines and exchange data with Programmable Logic Controllers (PLC) and measurement data can be used to inform process improvements as part of a wider product lifecycle management (PLM) system.

The air-free TIGO SF is a robust design, protected from contaminants by covers and bellows and featuring advanced thermal compensation and passive damping systems as standard. Active damping can be added to enable installation near machining centres or part-transit areas. An IP54-protected machine stand is also available to protect the PC and other electronic components, so the CMM can be positioned right within the production process to reduce measurement times and maximise throughput. For plants using a fully-automated setup, the TIGO SF can be delivered with messaging lights to alert users to changes in the CMM status from a distance.

"The TIGO SF is a proven system for workshop conditions and provides the perfect base for an automated solution," says Anna Maria Izzi, Bridge CMM product manager at Hexagon Metrology. "With these options, we wanted to make it easier to design systems around the CMM. We firmly believe that measurement should support production, and automated systems gathering and delivering data quickly are ideal for increasing efficiency, improving quality and driving productivity."

The TIGO SF is available to order worldwide with these integration-ready options preinstalled, while some retrofit options are also offered to bring existing machines up to the automation-optimised standards.



Hexagon Metrology unveils GLOBAL EVO

Hexagon Metrology has announced a new model of its versatile GLOBAL coordinate measuring machine (CMM). Designed in collaboration with internationally-renowned design house Pininfarina, this new best-in-class machine is tailored specifically to offer process speed and efficiency to manufacturers requiring accurate tactile scanning and high throughput.

Built on the reliable foundations of the highly-successful GLOBAL range, GLOBAL EVO features a number of new technologies to improve speed without compromising on performance. Central to the design is Compass, a combined hardware/firmware vibration reduction technology which acts like a suspension system for the CMM. With Compass, the machine can effectively compensate for vibrations caused by its own movements, enabling higher-speed scanning with no loss of accuracy. Accompanied by the Scan Pilot firmware feature, which ensures robust and rapid measurements even when scanning complex unknown profiles, Compass gives GLOBAL EVO its outstanding scanning performance.

GLOBAL EVO is also the first CMM to include Fly2 Mode, the next-generation of Hexagon Metrology's trajectory-optimising technology. Automatically generating and implementing the most efficient path between points, Fly2 Mode ensures smooth movements and reduces program execution times.

"GLOBAL EVO is all about savings, both of time and of money," says Anna Maria. "The technologies inside are designed for speed, offering best-in-class scanning performance and throughput to cut the time spent on measurement, and the machine also includes our new Eco Mode power-saving function as standard to reduce the overall cost of operation. With GLOBAL EVO, we have produced a CMM that supports manufacturers in their quest to drive productivity while maintaining quality."

GLOBAL EVO is available to order immediately from local Hexagon Metrology commercial operations and dealers.

Hexagon Metrology plc
Tel: 0870 4462667
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www.hexagonmetrology.com

Portable hardness tester helps increase blade life

The UK's only producer of hotsaw bades, Sheffield Industrial Saws, relies on the TH174 portable hardness tester from Bowers Group to accurately measure their hot and friction circular saw blades.

The TH174 portable hardness tester is a handheld dynamic metal hardness tester with integrated impact device DL. Sheffield Industrial Saws use the device to measure the hardness of the tooth tips of their hot and friction saw blades, which are made from carbon steel. The Bowers metal hardness tester is one of the only products on the market that can fulfil their hardness testing requirements whilst being portable.

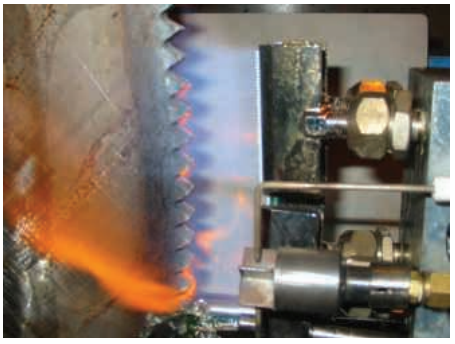
The tips of the hot and friction saw blades are flame hardened and water quenched using Sheffield Saw's in house designed POWERFLAME hardening machine. The tips need to be hardened in the region of 42-54 HRC to a varying depth depending on the pitch of the tooth, with tooth pitches varying from approximately 6 mm up to 25 mm.

Sheffield Industrial Saws provide products for every type of industrial cutting application in the UK and worldwide. As the UK's only producer of Hotsaw Blades used in steel section mills around the world, Sheffield Industrial Saws specialise in the manufacture of the highest quality circular blades.

Hot Saws from Sheffield Industrial Saws are used for cutting red hot carbon and alloy steels over 750° C. Their larger tooth pitch enables capacity for extra gullet clearance, which prevents filling in. The high pressure cooling and clearing of the teeth, in addition to the generous body cooling, is critical for optimum blade operation.

Friction Saws are used for friction cutting cold carbon and alloy steels, usually in multiple pieces. The finer tooth pitches of friction saws are used to generate frictional heat during cutting. It is absolutely vital to blade operation that the saws are able to withstand high pressure cooling and clearing of the teeth, and generous body cooling.

Blade materials for large hot saws and large friction saws include carbon, manganese and steel with a normalised body 22 HRC with flame hardened teeth 42



to 54 HRC. These Powerblades combine tough crack resistant blade bodies with hard, wear resistant teeth, providing considerably increased blade life between sharpens compared to medium carbon manganese steel blades.

Bowers Group
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www.bowers.co.uk

New eyepiece-less stereo microscope

Vision Engineering is has announced the much-anticipated launch of Lynx EVO, a new high productivity eyepiece-less stereo microscope.

Building on the strengths of its market-leading predecessor, Lynx EVO eliminates the difficulty and strains of using 'eyepiece' stereo microscopes, opening up a world of enhanced productivity and ease-of-use.

Although the eyepiece-less advantage of Lynx EVO stems from stunning 3D (stereo) imaging, the real brilliance of the patented design is the simplicity of operation.

Superior imaging combined with unrivalled ergonomics promotes simple hand-eye coordination, critical for precision inspection tasks, rework, repair and other manipulation activities. Operators can maintain the highest levels of performance, even across an entire shift.

Benefiting from a high optical specification, the 10:1 zoom ratio with long working distances provides users the ability to inspect up to 120 x magnification (6 x–60 x standard), ideal for a wide range of applications.

Lynx EVO is available in a range of configurations, designed for use in different environments, from laboratories and medical device clean rooms, through to production, or manufacturing inspection. Accessories include HD image capture, plus an exceptional 360° rotating viewer.

Vision Engineering designs and manufactures eyepiece-less and expanded pupil microscopes for laboratory and industrial applications. Established in 1958, more than 300,000 systems have been installed world-wide for inspection and measurement tasks. Company headquarters are in Woking, UK with manufacturing facilities in the US and UK. Regional offices are located throughout North America, Japan, Europe and Southeast Asia.

Lynx EVO - powering your productivity through eyepiece-less stereo microscope technology

Vision Engineering Ltd
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www.visioneng.com

IndySoft aids RM&C's efficiency

To ensure accuracy and an unbroken chain of traceability back to national standards, measuring instruments must be regularly calibrated. UKAS (United Kingdom Accreditation Service) accredited laboratories ensure conformity and compliance with standards by offering services such as inspection, calibration, testing and certification.

UKAS is the only national accreditation body that is recognised by government to assess, against internationally agreed standards, organisations that provide certification, testing and calibration services. One such UKAS accredited concern is TT Electronics business Roxspur Measurement & Control Ltd (RM&C), an ISO 9001:2008 quality approved company offering UKAS traceable calibration with BS/EN ISO 17025 accredited procedures.

RM&C is able to provide both on-site and in-house calibration to either UKAS or national standards. The company provides full certification of a range of disciplines including temperature pressure, flow and electrical parameters.

In addition to skilled staff based at the company's Sheffield based calibration laboratory, RM&C employ a team of experienced engineers that hold accreditation for the on-site calibration of equipment including autoclaves, furnaces, thermocouples and RTD probes, scales and balances, ovens and chambers, indicators and controllers, pressure and electrical measuring equipment.

Although RM&C personnel have access to highly accurate and efficient calibration instruments, as a result of the ever rising demand for the company's calibration services, it was felt that the company's calibration management software was too slow and unable to deliver the functions needed for maximum operational efficiency.

To help speed-up operations and increase

efficiency, armed with a 'wish-list' of the features required, a web-search was undertaken by RM&C staff for a suitable software system that was designed for use in commercial calibration laboratories. Having identified three potential software suppliers, a series of on-site demonstrations were organised.

Mark Donnelly, RM&C calibration services manager explained: "Although each of the software systems that we saw performed well, commercial lab management calibration software from IndySoft was the only one that gave us all of the features that we needed. In addition, the IndySoft Calibration software was easy to use, simple and logical, and when required, configurable to our own specific requirements.

"Having purchased our first user licences, as our use of IndySoft software has been so successful we have since expanded and added further licences. Our use of IndySoft's calibration software for commercial labs has helped to stream-line our laboratory's administration function, speed-up our calibration procedures across all of the disciplines that we cover and also simplified the tracking of customer's instruments.

"As well as our customers enjoying the benefit of having vital instruments returned to them quicker than ever before, the use of our IndySoft software has meant that we have significantly reduced the time spent in generating and issuing calibration certificates.

"Having made the decision to run with IndySoft's calibration commercial lab edition, we anticipated a complicated transition period from using our previous system. There were inevitably initial teething problems but we were surprised at how quickly we saw the benefits from the new system. After receiving excellent product training, throughout the short software changeover time IndySoft staff were available on the telephone to help with any questions we had. Our short IndySoft learning curve was also helped by the simplicity of the software and its logical steps.

