ENGINEERING subcontractor
MAY/JUNE 2023

Spring 2023 – Renishaw's 50th anniversary

REVO®

CMM system

Fast, accurate and flexible inspection capability on the shop floor

5-axis measurement

Enhance machine shops' capacity and bring new designs into production

Surface finish measurement

Increase productivity and eliminate the need for additional capital equipment

www.renishaw.com/revo

RENISHAW
apply innovation™

Thinking of buying a new Machine Tool ?

- ***Operates from 6 UK sites***
  From Scotland to Tiverton in Devon.
- ***18 UK Service Engineers***
  All fully trained, equipped and operational.
- ***Servicing and Spares***
  Immediately available on-line or by phone for next day delivery.
- ***Programming Helplines***
  Free access from real people who know.
- ***UK Application Trainers***
  Get even more from your controls with expert training.
- ***Parts Department***
  18,000 sq ft with over £2.5 million parts in stock.
- ***Warranties***
  12 months as standard with options to extend.
- ***Peace of mind***
  We're here to support you.

XYZ Machine Tools

01823 674200 | sales@xyzmachinetools.com

www.xyzmachinetools.com

Make sure you have the right support.

UK Service Teams

18 XYZ service vans all fully equipped with tools, spares and a qualified XYZ trained service engineer.

Support Helplines

Whether it's programming help or service advice we have experts on hand who know what you need.

Parts Department

18,000 sq ft of stores with £2.5 million in stock, we have the part you need.

80+ machines a month...

With over 300 machines in UK stock and over 20,000 in the field since 1984.

XYZ Showrooms | Livingston | Huddersfield
Sheffield | Nuneaton | London | Devon | Zabrze

mewa

Thanks to Mewa industrial cleaning wipes, the environment is becoming a little cleaner.

Mewa

ENGINEERING subcontractor MAY/JUNE 2023

Volume 20 • Issue 3 • ISSN 1742 -5778

Contents

JULY/AUGUST 2023 - Features:

- Aerospace Report
- CADCAM
- EDM
- Laser Cutting
- Machining Centres
- Laser Cutting
- Workholding
- Press Brakes

Published by Roger Barber Publishing

Publisher/Editor:
John Barber
Email: john@rbpublishing.co.uk

Accounts:
Jackie Barber
Tel: 01403 563791

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

Design & Production:
Roger Barber Publishing

Print:
Holbrooks Printers Ltd,
Portsmouth, Hampshire

Engineering Subcontractor is published six times a year and mailed to a controlled circulation of readers with a legitimate interest in the content.

Roger Barber Publishing stores all business data securely and does not share with third parties.

50 years of cutting-edge innovation from Renishaw

This year, Renishaw is celebrating its 50th anniversary. The company, which was founded on 4th April 1973, was formed to commercialise the invention of the touch-trigger probe by now executive chairman, Sir David McMurtry, that solved a dimensional measurement problem faced by Rolls-Royce when manufacturing the Olympus engines that powered the supersonic Concorde aircraft. The probe also solved similar challenges being faced by many precision manufacturers around the world, ultimately allowing measurement on Coordinate Measuring Machines (CMMs) to be automated for the first time.

David McMurtry and co-founder John Deer quickly saw the potential for the use of probes on CNC machine tools and in 1977, Renishaw launched its first commercial probe for machine tools. Although today, a significant amount of Renishaw's business is still derived from contact and non-contact measurement systems for CMMs and machine tools, it now supplies a wide range of metrology systems for calibration, position feedback and gauging, plus associated accessories including styli and fixturing. It has also applied its core expertise in measurement, manufacturing and process control to develop systems for non-destructive testing using Raman spectroscopy, robots and drug delivery systems for brain surgery. It is also a technology leader in the field of metal additive manufacturing, 3D printing.

Over the past 50 years, Renishaw's products have revolutionised key aspects of component manufacturing and scientific research, contributing to the ability to make the high performing, precision products that we use in our daily lives.

In 2005, Renishaw launched the REVO® 5-axis multi-sensor probing system, which was the most significant innovation for measurement on CMMs since the invention of the original touch-trigger probe. It uses synchronised motion and 5-axis measurement technology to minimise the dynamic effects of CMM motion at ultra-high measurement speeds. Since its launch, a wide range of sensors have been developed for the REVO system, now allowing a single CMM to undertake fully automated measurement of a range of features that previously required additional dedicated equipment. This includes contact, non-contact, surface finish, temperature and ultrasonic thickness measurement.