"Although, prior to purchase we were convinced that the use of IndySoft commercial lab management calibration software would provide us with a major step forward, the software has proven even more advantageous than we anticipated. Not only has the speed and efficiency gained by the use of the software helped throughout our business, our customers are now receiving a faster and enhanced service from us."

IndySoft Calibration software provides businesses of any size the ability to manage both their internal quality needs and external customer demands, all the while

monitoring the day-to-day financial aspects of their operation. With support for leading enterprise platforms, commercial lab management is perfect for deployment on both growing and large-scale corporate systems. Through an exclusive process modelling engine, companies can configure their own event-driven system with checkpoints; rule sets and documentation at every point along the equipment path, ensuring assets are handled according to existing quality procedures.

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Dyna Line Portable from BIG KAISER

BIG KAISER, a leading company in premium high-precision tooling systems and solutions for the aerospace, automotive, energy, medical and watch-making industries, today announced Dyna Line Portable, a portable non-contact tool measuring system that delivers the industry's highest levels of accuracy.

Dyna Line Portable uses a linear image measuring system based on CMOS sensors with tiny 1.4µm pixels, enabling it to work to an indicating resolution of only 1µm. This means that Dyna Line Portable can measure a cutting tool diameter and total indicated runout (TIR) more precisely than laser-dot measurement systems.

The new system can measure tools in a range of 0.1 mm to 50 mm, using offsets for dimensions over 4 mm, and at rotation speeds of up to 400 m/min. As it is based on optical, non-contact operation, Dyna Line Portable avoids the risk of damage to delicate tools. When determining TIR, it can easily measure tools with an odd number of teeth, up to nine flutes.

Due to its portability, measuring only 232 mm x 132 mm, the new system can easily be carried around to measure different machines. It can be used with 6 C-cell batteries, and an eco mode reduces power consumption to maximise battery life, providing up to 5 hours of portable operation.

Dyna Line Portable has a clear, easy-to-use electronic control panel. For safety, a timer can start measurement at a pre-programmed interval of up to 999 seconds after shutting the machine door and starting tool rotation.

Peter Elmer, CEO of BIG KAISER says: "By applying CMOS image sensor technology, we have been able to achieve industry-leading levels of accuracy with Dyna Line Portable, without sacrificing portability or ease of use,"

Founded in 1948, BIG KAISER designs, manufactures and markets premium high-precision tooling systems and solutions for the automotive, mil/aero, energy, and microtechnology industries such as medical, electronics and watch-making. The global company has facilities in Switzerland, Germany and the USA. The product portfolio is 100 percent made in Switzerland and Japan and comprises more than 20,000 precision tools, which adhere to the highest quality standards.

BIG KAISER Precision Tooling
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Award winning Cygnus ultrasonic thickness gauge

The new MK5 Cygnus ultrasonic thickness gauge has been awarded an "Honourable Mention" by Red Dot Award for its design excellence in the most important competition for product design.

Earlier this year, Cygnus Instruments Ltd launched their new range of ultrasonic thickness gauges that were designed and manufactured using a twin shot injection moulded enclosure which has a soft but durable TPE outer skin, making them both comfortable and extremely durable, while the inner shell is strong, keeping the electronics totally sealed from the outside environments.

A panel of 38-member jury, from the Red Dot Award: Product Design 2015, awarded Cygnus Instruments with an "Honourable Mention" for their excellent design of these new gauges and particularly well-executed aspect of design work. Products that convinced the jury with a well thought-out design solution are recognised with this distinction. The international experts discussed and assessed each of the 4,928 entries from 56 countries but only the designs that displayed high quality and innovative power were given an award.

Following extensive customer engagement and working within industry standards, Cygnus Instruments developed the new range of ultrasonic thickness gauges which still use the well established multiple-echo technique for error-checked readings through coatings but also incorporates single-echo and echo-echo measuring modes for obtaining measurements in areas of extreme corrosion or back wall pitting.

The range has achieved the toughest American Military Standard MIL SPEC 810G for environmental protection and consists of five new models offering an array of new features including: Large colour A-scan and B-scan display; Two types of data logging options; Manual Gain Control; Bluetooth data transfer capability and vibrate alert to warn the operator when the measurement is out of tolerance.

Also featured is the MSI™ (Measurement Stability Indicator) which is used in single-echo and echo-echo modes. This clever and simple technique samples returning echoes to ensure they are all identical, if the returning echoes are identical the display changes colour or format which indicates the reading is stable and reliable.

While the new range from Cygnus Instruments offers many new features, the simple to use menu structure means that these gauges are quick to learn and simple to use.

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Electra cuts thick and thin at A W Clarke

A new LVD fibre laser is cutting material from 0.1 mm foil up to 15 mm plate at A W Clarke Engineering, opening up new markets for the Oxfordshire fabricator and machining company.

The 4 kW LVD Electra FL 3015 machine replaced a CO2 laser and is cutting stainless steel and aluminium, including extremely high-purity grades, as well as specialised materials such as Inconel and copper.

A W Clarke managing director, Mark Bourke says that, with the transition from CO2 to fibre, he has lost none of the company's capabilities on thicker plate but has gained new capabilities on thinner sheet and non-ferrous materials.

Established in 1966 by Mark's father, the company originally started off as a fabricator and bought its first CNC sheet metal equipment, a punch press, in 1985 from Shape Machines, which later became LVD. It has continued its relationship with LVD since that time, replacing machines every three of four years and moving from punch presses to a CO2 laser cutter and now to the Electra fibre laser machine.

The company has also invested in LVD forming equipment and currently operates a 3-metre, 135-tonne press brake with Easy-Form® Laser in-process adaptive bending technology. These are complemented by six Mazak machining centres, including 5-axis machines, large capacity turning and large bed mills that enable it to manufacture machined components up to 2 m long.

Mark Bourke says: "There are numerous companies that specialise in either machining or sheet metal and look for volume. We have joined machining and sheet metal together and aim to produce the more complicated fabrications. Low-volume, high-complexity work is our bread and butter."

The company also offers design and development services helping companies in markets such as aerospace, scientific research, cryogenics and the nuclear industry bring their products to market.

"We have a continuing investment programme for both our sheet metal and machining equipment and tend to update our machines every three to five years to make sure we have the latest technology."

He had held off making the transition from CO2 to fibre laser until the technology had developed to a stage where it could cut the thicknesses the company required with the quality it needed, but when he saw the LVD Electra at the 2014 EuroBLECH exhibition he realised the time was right.

"The technology behind the machine and its dynamic performance were impressive. It was designed from the floor up to suit the capabilities of the fibre laser, not just a new laser system put onto an old design of machine frame.

"The fibre laser has brought us into a different sector of the marketplace in terms of the products we can make.

We knew these markets were there, but we needed the technology to enable us to reach them.

"On materials such as stainless and copper we can cut the thinner gauges quickly and efficiently and the edge quality with the fibre laser is far superior. We can still do the heavier cutting too. With the LVD machine we are getting cutting speeds that are even better than we thought we would. So we haven't lost anything by moving from CO2, we have only gained."

For one demanding application in the renewables industry, the Electra is used to cut fine slits and profiles in 0.1 mm stainless steel shim. This is done in a special fixture to avoid distortion. Five layers of shim are then laminated in a jig and formed on the LVD press brake.

"It is the sort of thing that other people couldn't do and that we couldn't do without the fibre laser," says Mark Bourke.

He adds that the fibre laser offers huge advantages when it comes to engraving speed compared to a CO2 machine. One job on 2 mm stainless steel that involves a lot of engraving used to take around 12 to 15 minutes but is now down to about 3 minutes.

"Because of the industries we are in, we do a lot of engraving for part numbers, certificate numbers, material specifications and so on, as well as marks to aid manufacturing and assembly," he explains.

The laser is programmed offline using LVD CADMAN® software and this is also used to offline program the Easy-Form press brake. The company is currently investing £14k on installing fibre technology throughout the factory to link all the machines.

"We won't be keeping any programs on the machines anymore," says Mark Bourke. "As soon as the part is produced the program will be deleted. That way you know you are always making the latest version of the drawing. Everything is programmed offline. As well as the blank development, we are creating the tooling setup and the bend sequence for the press brake. It's all automated.

"The press brake operator just has to look at the screen and it will show him which tools to use, where to put them, which way to turn the product."

He says that the Easy-Form laser adaptive bending system is crucial for ensuring consistent bend accuracy.

"I wouldn't have a press brake without Easy-Form. With a laser you have irregular nesting so you are never going to get accuracy without it. If you bend something along a grain or across the grain it is different. You get different batches of sheet which are fractionally different in thickness and the bending comes out different. If you are making a one-off in Inconel you don't want to get it wrong and with the Easy-Form it is always right," concludes Mark Bourke.

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Laser drilling in the µm range: five axes do it better

New micro processing sub system makes technological leap industrially suitable

As a technology-leading OEM manufacturer of laser scan systems, SCANLAB AG has introduced a 5-axis micro-processing subsystem to the market. This scanner-based solution enables highly dynamic and precise fabrication of flexibly definable geometries. precSYS's five axes deliver a true technological leap with maximum flexibility and entirely new possibilities to develop and execute processes superior to typical percussion drilling, spiral drilling and trepanning. The system can, for example, create bore holes with positively/negatively conical or cylindrical walls, as well as round or eliptical entries/exits accompanied by high aspect ratios. Designed for ultra-short-pulse (USP) lasers, precSYS's bore holes are exceptionally clean cut and don't require post-processing. The very robustly constructed scan system is optimised for industrial usage. Its Ethernet interface and an industry-proven connector facilitate straightforward integration into automated production.

Numerous industries require processing in the micrometre region: applications range from ultra-fine bore holes for fine mechanics or automotive-industry injection nozzles all the way to electronics-industry micro-structuring and fabrication of textile-industry spinnerets. In conjunction with USP lasers, diverse materials such as glass, hard metals, ceramics and plastics can be processed burr-free and molten-free. There are no limits to creativity anymore, because SCANLAB's precSYS newly defines the prior limits.

This micro processing sub system lets you freely define geometries for bore-hole creation that's both precise and long-term stable. The possibility of rotary motion, coupled with flexibly adjustable angles of laser incidence, enables fabrication of negatively conical, cylindrical and elliptical bore holes far finer than 80 µm. And they can possess very high aspect ratios (small bore diameter with large depth at the same time).

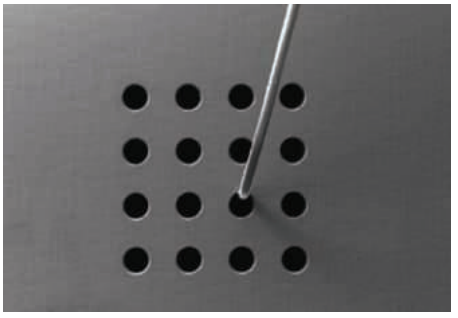
Designed for automated series manufacturing

When developing the 5-axis micro-processing subsystem, SCANLAB placed great emphasis on industrial suitability. The system has modular construction and active water cooling. Its sealed, gas-purged beam path always ensures cleanliness. This makes precSYS a low-maintenance product with resilience against fluctuating temperatures, ablation particles, dust etc. It is very precisely factory-pre-calibrated and can be equipped with optional automatic fine alignment. The system offers two observation ports for process-monitoring add-ons.

The standardised interface for XML data exchange allows straightforward remote connectivity to SPS controls, and thus integration into modern automated manufacturing environments. Operation and management of one or several systems can be performed via user-friendly and intuitive control software. Graphical 3D visualisation of laser motion paths facilitates effortless job programming and verification.

"Initial feedback from customers that have tested precSYS is consistently positive," says SCANLAB CEO Georg Hofner. "All users particularly praised the wide-ranging freedom in fabrication strategies, as well as the high-quality processing results and quick installation thanks to stable system construction."

Test systems are available upon request. precSYS series production is scheduled for early 2016.



With over 20,000 systems produced annually, SCANLAB AG is a world-leading and independent OEM manufacturer of scan solutions for deflecting and positioning laser beams in three dimensions. The exceptionally fast and precise high-performance galvanometer scanners, scan heads and scan systems find application in industrial materials processing and the electronics, food and beverage industries, as well as biotech and medical technology.

For nearly 25 years, SCANLAB has secured its international technology leadership through pioneering developments in electronics, mechanics, optics and software, as well as the highest quality standards.

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Groundhog accommodates Bystronic fibre laser

Automated fibre laser cell triples cutting speed and slashes idle times

Welsh firm Groundhog (UK) manufactures Health and Safety Executive-compliant welfare units in which staff working on construction projects, railways and other sites can wash, change their clothes and eat. The company was one of the first to introduce mobile facilities so that contractors can avoid the costs of transporting and installing static welfare units. The idea proved highly successful and today, 30 years since Groundhog was formed, business is booming. The size of the factory in Neath was increased from 20,000 to 50,000 sq ft in 2007 and an adjacent machine shop double that size is currently being built.

Production of mobile welfare units has doubled over the past few years to 20 per week, while static units have risen from two to five per week. Highly productive machine tools are needed to support such rapid increases in throughput, together with the use of automation where appropriate.

Matthew Stevenson (left), design manager at Groundhog (UK) and David Larcombe, managing director of Bystronic UK in front of the automated BySprint 3015 fibre laser cutting cell at Neath

The latest example of investment in new production plant was the installation in June 2015 of a 3 kW BySprint 3015 fibre laser cutting machine equipped with a ByTrans 3015 Extended 12-shelf system for automated handling and storage of sheet metal. It joined an automated turret punch press installed in 2010 and took over from a Bystronic CO_2 laser cutting machine with manual sheet loading and unloading that had been in use since 2006.

The sides, roof and doors of welfare units manufactured by Groundhog (UK) are made from 1.5 mm thick sheets that are cut three times faster on the new Bystronic fibre laser compared with the former CO_2 laser machine

Matthew Stevenson, design manager at Groundhog says: "The combination of the manually loaded CO_2 laser cutter and our automated punch press, even with the latter running lights-out, could not cope with the doubling of production volumes. The benefit of around-the-clock operation was apparent, however.

"There is not enough space in our current factory for two laser machines, so we decided to replace the CO_2 model with the Bystronic fibre laser. Its chiller and other peripherals are compact and the machine is equipped with the manufacturer's ByTrans automation system, which actually takes up less space than the previous laser machine's manual loading area.

"Not only does the cell operate 24 hours a day, unmanned after our 8.00 am to 4.30 pm day shift, but it also laser-cuts 1.5 mm thick mild steel sheet three times faster and

with greater consistency than our old CO_2 laser, which was of the same power.

"We are now cutting at 18 rather than 6 metres per minute, profiling the sides, roof, doors and other parts of our products. Combining high processing speed with low idle times for sheet exchange has dramatically raised the throughput of our welfare unit components."

A feature of Bystronic's control software, Bysoft 7, is its ability to tag components automatically during overnight running of the fibre laser so that they remain joined to the skeleton by thin strips of material. During the day shift, when an operator is in attendance to keep an eye on production, tagging is unnecessary as slippage of a component through an aperture to the underside of the sheet can be detected visually.

During unmanned production, however, the addition of small tags ensures that unscheduled stoppages and lost production are avoided. It is an easy job to remove the tags when shaking parts from the machined sheets in the morning.

David Larcombe, managing director of Bystronic UK points out: "Customers see a real benefit in being able to add or remove tags on the machine at the press of a single button. Typically it can be quickly done when an operator leaves the machine for unattended running.

"The operator only has to set the minimum size of component to which tags should be applied to stop them tipping and it is carried out by the control, while larger parts are left untagged for easy removal."

Matthew Stevenson cited other advantages of fibre laser cutting over CO_2 technology. Significantly lower power consumption saves running costs, no expensive consumable gases are needed and maintenance is simpler, providing further economies.

Quality of cut is also better. Dimensional accuracy is within ± 0.05 mm, ensuring trouble-free bending and assembly of products. Additionally, no burrs are left on the material surface, eliminating the need to fettle components by hand, which can spoil the appearance of components.

While there is a three-fold speed advantage when cutting thinner materials, which is important as 1.5 mm gauge accounts for 60 percent of the 100 tons of steel processed per month, thicker metals can be cut efficiently as well. For example, steel up to 15 mm thick has been through the BySprint Fiber, as have 8 mm 310 stainless steel and 10 mm aluminium.

Matthew Stevenson explains that this thickness of aluminium is five times greater than a CO_2 laser is able cut and the quality of the fibre lasered edge is markedly superior. Previously, thicker reflective materials were guillotined on site if straight edges were needed or sent out to a water jet cutting specialist for profiling, at extra expense.

Groundhog also takes advantage of the accuracy of Bystronic press brakes to bend the laser-cut sheets. Two early models of three metres and four metres capacity date back to the period before Bystronic bought Edwards Pearson. Latest machines are a 2.5 metre capacity Xpert press brake and an order has been placed for an Xpert 40, the supplier's latest model launched at Blech 2014.

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Large investment in latest generation automated TRUMPF fibre lasers

Coventry-based HTA Group has demonstrated the size of its ambition by investing more than £2 million in automated TRUMPF laser profiling technology, a sum unparalleled in the UK. The equipment comprises two 5kW TRUMPF TruLaser 5040 fibre laser cutting machines (4 x 2 m format) featuring groundbreaking BrightLine fiber technology and SortMaster part sorting automation. Furthermore, both machines are connected to a TRUMPF TruStore 3030 storage system via LiftMaster Store, loading and unloading automation.

HTA Group has come a long way since it was established in 1973, today boasting some 90,000 sq ft of floor space, 135 employees and £12 million annual turnover, making it one of the UK's largest subcontract manufacturers. Indeed, the company's growth was the predominant reason that the London Stock Exchange listed HTA Group on its latest '1000 Companies to Inspire Britain' list.

One of the underlying reasons behind the company's impressive year-on-year growth is its planned programme of continuous investment in the latest manufacturing technologies, of which the £2m+ investment in TRUMPF equipment is the latest and most impressive example. The installation will help the company enhance its customer offer, namely the supply of laser cut parts and fabrications for industries that include construction, automotive, defence, rail, renewables and oil and gas, to list but a few.

"We wanted to take our profiling capability to a whole new level, using the very latest technology available," explains managing director, Adam Thomas. "It was clear to us that solid-state lasers were the way forward, particularly with the advent of TRUMPF's BrightLine fiber technology, which makes it possible to cut the full spectrum of material gauges, even thick parts, using a solid-state laser."

Using BrightLine fiber, it's possible to switch from thin to thick sheet processing on a single machine platform without any loss of quality. Up to 25 mm thick steel, stainless steel and aluminium can be cut using a solid state laser with excellent edge quality. In short, BrightLine fiber is a technology that enables vast beam diameter adjustability, a capability that conventional fibre lasers lack.

"Being able to exploit the speed of our fibre laser cutter on all gauges is very exciting, particularly in light of the recent trend for reshoring contracts back to the UK in industries such as automotive," says Adam Thomas. "BrightLine fiber, in combination with the extensive automation capabilities of our new investment, makes HTA very attractive to automotive OEMs and tier suppliers."

HTA is no stranger to TRUMPF technology. The company acquired its first TRUMPF laser cutter in 2005, a TC3000R and today there are no less than six TRUMPF flatbed laser cutters on site at Coventry, along with one punching machine and seven press brakes. TRUMPF's TruTops programming software is used throughout.