Will Lee, Renishaw's chief executive says: "This is a year to reflect on the tremendous achievements of our co-founders and employees past and present, who have done so much to advance precision manufacturing globally and to look forward with confidence to future decades of innovation and growth."

Renishaw plc Tel: 01453 524524
Email: uk@renishaw.com www.renishaw.com

Erodex inspires the next generation with innovative VR experience

Erodex UK, the specialist in graphite and graphite machining for the aerospace industry, have launched an innovative virtual reality experience to inform and inspire engineering students at a local college towards a career in their industry. Over a period of two days, team members from Wednesbury based Erodex ran four sessions for over sixty full time engineering students at the City of Wolverhampton College.

The sessions were the first to include a new virtual reality experience, which enabled students to get a first-hand 3D insight into Erodex's state of the art graphite machining facility, hear from a range of team members and, more broadly, gain an understanding of the variety of roles available at a company like Erodex.

The virtual reality experience was complemented by 'meet the employee' Q&A discussions including former apprentice and current production manager Ellie Emery, engineer and apprentice mentor John Webb and James Kirk, operations director.

During the sessions, students were also set a task to complete in small groups with the aim of enhancing their learning experience and providing more depth to their level of insight into real world engineering. This required them to inspect several graphite machined electrodes using digital micrometres, comparing each to the kind of exacting quality standards that apply across all components produced for the aerospace industry.

Students were then informed of the apprenticeship roles available this summer at Erodex, with those interested in learning more being invited to apply for work experience placements with the company.

James Kirk comments: "Like so many engineering firms Erodex are looking to the next generation to future proof our workforce. 2023 sees the relaunch of our apprenticeship scheme, something which we are committed to making sure is best in class.

"We want the best young engineering talent to aspire to work for us and we understand that for that to happen we need comprehensive local outreach to raise our brand awareness as a good employer and a top choice for engineering apprenticeships.

"The time commitment to deliver these sessions is considerable, so we wanted to ensure that we created a memorable and informative experience for the students many of whom are now fully aware of what we do, who we do it for and how they could be the engineers of the future with us."

Daniel Degg, head of employer engagement & business development at City of Wolverhampton College adds: "We are delighted to have hosted Erodex for these educational sessions and for our students to

be able to access them. The virtual reality experience is very innovative and we are pleased to be able to utilise this technology to engage and inspire students.

"As a college, it is important that we give our students an insight into what working within engineering is like and the range of opportunities available to them. This was not only a fantastic way of achieving that but the

variety of activities within the sessions ensured that the students we always engaged and had multiple opportunities to learn.

"It is also important for members of our teaching staff to gain a better understanding of local companies like Erodex and the industries in which they work, as we are now more able to advise students moving forward."

This summer Erodex will be taking on two apprentice engineering technicians within its' graphite machining facility in Wednesbury, West Midlands.

The company expects its apprenticeship scheme to expand significantly within the coming years, covering a range of roles across both the machining facility and the company's HQ in Halesowen.

James Kirk concludes: "Overall we were delighted with how well the VR sessions were received. We acknowledge that for SME's like us to compete for young engineering talent we need to differentiate and innovate, as evidenced by this project. We expect to expand on this activity moving forward, potentially opening the opportunities up to deliver sessions in local high schools as well as colleges.

"To achieve this, we are fortunate to have the ongoing support of two specialised organisations, Digital Gap, who created the VR experience and Next Gen Makers."

Erodex UK Ltd
Tel: 01202 546732
Email: erodex-ts@erodex.com
www.erodex.com

lantek

Smart Factory Powered by Lantek

Unleash the efficiency of your factory

Take your sheet metal factory to the next level with Lantek. Our cutting-edge software streamlines operations and optimizes workflow with automation tools and real-time analytics. Stay ahead of the competition and thrive in today's manufacturing landscape with Lantek's innovative multivendor software.

CAD/CAM

MES

QUOTING & ERP

ANALYTICS

INTEGRATIONS

www.lantek.com

#wearelantek

Subcontractor develops its own road race engine

The original engine of the A-series Classic Mini included a 32 kg cast iron block. Imagine the improved performance if the latest advances in engine technology were applied today. This is what inspired Smethwick-based subcontractor A&M EDM to create its own engine, a road race version with a block machined from solid aluminium weighing just 20.55 kg with end caps fitted. Nearly all of the engine parts are made on Hurco machine tools, of which there are 27 on the shop floor, including 3-, 4- and 5-axis Vertical Machining Centres (VMCs) and CNC lathes.