The company uses its new fibre machines to process material ranging from 0.4 to 25 mm thick. Moreover, the use of fibre laser cutters means the company can also process reflective materials such as brass and copper (up to 10 mm), as well as the more typical materials like mild steel, stainless steel and aluminium. Full automation ensures material loading, finished part removal and part sorting is taken care of without human intervention, while the TruStore 3030 can house up to 200 tonnes of raw material, all accessed via LiftMaster Store automation.

The ISO9001 accredited company processes everything from simple laser cut blanks to complex fabricated packages in runs from 1-off to 20,000-off. Among HTA's TRUMPF press brakes is a 4 m model, ensuring that the company can both profile and form, from 4 x 2 m sheet sizes.

"We have experienced tremendous growth at HTA, particularly in the past five years," says Adam Thomas. "However, due to the speed of the fibre laser cutters and the accompanying automation, for the first time in our history our capacity extends to over 1000 hours per week, a proportion of which is presently spare. It is good to have capacity to work with some new customers who we believe will come from sectors such as automotive, rail and construction equipment."

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Investments in machinery for laser cutting firm

Accurate Laser Cutting, a leading UK specialist in laser cutting and pressbrake services, has further improved its operations by adding a Bystronic 6 kW BySprint 4020 Fiber laser and two Xpert pressbrakes to its plant at its headquarters in Oldbury, West Midlands.

This latest range of equipment was purchased to provide a much needed boost to machining capacity and has strengthened the laser cutting capabilities with an expanded material thickness range of 30 mm aluminium and 25 mm for mild and stainless steel. The fibre can also cut 15 mm thick brass plate and 12 mm copper, compared with a maximum sheet thickness of 2-3 mm when processed on CO_2 laser equipment. It also raises the maximum size of sheet metal that Accurate Laser Cutting can handle from 3 m x 1.5 m to 4 m x 2 m.

A significant improvement in cutting times and a superior edge finish are just a few of the additional benefits the Fiber laser has to offer their customers who can range from general fabricators through to shop fitting and signage companies. Company director Steve Morgan says: "Our investments have proved a huge success with overall production efficiencies increasing by 40 to 50 percent in the last few years. In the case of the Fiber laser we are looking at a 300 percent increase in cutting speed when processing thinner materials."

Meanwhile, the installation of two high end Bystronic CNC Xpert pressbrakes means the company now have a pressing capacity of up to 320 tonnes and the ability to fold materials up to 4 m in length and 25 mm thick. The manufacturing process is also backed up with an upgrade to sophisticated offline CAD/CAM software BySoft7. This operates seamlessly with design programme SolidWorks to drive the Bystronic machinery to its optimum performance and offer an improved nesting capability.

Collectively, the newly acquired fleet of Bystronic equipment allows Accurate Laser Cutting to offer a highly efficient, precise metal profiling service and the infrastructure to become a one-stop-facility for a wide range of metal cutting and bending requirements. They are capable of catering for anything from one offs and prototype work through to high volume, large batch quantities. Improved rates of production have also resulted in shorter lead times for customers.

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Prima Power delivers automation and lean manufacturing at Stevens & Carlotti

Automation was the key driver for Stevens & Carlotti's investment in Prima Power according to Marco Carlotti, director of the Sandwich, Kent-based company, which has been operating since 1967 and using laser cutting technology since 1999.

Stevens & Carlotti focuses on the needs of its customers, delivering large volumes of components and assemblies at competitive cost. The markets it serves include power generation, street furniture, pumps and security entry equipment.The first investment for the company with Prima Power was in two 4 kW Prima Power Platino CO_2 lasers in 2005 and 2007. One has a Prima Power Tower Server and the other a Compact Server. For the installation, the Tower server was modified by Prima Power to fit into the workshop with a shuttle trolley and crane to take the weight of three tonne packs of sheets and make use of an existing crane rather than a forklift.

Chris Cooper at the E5x with Compact Express

Marco Carlotti says: "When we made this investment, it was a crucial time for our business with a big expansion in customers and workload. We had identified a bottle-neck around the laser so, by replacing the existing laser with a Prima Power Platino and automation, we could continue working day and night unattended."

As well as the increased capacity provided by the automation, the Platino lasers proved to be faster than the previous machines and had a smaller footprint. The company cuts material from 0.9 mm thick up to 20 mm thick, using nitrogen for thin material and oxygen on thicker steel.

Marco Carlotti adds: "The reliability of the lasers and the Prima Power Servers has been very good and it gave us the confidence to make further investments with Prima Power."

Since then, Stevens & Carlotti has added an E5 punch with LST automation and a BCe panel bender with robot loading in 2012 and an E5x punching machine with Compact Express load and unload in 2015. The punching machines and panel bender are in a new building which is a designated punch and fold unit to minimise handling and transport. The laser workshop is just next door, so laser cut panels can also be easily moved to the BCe panel bender. The BCe automated panel bender is ideal for a large number of the parts produced on the punching machines. The part picker handles the components very quickly and efficiently, turning and presenting them to the panel bender to fold complex shapes that would be very difficult on a press brake.

Marco Carlotti continues: "The BCe panel bender is 5-6 times faster than the press brake. It certainly makes life easier and has eliminated the bottleneck on the press brakes, as most material over 2 mm thick now goes through it. We have won a high profile contract thanks to this machine. It has doubtless reduced our lead times and increased our capacity for this type of panel bending work."

Both the E5 and E5x punches are servo electric, which has a positive impact on the workshop environment with less noise and lower energy consumption.

Marco Carlotti says, "The Prima Power punches enable us to process 3-4 times more work than the machines they replaced. We have even moved parts back to punching which were previously lasered, as it is more economical, especially for parts which are generally rectangular in shape.

Prima Power BCe panel bender with robot loading

E5 punching machine with LST automation

We also use a Wilson wheel on some parts to shear profiles, which further increases our capacity and flexibility."

Investing in Prima Power machinery has enabled Stevens & Carlotti to achieve its lean manufacturing ambitions. Customers have been impressed with the level of sophistication provided by the new equipment and it has helped the company to retain existing business and get new contracts and customers.

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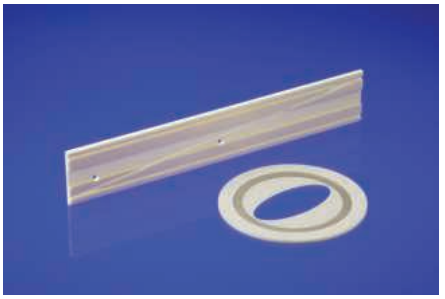
Morgan expands supply capability of laser components in Europe

Morgan Advanced Materials, a global leader in specially-engineered ceramic materials for industrial applications, has extended its laser equipment manufacturing capability and product portfolio in Europe. Two of its European production facilities are now working in close collaboration, allowing Morgan to provide a comprehensive package for existing and prospective customers.

The two facilities, based in Rugby, UK and Erlangen, Germany, are combining their technological and manufacturing expertise, drawing on Morgan's unrivalled range of proprietary materials to deliver an enhanced portfolio of products including laser reflectors, ceramic-to-metal feedthroughs, and waveguides.

Used predominantly in laser pumping cavities in solid state lasers, Morgan's laser reflectors are primarily composed of Sintox AL alumina, a purpose-designed material with a porous structure used for its high reflectance properties over a range of wavelengths. Its feedthroughs are best suited to a range of applications such as ionisation, water-cooled electrical



connections and trigger assemblies for gas lasers. Ceramic waveguides are incorporated into CO_2 lasers, where the reflective and refractive properties of the Deranox 970 and AL300 materials used assist with creation of the light beam in the chamber. They are designed to have compact size, helping to minimise machine footprint.

This collaboration will facilitate the exchange of knowledge and best practice that will optimise technological capability of the two sites. Also, as Application Engineers integrate their understanding of the market requirements, they will be able to enhance and expand Morgan's offering to its customers.

Oliver Ridd of Morgan Advanced Materials comments: "Rates of growth in the laser reflector business have been favourable this year and with steady growth expected into 2016, we are continuously taking steps to improve our manufacturing capability, to satisfy thriving global demand for laser product components. As part of Morgan's continued expansion, we are welcoming enquiries for larger, more complex projects. By working together, our facilities in Rugby and Erlangen aim to harness expertise across both businesses in conjunction with our shared understanding of customers' requirements to deliver unrivalled levels of service. We now offer a larger portfolio of components and assemblies for laser applications, custom designed in collaboration with our customers."

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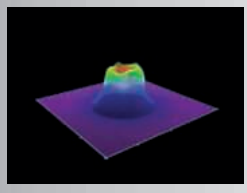

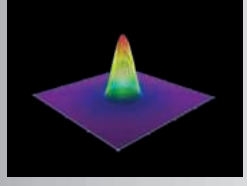


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£1 million investment to ensure another 35 years in business

Laser cutting and Sheet Metal expert, Intec Laser Services Ltd celebrates 35 years of trading later this year, and to mark this special occasion the company has invested £1m in two brand new state-of-the-art machines to cope with increased demand from what seems to be an increasingly buoyant manufacturing sector.

In 1980, the Midlands-based, family-owned company, headed up by pioneering engineer David Millar installed one of the country's first laser cutting machines in Redditch to provide a cost-effective solution for producing and supplying precision cut profiles in both small and large batch quantities. 35 years on, and still based in Redditch, the firm has taken delivery of a laser cutting machine that has the most up to date technology currently available.

TRUMPF's flagship 5 kW "Brightline" fiber laser machine gives Intec the ability to process materials up to 10 mm thick at ultra high cutting speeds, whilst providing the power to cut up to 25 mm thick mild steel and 20 mm thick stainless steel.

David Wheatley, Intec sales and marketing manager comments: "2015 is going to be a very exciting year for Intec and it is already shaping up to be the best trading year since the recession knocked back the manufacturing sector in 2008. These new machines will allow us to penetrate new markets and investigate deeper into the ones which we currently service. The fibre machine is incredibly fast on materials up to 6 mm thick, including brass and copper, which means that we can reduce the amount of time it takes to process the jobs and offer our customers potential savings on their parts."