A Classic Mini with an Ascaso engine fitted

Launched in the first quarter of 2023 and marketed worldwide under the Ascaso brand name, the A+5 1273 cc K16V turbo engine was successfully circuit tested in December 2022 at the Llandow race circuit in South Wales by racing legend Jim Lyons. He originally loaned his Mini to the sub-contractor so it could laser-scan and reverse-engineer the body and engine bay, while similar was also done on legacy engine components.

Jim Lyons comments: "It's amazing how different the car felt. The steering was so much sharper with the lighter engine block and the engine just wanted to rev! We were still using the multi-piece development crankshaft, so rpm was limited to 7,000, although the engine has revved to 9,250 rpm during test." A lap time of 43.04 seconds was recorded, which is only 0.75 seconds slower than the lap record.

The project is the brainchild of Gary Surman, previously technical director at A&M EDM, a business that has grown since 2002 from two employees and a rented machine to a headcount today of 70 and annual sales of over £7 million. Managing director Mark Wingfield supported Gary's ambition, believing that that the addition of a proprietary product would enhance the subcontractor's portfolio.

Gary Surman built his first Mini engine at the age of 12. Even then he had a vision of building a block with five main bearings rather than three, with two extra columns either side of the central bearing to provide extra support for the crankshaft. The Covid pandemic combined with forward-thinking management at A&M EDM finally gave him the opportunity to design and produce it.

The block is machined on a Hurco VMX42Ui 5-axis VMC, while the crankshaft is produced from a solid billet using the swivelling B-axis of a Hurco VMX60SRTi VMC synchronised with the motions of a Kitagawa GT320 rotary 4th axis table. The initial engine design was for the front-wheel-drive, transverse engine layout of the Mini, but a crankshaft has also been developed for an in-line engine. So, with adapter plates it can be used in sports cars with rear wheel drive, such as the Austin-Healey or MG Midget. There is even the possibility of starting a new race series if the engine is put into track cars.

Gary Surman says: "We have served the Formula One, automotive, marine and aerospace industries for many years and were able to employ those skills to manufacture our own engine. The original had three main bearings but the new version has five, so it can rev at higher speeds up to 10,000 rpm and accept a load in excess of 350 BHP.

"The accuracy and surface finish we achieve on the Hurco machines are excellent. Roughing speeds are high at 12 m/min, while finishing with a ball-end mill is at about 2.5 m/min. The programs for machining the block have been linked, so it can be left overnight for unattended machining."

Ascaso A+5 engines of different capacities have also been developed - 998 cc and 1171 cc for both the BMW K16V and 12G940 heads. The future for all of them looks bright,

An aluminium block for an A&M EDM Ascaso A+5 1273 cc K16V turbo engine on the table of a 5-axis Hurco VMX42Ui VMC

A&M EDM's Smethwick factory, showing two of the Hurco machines in operation. 27 of them have been purchased in the last 20 years, accounting for a quarter of the more than 80 CNC machine tools on the shop floor

Gary Surman with the CAD model of the new engine design

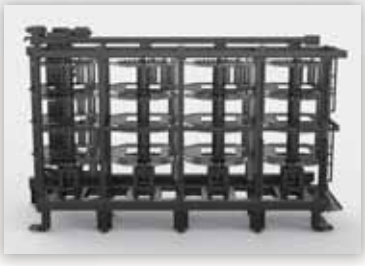
as there are thousands of Mini enthusiasts worldwide. Moreover, the engine's ability to power rear-wheel-drive cars dramatically extends its potential. It may also have other applications such as in boats and it may even have sufficient power-to-weight ratio to be used in light aircraft, subject to testing. Gary Surman already has the next iteration of the Ascaso A+5 firmly in mind.