In addition to the fibre laser, the company also installed a new TRUMPF 7040 twin cab 5-axis laser cutting machine in February to replace its previous 5-axis machine. The machines are used to provide three-dimensional cutting of parts that have already been deep-drawn, formed or manipulated.

General manager, Darren Marson says: "Our new split cabin production cells enable a cost effective and repeatable process which is now becoming the industry standard for the production of body and white interior panels for the automotive industry, where high strength, low weight panels are required. Over the past 12 months we have noticed an increase in demand from our customers for three-dimensional manufacturing and we wanted to invest in a machine that can handle everything they require. Since it has been up and running, we have provided cutting solutions for a very diverse range of industries, including architectural specialists, fencing companies, bespoke lighting for super yachts and of course many automotive applications."

Investment has not only been confined to the most up to date machinery. Intec Laser is currently in the process of recruiting a number of personnel for the roles that the expansion has created. It has also recently placed an order for an industry specific MRP system which will revolutionise the way the company runs each department from quotation through to dispatch. The new system will use bar-coding for traceability and transparency, which will bring even more efficiency.

The company now plans to spend the next six months working hard on its new marketing strategy to help raise its corporate profile. To showcase the services it provides, Intec has commissioned a corporate video to be filmed in June. It will also be exhibiting at the Advanced Manufacturing Show at the NEC in November.

For more information regarding the types of services Intec Laser provides, contact:

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UK's first Amada ENSIS 4020 laser cutter order

YSS Ltd, a Halifax-based fabrication specialist, is the first in the UK to order a new Amada ENSIS 4020 AJ fibre laser cutting machine. The patented ENSIS variable beam control unit allows users to move between fibre and CO_2 style beams for cutting both thin and thick materials. This is in marked contrast to conventional fibre laser cutting systems that require higher power to cut thick mild steel.

A significant advantage which attracted YSS to the ENSIS is that profiling of both thin and thick materials is achieved using just 2 kW of laser output from the integrated, Amada-built ENSIS2000 oscillator. Needless to say, the resulting savings in energy and running costs are little short of dramatic. In trial cuts at last year's EuroBLECH exhibition in Germany, power monitoring equipment showed that a 20 mm thick mild steel part produced on a 4 kW CO_2 laser cutter drew 63 kWh of electricity, whereas the 2 kW ENSIS required just 15 kWh.

YSS was established seven years ago by current managing director, Darren Brown and, through the acquisition of other established metalwork businesses and continual investment in new technologies, has placed itself in a strong position to offer competitive solutions to diverse market sectors. Indeed, the company is currently in the process of extending its current manufacturing facility in Halifax. YSS also operates a powder coating and finishing plant in Dewsbury.

The new Amada ENSIS 4020 AJ complements two existing Amada flatbed 4 kW lasers including an LC3015 F1 4 kW with ASLUL tower. Together, the machines allow the company to offer an efficient and precise engineering service, at speed. Improved productivity means YSS can usually offer better lead times than its competitors: 24-hour capacity for the production of everything from one-offs and prototypes, through to large batch quantities, is available. With regard to laser cutting capacity, up to 25 mm mild steel, 15 mm stainless steel and 12 mm aluminium can be provided.

Complete with high torque motors and helical rack drives in the X/Y axes, and a carriage with a low centre of gravity, the ENSIS offers processing feed rates of up to 100 m/min. Furthermore, Amada's integrated AMNC-3i control facilitates reduced setup time via its automated nozzle change capability. Ultimately, ENSIS allows for setup free processing, regardless of what type of metal and thickness needs to be cut.

UK's first 3015 installation

Following YSS's order, Generic Punching Systems Ltd, Netherton, West Midlands has installed the first Ensis 3015. GPS is a rapidly expanding family business specialising in laser cutting, CNC turret punching and CNC bending.

The main industries the company supplies to are: construction (rain screen cladding, flashings, architectural features, bracketry, and steel work, commercial vehicle supplies (bulkheads, shelf and cupboard systems), medical suppliers (vibrating cleaning machines, camera trolleys), commercial catering and food preparation companies (cooker hoods, preparation tables, refrigeration units, conveyor and separating systems), and shop fitting services (from signs to shop interiors, including hanging rails and bracket systems).

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LNS turns to Mazak to boost laser productivity

LNS is a big name in machine automation and peripherals, boasting strong relationships with all the major machine tool manufacturers. So, when the company identified a significant risk factor in its laser cutting operations, it turned to one of its major customers, Yamazaki Mazak.

Walk into a machine shop nowadays and there is a good chance you will see the distinctive LNS logo alongside the latest generation of machine tools. Founded in Switzerland in 1973, the company is now a world leader in the field of machine tool peripherals: everything from chip conveyors, through to barfeeders, coolant management systems and air filtration systems, such as mist extraction.

Nigel Hampson, head of sales for LNS Europe, with the Mazak OPTIPLEX 3015 II in the company's Barnsley manufacturing facility

In fact, so successful has LNS been in recent decades the company can now boast manufacturing plants in China, Taiwan, United States and Japan, along with an assembly plant in Switzerland. In all there are more than 120,000 bar feeders in operation across the world; around 100,000 chip conveyors units sold globally; and an increasing presence in the supply of high pressure coolant systems.

"Our goal is to become the global partner of choice for companies who want to automate their manufacturing processes with innovative solutions," says Nigel Hampson, head of sales in the UK. "The ethos of the company is problem solving, providing solutions to machining problems that machine users are experiencing."

Sheet metal cut on the OPTIPLEX 3015 II is welded at LNS Europe's Barnsley manufacturing facility

LNS's Turbo MH series filtration conveyor is a good example of the company's commitment to innovation.

"A Mazak customer had an issue with swarf due to the high volume nature of the cutting," says Nigel Hampson. "We worked with Mazak to develop a new type of filtration conveyor system, which combines a hinge belt conveyor, a scraper conveyor and a brush system, to clean the filter boxes. The Turbo MH series that was developed is capable of constantly recirculating coolant and taking the swarf away with virtually no machine downtime."

This commitment to innovation and customer service has resulted in the company's Barnsley facility working three shifts a day to keep up with demand. When visitors walk through the facility, it is easy to recognise the importance of the company's sheet metal cutting operations. At the far end of the facility is the laser cutting machine, which then flows into the welding, assembly and finally paint spraying. The potential for any problems with sheet metal cutting to impact the rest of the manufacturing process is clear.

"We had an older laser machine which

was manufactured in 2000 and was coming to the end of its operational life," says Steve Kirk, maintenance manager at LNS Europe's UK manufacturing site in Barnsley.

Increasingly, he was becoming concerned with the laser's downtime. "We had a couple of long periods, circa two to three weeks, when even the manufacturer was struggling to diagnose faults and the machine was down for long periods. The maintenance was outsourced which was an OK service, in that the supplier had it turned round in one or two days most of the time, but it was not a long-term option and the cost of parts was prohibitive and rising year on year."

"It never reached a crisis, because we had enough parts stockpiled that a few days of downtime was not a problem, but longer periods of inactivity were an increasing risk. To protect the business we needed to upgrade our laser capability."

Steve looked at a number of different machines but eventually settled on a Mazak OPTIPLEX 3015 II which is equipped with a high power 4 kW resonator and is capable of 120 m/min rapid traverse rate delivering ultra-high speed cutting times and exceptional accuracy. What swung the decision was the aftersales service that Mazak was prepared to put in place.

"This was a big decision for us and we needed our hands holding a little bit, particularly in the first few months. The quality of the aftersales service and the training was very good. I got the sense Mazak were prepared to support us through the process."

"We went through a learning curve in the first few months, however, our operators soon saw that the OPTIPLEX is a much superior machine. It's faster, more accurate and can cut through thicker metal. I would say we are 25-30 percent more productive. In fact, if anything our operators struggle to keep up with the machine."

Going forward, LNS has ensured that there is an option to automate its new machine. "The OPTIPLEX is prepped for automation, but we aren't using it yet. We manually load the sheet metal, but if demand continues at the present rate I can see a time when we have to go over to automatic loading. At least we have the option, by prepping for automation we have future-proofed our sheet metal cutting which should stand us in good stead," concludes Steve Kirk.

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Stockholder expands northwards

Metalex opens new branch in Birmingham

A KASTO automatic bandsaw designed for highly productive cutting of metals using a tungsten carbide tipped (TCT) blade has been installed at the latest branch to be opened by leading steel and non-ferrous metals stockholder, Metalex. Located on the Gravelly Industrial Park in Birmingham, the new centre became fully operational at the start of this year. Its purpose is to provide a more responsive service to customers from north Wales across the Midlands to East Anglia, as well as in the north of England. These areas are less accessible from the company's headquarters in Ferndown, Dorset and other branches in Horsham, West Sussex and Weston-super-Mare, Somerset.

The KASTOtec AC4 is one of two bandsaws currently installed at the Birmingham site. Its purchase was triggered by increasing work for a customer in the North that orders 150,000 high grade alloy steel parts per year. They are short, ranging from 7 mm to 12 mm in length, and are cut from 60 mm to 110 mm in diameter stock.

Metalex was started in 1993 by managing director, Paul Nicola, who comments: "Cutting tough steels is around three times faster with a TCT blade than when using a bimetal type.

A roller infeed conveyor assists movement of the stock into position

"Speed as well as accuracy of cut is important, as it allows us to make a reasonable profit and at the same time hold down the prices we charge customers and expedite deliveries.

"We also use TCT blades to saw stainless steel, aluminium, copper and brass on the KASTOtec up to the machine's maximum 430 mm cutting range and it is equally efficient at processing those materials."

The principal reason for the high cutting performance of KASTOtec 'carbide specification' bandsaws is the combination of measures the German manufacturer has taken to minimise vibration, which is the main enemy when striving to make fast, accurate cuts and maximise blade life.

The high quality, one-piece construction of KASTOtec bandsaws includes a saw head containing polymer concrete, which has a dampening effect during operation. On entering and exiting a cut, when blade support is lower due to the smaller area of contact with the material, feed parameters are backed off to control vibration.

The machine in Birmingham has been fitted with the KASTO Performance Cutting (KPC) package, a factory-fitted option that improves productivity further. Key additions include improvements to blade guidance either side of the cutting area and other measures to dampen vibrations.

One such measure involves spring-loaded tensioner guides mounted at the returning side of the blade, inside the top of the saw head guarding. They have the effect of suppressing vibration on the side opposite the cutting action. Other features are rigid guidance of the blade either side of the point of cutting, efficient cooling of the

280 mm diameter aluminium bar being delivered by fork lift truck to the KASTOtec AC4 bandsaw at the new Metalex branch in Birmingham

blade and guides, and responsive measurement of the cutting force using a sensor at the back of the blade.

KASTOtec machines have twin column guides and linear slideways to prevent stick-slip. Cut length indexing accuracy of ± 0.1 mm is achieved by ballscrew actuation of the feed vice stroke. Rapid approach and retraction speeds reduce non-productive and cycle times further.

The EasyControl unit has an integral database for materials and orders. Intelligence built into the control selects optimal feeds and speeds according to the type of material and its cross sectional shape

The bar in position, ready to be clamped for cutting

A program being entered into the KASTO EasyControl

and area. After entering the order data, activating the function button '0 position' instructs a laser to detect the bar end and feed the material forward to the first cut length position, avoiding a trim cut and saving valuable production time.

Metalex started buying KASTO saws over 10 years ago and has four other models across its branches, including a high speed KASTOtec AM5 in Horsham dedicated to cutting aluminium using band speeds up to 1,500 m/min.

Paul Nicola concludes: "We pride ourselves on delivering a level of service and product quality that are way above our competition.

Close-up of the EasyControl touch-screen

"The only way to achieve this is to be near our customers, buy top quality materials and the best bandsawing and circular sawing machines on the market to cut it.

"The opening of our Birmingham branch and purchase of saws like the KASTOtec are proof that we are prepared to invest to maintain our market-leading position."

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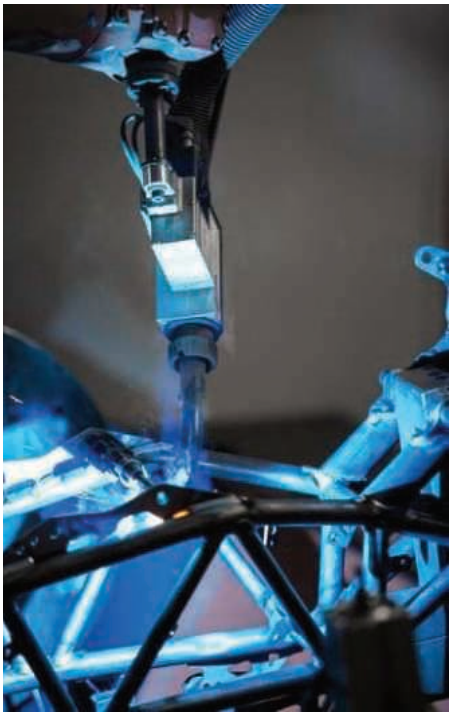
Pole position in welding technology

For the management of WP Performance Systems GmbH, success on the racetrack and the use of the most modern motorbike production methods go hand-in-hand. It was therefore no surprise that the company, one of Europe's largest manufacturers of motorbike chassis components, was among the first to test the MIG/MAG TPS/i power source from welding technology specialist Fronius. In view of the huge success, epitomised by significant increases in productivity, WP is now using more than a dozen devices from the TPS/i series for frame construction and exhaust manufacturing, and more are expected.

"The TPS/i is not just a development; it represents a quantum leap in all the areas that are important to us", is how Josef Baier, production manager at WP Performance Systems GmbH, summarises his experiences of working with the latest welding power source from Fronius. The manufacturing specialist bases his opinion not just on the welds he has carried out himself, but also on the results of the widespread use of the devices in frame and exhaust manufacturing. "There is currently no comparable device on the market. That is why we always turn to the TPS/i when we need to satisfy a requirement such as guaranteed penetration, high welding speed or a totally spatter-free weld seam."



Guaranteed penetration if stick out fluctuates

WP deems reliable penetration to be essential in the manufacture of motorbike frames. 98 percent of all the chassis welding is carried out by robots using 25CrMo4 steel. However, robots cannot carry out the remaining 2 percent, as they are unable to access the relevant locations on the tube intersections. These locations therefore have to be welded by hand. "It is imperative that the required penetration is achieved reliably, even in out-of-position welding or in the case of longer stick outs", explains Josef Baier. "This is where the penetration stabilizer of the TPS/i comes into its own." This innovative feature regulates the arc extremely quickly and precisely to ensure that the penetration remains constant whenever the stick out may fluctuate.

The company places another requirement on the quality of the weld seam, even though the TPS/i maintains the penetration at a constant level in the case of very long stick outs, a feature that in itself fulfils to previously unattainable levels one of the most important demands of WP regarding the weld seam. "It is only a few years ago that small amounts of spatter on the frame were considered acceptable by our internal quality control team. Today, that is no longer the case", emphasises the WP production manager. "We now expect even those areas that will later be completely invisible because, for example; they will be covered by the casing to be spatter-free."

The first totally spatter-free weld seams

Up to now, spatter has been almost unavoidable when welding manually, even in situations where the most advanced MIG/MAG devices were employed. "Some spatter always seemed to occur, particularly during the start and stop phases", reminisces Josef Baier. As the seams welded manually by WP during frame construction are very short, the company used to have to invest quite a bit of effort into cleaning them.

A fundamental change took place following the switch to TPS/i, as Josef Baier told us: "Now that we carry out the manual welding of the tubular sections of the motorbike frame exclusively with the TPS/i, we can say without any embellishment or exaggeration that the weld seams are spatter-free."

A significant factor behind this achievement are the new LSC (Low Spatter Control) dip transfer arc characteristics specially developed by Fronius, which, as they exhibit extremely high levels of arc stability, are mainly used by WP to weld the frame.

High gap-bridging ability on thin sheets

LSC Root was specially developed for root passes. Its unique current profile ensures excellent root fusion and gap-bridging ability. The outstanding gap-bridging ability of the TPS/i is especially welcome when it comes to exhausts, as the stainless steel, structural steel or titanium sheets used at

WP are usually only a millimetre thick. "With sheets this thin, there is always a danger that the weld seam will drop through", notes Josef Baier. "Thanks to LSC Root, however, this is not a problem that we face."

As with frame construction, WP is totally uncompromising in terms of quality in the production of its exhaust systems. Josef Baier has therefore ensured that the many weld seams that are visible on the exhaust are always welded using a TPS/i device.

As there are many more manually welded seams, not to mention some long ones, in an exhaust system compared with the frame of a motorbike, the welding speed that can be achieved in this application has a marked impact on productivity. This is another area where the TPS/i and LSC show their combined strengths. The new Fronius offering, with its higher root arc pressure and deposition rate compared with the previously available and implemented solutions, is again to the fore in terms of welding speed, as Baier can confirm from practical experience: "With the TPS/i, our welders achieve a welding speed that is about 20 percent faster than before."

Faster welding results in significantly higher productivity

WP manufactures all its own exhaust systems, starting with the metal sheets or 6 m long tubes made from stainless steel or structural steel as well as titanium sheets through to the silencers and exhaust manifolds. As a great deal of welding is involved in the production of exhaust systems, productivity since the introduction of TPS/i has increased dramatically, particularly in the manufacture of exhaust pipes. With the production of frame and exhaust systems running at more than 120,000 per year, the acquisition by WP of modern welding systems like these pays for itself within a few months as a result of the practically non-existent reworking requirement and the higher levels of productivity.

For Josef Baier, the role that this latest innovation from Fronius will have at WP in the immediate future is already apparent: "This power source will enable us to maintain and extend our leading position in welding technology. We have therefore decided to install TPS/i at every workplace where spatter-free weld seams are required." He enjoys the full support of his employees in this respect. "Once they've tried it, our welders seem reluctant to use anything else", concludes the WP production manager.

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TRUMPF develops pulsed, green laser for welding copper

With the TruDisk 421 pulse, copper welding is more efficient, generates fewer spatters and achieves greater reproducibility of the welded seam, regardless of the nature of the surface.

TRUMPF has developed a pulsed, green laser for efficient welding of copper, the TruDisk 421 pulse. This new disk laser, in pulsed mode, operates at the mean power of 400 Watts, generating laser light at 515 nanometers. Light in the green spectrum solves the problems previously experienced when using infrared lasers to weld copper.

The problem is infrared

Copper is an excellent conductor of both heat and current, making it a metal for many applications. Its advantages are put to use in the widest variety of industries and sectors. In addition to medical technology and the automotive, chemical and foods industries, copper is indispensable to electronics and electrical technology.

Due to ever more compact housings and the higher performance capacities of electronic components, demands on the production and joining technologies for copper components are also rising.

When using the laser to weld copper, beam sources with an infrared wavelength are commonly used. The two greatest challenges here are good reproducibility and low spattering. At a wavelength of 1,000 nanometers (IR), copper is highly reflective. Uniform welding seams, which will depend on the surface properties, can be guaranteed only to a certain degree, a degree that is often not sufficient for industry.

Spattering is a problem during deep welding. These spatters can damage the component and, in the worst case, cause short circuits on the board. Both can be countered by properly matching the laser parameters, such as the distribution of power density, the pulse width and the shape of the vapour channel. But despite this, the results are often still less than ideal.

What cannot be influenced are the surface tension and viscosity of copper. Both properties are lower, when compared with steel and they lead to a less stable weld pool. This is aggravated by increased energy loss due to the high thermal conductivity of copper. The pulsed green laser from TRUMPF brings about a considerable improvement in the process.

The solution is green and pulsed

To generate the green wavelength in the TruDisk 421 pulse, the frequency of the laser beam is doubled inside the laser resonator. The advantages of this green laser are many and varied. Copper absorbs the green light far better than the infrared. This means that the material reaches its melting temperature faster, the welding process starts quicker, and less laser power is required.

While the infrared laser works with 2.6 kilowatts of peak pulse power, the green laser requires only 1.4 kilowatts for the same welded seam. The process is more energy-efficient and far fewer spatters are formed. The green laser also improves the reproducibility of the results. Regardless of whether the surface is oxidised, ground, sandblasted, rough or polished to a high gloss, with green laser beams the copper welding seams can always be made at uniform quality.

Among the reasons for this is that absorption at room temperature is independent of the surface properties. The use of shielding gases like argon and nitrogen will result in a welded seam of even higher quality. These shielding gases can be used efficiently and sensibly only when welding with the green laser. When using the inferior infrared alternative, the surface of the weld pool reflects more strongly because of the gas. This means that greater laser power is necessary for welding.

Surfaces

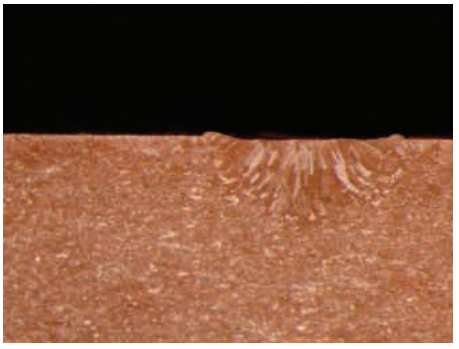
Regardless of whether the surface is oxidized, ground, sandblasted, rough, or polished to a high gloss, a green laser beam makes it possible to create welding seams in copper which are always of uniform quality.

Shielding gases

When welding with the green laser, shielding gases such as argon or nitrogen may be used. This results in a higher-quality welding seam.

In comparison:

Illustration a) using argon
Illustration b) without shielding gas



Illlustration a

Illustration b

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Nederman 'clears the air' for tube manufacturer

Processing over 30 tonnes of tube each week, Iracroft Ltd is a leading tube manipulation company, achieving its prominent market position through a program of continuous investment and diversification. This strategy has seen the Blandford Forum business invest over £2.3 m in new buildings and plant over the last five years.

The result has seen the Dorset operation increase its floor space from 4300 to 5770 square metres and its turnover more than double to £16 m in only five years. By taking on new units Iracroft has expanded or completely moved many departments to consolidate production and improve workflow. To support this, the rigid tube specialist has installed new dust and fume extraction systems to provide its staff with a clean, dust and fume free workplace that conforms to health and safety legislation such as the EH40 'workplace exposure limits'. Due to the size of the project Iracroft considered a number of potential solution providers, however it was market leading dust and fume extraction specialist Nederman that was selected.

Since its inception in 1972, the ISO:9001 & 14001 company has been manufacturing 1/4 to 3 in rigid tube assemblies such as air coolant and brake piping products for the yellow goods industry. Whilst household names such as JCB, Caterpillar, Ingersoll Rand, Hitachi and Terex form a robust customer base, part of the Iracroft engineering infrastructure investment has seen it recently diversify into stainless steel energy delivery systems and the offshore engineering sector. To cater for its organic growth and diversification, part of the Iracroft investment has been used to expand the tube manipulation, fabrication, orbital welding and oil pressure testing departments. In these departments, Nederman has been instrumental in delivering a clean working environment.

Building a compliance strategy

One of the first departments to be expanded at Iracroft was the brazing department. Commenting upon why Nederman was the chosen partner, Iracroft's director of engineering & continuous improvement, Kieran Mullen says: "We needed a full range of extraction solutions and Nederman has the most extensive product line on the market. Furthermore, the Nederman team project managed the solution with complete transparency and professionalism at every stage. The Nederman project engineers reassured us from quote to project completion with their technical expertise and understanding of our needs. Nederman worked closely with our welding and force arc vendors to create fully compliant systems that would also deliver maximum extraction with minimum impact on the operator workspace. Most importantly their professional project management team delivered a complete solution that required very little input and stress on our behalf."

By doubling the size of its brazing department, Iracroft replaced smaller less efficient extraction systems with 14 extraction drops to eight induction heating stations and a number of brazing benches. The 'at-source' extraction systems remove the brazing fumes to a single extraction point outside the building. For Iracroft, its concern was the generation of acidic flux fumes that could potentially cause a carcinogenic environment for its brazing team. By installing the Nederman Original extraction arms with an impressive air flow rate of 800 m^3/hr, the fumes are now efficiently extracted to a Nederman NCF120/15 fan unit outside the building. By project managing the complete process, Nederman complemented its flexible and user friendly extraction arms with a complete ducting system that delivers the brazing fumes to the NCF120/15 fan unit. With a maximum air flow rate of 12,000 m^3/hr and noise level of 66.4 dB, locating the NCF120/15 fan system outside the brazing department has also eliminated the continuous noise the staff may have encountered with an internally sourced system.

Breathing easy in the welding department
The effortless manner in which Nederman delivered a solution for the brazing section at Iracroft resulted in the Preston fume and dust specialist being invited to deliver a new bespoke solution for the welding department that has also expanded. This growth has evolved in the guise of 23 working bays being increased to 31 and a building extension to provide eight new MIG/TIG welding bays for the production of mild steel bracket assemblies. The existing preference of staff in this department is for the provision of downdraft benches, which the company already had in place prior to Nederman involvement. Added to this, the existing building had two roof mounted media filtration systems to extract any airborne particulate not caught at source by the benches.

By doubling the size of the department Iracroft needed to remove the additional airborne particulate to comply with the EH40 regulations. To meet compliance levels prior to the expansion, Iracroft's roof mounted extraction needed to achieve an 'air change per hour' rate of three, and it achieved close to this with existing systems. However, the area of the department was expanded to 210 square metres and a Nederman technical study of the welding department's air quality resulted in Iracroft requiring an 'air change rate' of 14 to comply with health & safety regulations. This was comfortably achieved by augmenting the existing extraction with three 2,550 m^3/hr rated Nederman MF 12-15 media filters installed at high level.

Nederman is one of the world's leading companies supplying products and solutions in the environmental technology sector focusing on industrial air filtration. The company's products and systems contribute to reducing the environmental effects from industrial production, to creating safe and clean working environments and to boosting production efficiency. Nederman's

offering encompasses everything from the design stage through to installation, commissioning and servicing. Sales are carried out via subsidiaries in 30 countries and distributors in over 30 countries. Nederman develops and produces products at its own manufacturing and assembly units in Europe, North America and Asia. The Group is listed on Nasdaq OMX, Stockholm and has around 1,950 employees.

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Welding its name to premium products

For the first time in its almost 130 year history, premium welding supplier Foster Industrial is fixing its name firmly in front of customers, with a range of own label welding accessories.

This forms part of Foster Industrial's investment in product development and strategic growth for the long-established firm. Foster Industrial is one of the largest suppliers of industrial gases, welding, cutting and abrasive products, supplying over 7000 stock products.

The team at Foster Industrial, led by operations director Anthony Ashford, has branded a concise collection of its most popular premium welding supplies including an auto darkening welding helmet, CE marked MIG welding wire, a robust Argon gas regulator, acetylene and propane gas cutting nozzles and Thoriated, Zirconiated & Lanthium TIG welding tungstens.

Anthony Ashford, operations director at Foster Industrial says: "This is the start of our own brand development and these initial products are of the highest quality and durability. When we researched

manufacturers for our own line of products it was imperative that the specification was spot on. We have also chosen the most popular items that we supply to launch with."

Richard Foster, joint managing director at Foster Industrial, added: "This is part of our investment into the brand name of Foster Industrial, which after nearly 130 years has a reputation for premium products and services. Selling our own brand means that customers will get the reassurance of knowing they are buying the best."

The new own brand range comprises; An auto darkening welding helmet with delay & sensitivity functionality; A top quality mild steel MIG welding wire in a range of sizes; A strong, durable & reliable Argon regulator for MIG & TIG welding; A range of Acetylene & propane gas nozzles suitable for cutting up to 150 mm metals.

Foster Industrial is the UK's longest established distributor of cutting and welding supplies and equipment. The family run business, established in 1886 is based on a 15,000 sq. ft. site in Shepshed near Loughborough and provides both products and technical support to manufacturers across the East Midlands.

Still run by the great grandsons of the founder, Foster Industrial's growing customer base includes the East Midlands top manufacturers, in sectors ranging from transport and aerospace, through to agriculture and shop fitting.

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The new SifWeld MTS 400 industrial welding package

Weldability Sif, the UK based "one stop source" for all welding products, has launched the SifWeld MTS 400, an electronically controlled MIG/MAG/MMA industrial welding package featuring IGBT inverter technology.

With clear digital displays, low-spatter, polarity reversal (for FCAW) and integral 4-roll wire feed system able to accommodate up to 15 kg of wire spools, the unit is designed for use in heavy-duty fabrication applications such as structural steel and marine/shipyard tasks.

The SifWeld MTS 400 can be used to weld mild steel, low-alloy, stainless and aluminium in solid and flux-cored MIG applications. It can also be used for DC MMA welding (DC+/DC-) and scratch-start TIG welding.

Its control system allows infinitely variable control of welding voltage, wire feed speed, crater current and burnback. The power source also benefits from 4T/2T torch-latching and gas line purging. It offers a high duty-cycle for applications requiring long runs, and features adjustable burnback control.

The separate, removable 4-roll wire feed unit offers four gear driven rollers and a counter-balanced wire tension system for precision wire feeding. The wire feed unit houses the wire feed speed and voltage controls as well as the wire-inching feature, to provide you with complete control of your feed rate when used remotely via the interconnecting cables, up to 10 m (optional extra).

The ergonomic design of the SifWeld MTS 400 incorporates an integrated MIG torch holder for easy storage whilst not in use and a wire spool cover to protect your wire from the elements.

A robust trolley accommodates a full size gas cylinder and includes a wire feed unit mounting bracket, which allows the feed unit to rotate a full 360 degrees whilst ensuring that your interconnecting cable is secured via the attachment bracket. The trolley also features a storage compartment for common spare parts to be stored.

The SifWeld MTS 400 features MIG, MMA and Smart-TIG functionality and comes with a 400V 3ph 32a input supply and supplies 400A DC output at 100 percent duty cycle.

Weldability Sif is a multi-million pound company operating from purpose built facilities in Letchworth Garden City, Hertfordshire that supplies MIG, TIG, MMA, Spot and Oxy/Fuel welding and Plasma cutting machines, torches, accessories, consumables and personal protective equipment to both the UK distributor market and exporting to a number of countries across the globe.

The company's Letchworth Garden City facility enables distributors to single source over 7,000 different products and the company to maintain their stock to high volume consumables including the distribution of over 8,000 tonnes of MIG welding wires per annum to the UK market.

The Weldability Sif catalogue now features 2,200 products, which represent the fast-moving consumable and equipment lines sold every day in the welding industry. Weldability Sif continues to offer the broadest and most comprehensive welding product portfolio available from a single UK source, and distributes via its network of trading partners, as well as through web and mail-order channels.

As The welder's one-stop shop, Weldability Sif products are known and trusted by many corporations across the globe, with a vast product user customer base ranging from car hobbyists right through to large multi-national industrial gas and engineering companies.

Offering a wealth of knowledge and experience, key members of the Weldability Sif management team have represented The Welding Institute in a voluntary capacity on several European Norm working groups, and have been appointed to the national executive of the association of welding distribution. Weldability Sif is also a voluntary member of the HSE welding partnership involved in researching and managing the "Respiratory hazards in the welding and cutting environment".

Much of what Weldability Sif have achieved would not have been possible without the help and support of its experienced and attentive staff, their loyal distributors and the ultimate end-users of Weldability Sif products, and this is increasingly recognised by the growing network of trading partners that have benefited from the promotion of the Weldability Sif product range.

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The world's strongest robot

FANUC has broken its own record launching the world's strongest robot at this year's EMO manufacturing trade show.

The M-2000iA/2300 can lift a staggering 2.3 metric tonnes and has a powerful IP67 wrist, enabling the robot to twist and turn entire car bodies by their side. The robot can reach over 3.7 metres and has a 6-axis to handle extreme heavyweight materials.

The M-2000iA/2300 operates within a variety of industries, performing both simple and complex tasks. In particular, its power and range make it ideal for the automotive industry and forgeries. The M-2000iA/2300's accuracy and flexibility of control also lowers the risk of damage to production material, while reducing running costs and increasing speed of production.

Tom Bouchier, managing director at FANUC UK says: "To be known as the company that has produced the strongest robot in the world isn't just about setting new records. We are continuing to push the boundaries of what is possible to provide a greater level of service for our customers. The robot is not only the strongest in the world but it is intelligent and agile, bringing increased flexibility and productivity to the production line, as well as increasing safety and improving the welfare of employees."

FANUC unveils the ARC Mate-100iC/8L

FANUC, a leading global provider of factory automation and robotics, has launched the ARC Mate-100iA/8L: the latest addition to its arc welding range.

The ARC Mate-100iC/8L has a wide reach of over two metres and a wrist payload of up to 8 kg for large work pieces and heavy duty welding, optimising motion for arc welding and increasing cost efficiency. The robot is equipped with the latest servo motors and control technologies, providing vibration-free positioning, fast axes speeds and accelerations to improve cycle time and product quality.

The robot is slim and lightweight, with a hollow wrist allowing for integrated gas, power and torch cables to be routed inside the arm. This design feature provides complete freedom of movement, avoiding cable interference, wear and tear, and

reducing maintenance costs. The robot's advanced modular design uses less energy than its predecessors, and maximises space on the factory floor with the ability to ceiling mount providing easier access and a greater working envelope.

FANUC Robotics (UK) Ltd
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www.fanucrobotics.co.uk

The perfect solution for every requirement

From 3rd to 6th November Blechexpo and Schweisstec, a combined tradeshow, will be held in Stuttgart. At the show Carl Cloos Schweisstechnik GmbH will present a wide range of manual and automated welding. (hall 6, booth 6407) Exhibition visitors can expect a wide range of welding processes for different materials and components.

The focus of the CLOOS exhibition booth is on an automated robot system which is equipped with an automated torch changing system. No matter if thick or thin, steel or aluminium, here you find the right welding process for every product requirement. The welding specialists will present the new tandem weld generation for process-safe and very quick and comfortable welding. With the cold weld process an alternating current produces a very special pulse form, which brings about an extremely low heat input. The laser hybrid weld process is the combination of a laser beam with a MIG/MAG welding process in one common process zone, thus using the advantages of both processes. The

narrow gap weld technology offers a particular economic efficiency for welding thick-walled component parts.

Avoid production downtime by an automated change of consumables

Another highlight is the new fully automated current tip and gas nozzle changer SpareMatic which allows non-stop welding with operative components. When the welding robot needs new nozzles, the automatic current tip and gas nozzle changer comes into play. The changer takes the torch consumables and replaces them for new ones. Due to its compact, modular design, the SpareMatic can be integrated into both new and existing systems.

High-quality power sources for manual and automated applications

Besides, CLOOS will present the wide QINEO model range of high-quality welding machines for manual and automated welding. The new QinTron inverter welding machine is characterised by a robust design, optimum ignition and welding characteristics and an excellent price/performance ratio. During live demonstrations of manual welding, trade visitors can experience the welding machines.

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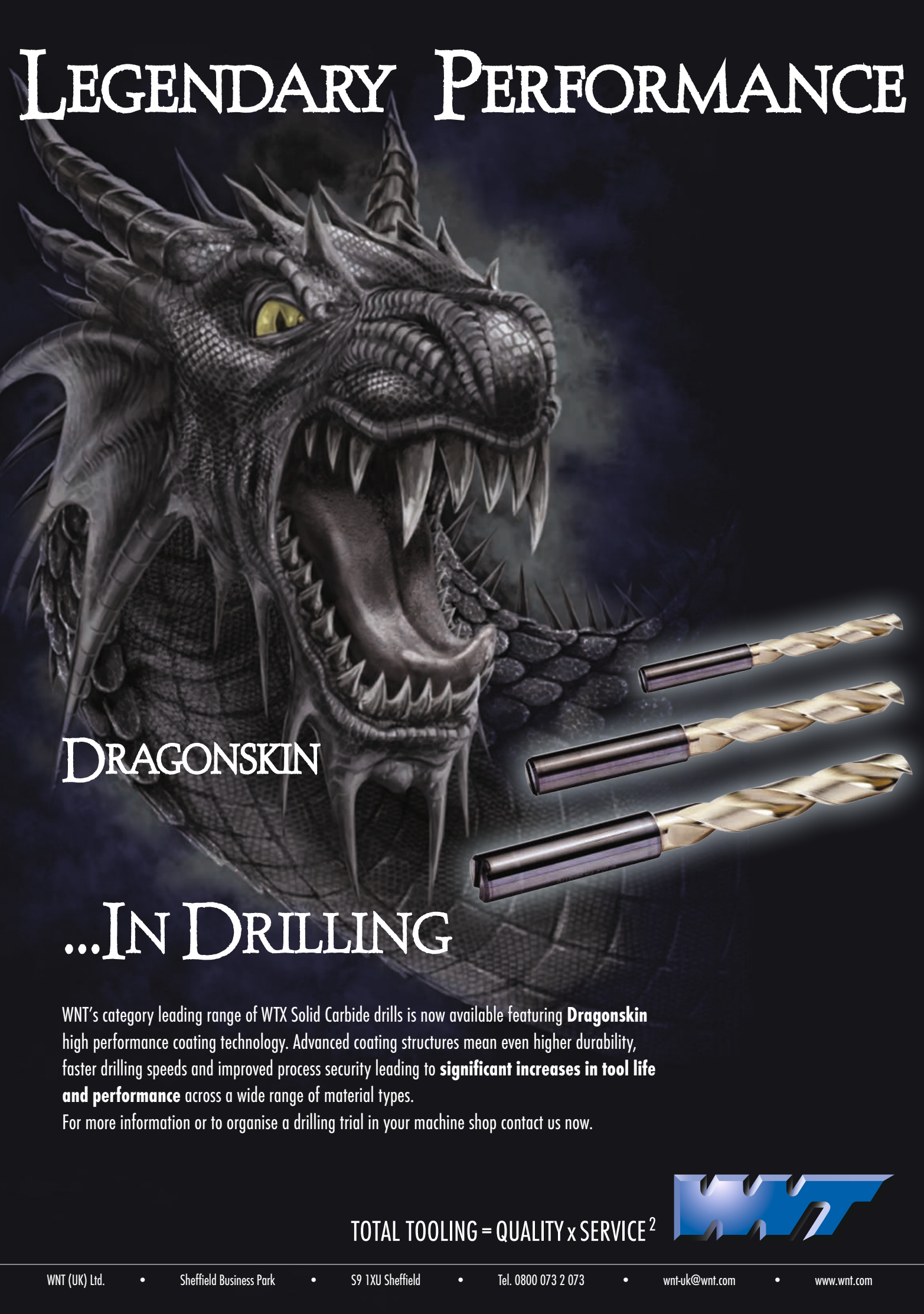

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