Hurco Europe Ltd
Tel: 01494 442222
Email: sales@hurco.co.uk
www.hurco.co.uk

VARIAXIS i-300 AWC

[Auto Work Changer]
with MAZATROL SmoothAi

32 position Auto Work Changer (AWC)
(max. workpiece Ø350 x H315 x 65kg)



Tool storage capacity from 145
tools up to 505 tools

Compact, 5-axis machining with integrated automation

The VARIAXIS i-300 AWC delivers what was once thought impossible. A 5-axis machining and automation solution for small lot sizes that is capable of prolonged unmanned running. Equipped with a full scheduling system, large tool magazine and SmoothAi, the VARIAXIS i-300 AWC delivers outstanding productivity, best-in-class accuracy and unsurpassed control.

To discover the great offers, please contact your Mazak Area Sales Manager.
Call +44 (0) 1905 755 755 or email info@mazak.co.uk

Smooth AWC software for easy
scheduling and monitoring

DISCOVER **MORE** WITH MAZAK™

www.mazakeu.co.uk/variaxis-i-300-awc

Mazak
Your Partner for Innovation

Speed, accuracy and flexibility with REVO 5-axis inspection

As global technologies business Renishaw celebrates its 50th anniversary, we take a closer look at one of the biggest triumphs of innovation in the company's history, the REVO® 5-axis measuring system.

Founded in 1973, Renishaw has a rich history of delivering true milestones in CMM metrology and the release of REVO 5-axis measurement technology is seen as one of the biggest step changes in measurement capability ever introduced.

As with 5-axis machining, 5-axis inspection offers increased flexibility of orientation to reach features at compound angles or to cope with freeform surfaces. For the manufacture of a blade, blisk or complex housing, a machine tool requires that freedom of movement to follow complex cutting paths and create the perfect curves required. In a similar manner, 5-axis inspection offers much greater levels of flexibility for feature access and part inspection.

Applying 5-axis technology to a CMM allows measurement speeds to increase dramatically, but crucially this is not at the expense of accuracy. REVO can deliver measurement speeds up to 50 times faster than that of current 3-axis systems.

By synchronising the movement of the three axes of the machine with the two axes of the REVO infinite positioning head, inertial loads on machine structures due to CMM accelerations are minimised. In avoiding these dynamic force errors, Renishaw's 5-axis measurement technology provides exceptional throughput while simultaneously giving manufacturers a more comprehensive understanding of part quality.

Manufacturers across the globe working in automotive, aerospace, consumer electronics and beyond, rely on Renishaw's world-class CMM probing systems to achieve traceable measurements of parts with REVO setting the standard for fast, accurate and flexible multi-sensor inspection capability on the shop floor.

The extensive range of probes available as part of the REVO multi-sensor system enables automatic switching between tactile touch-trigger and scanning, surface finish, ultrasonic thickness and non-contact vision measurements. All of this is made possible without limiting CMMs to use within temperature-controlled lab environments.

Developed to optimise manufacturing processes, this multi-sensor capability enables manufacturers to increase productivity significantly and can eliminate the need for capital equipment such as a dedicated surface finish measuring station. This single-machine solution drastically reduces part miles, overcoming the delays and risks of damage inherent in the transferring of parts to multiple inspection locations, whilst also contributing to lower energy consumption, reduced scrap and optimised shop floor layout.

Having established a world-leading range of measurement systems for CMMs, the company continues to explore new ways of enhancing current CMMs capabilities through 5-axis technology. With such a broad range of interchangeable probes, the REVO system enhances machine shops' ability to bring new designs into production.

Renishaw's RUP1 ultrasonic probe is one of seven interchangeable REVO system sensors. RUP1 offers ultrasonic thickness inspection without the use of water tanks or coupling gels to enable a good transmission of the signal. Instead, it uses an innovative elastomer tip ball to provide excellent coupling between the probe and the material.

RSP2 is REVO's standard dedicated lightweight tip-sensing probe, capable of 2D scanning (X, Y) and 3D touch-trigger measurement. With various stylus length configurations, RSP2 offers a maximum reach of 500 mm and is specifically designed for high-speed scanning with low scanning forces and minimal stylus wear. Using the infinite positioning capability of the REVO head, it is surprising how much part coverage can be achieved with a single stylus arrangement on an RSP2.

One of the most popular modules for REVO has been the SFP2 surface finish probe. This skidded probe system makes surface finish inspection an integral part of the CMM inspection capability, with REVO enabling automatic switching from dimensional inspection to surface finish measurement on the same CMM.

For machine shop workers, inspection has often been thought of as a quality control measure, but REVO aims to bridge this gap, offering technology that is attainable and easy to use, and providing machine shop employees directly with the data to improve process capability.

The ability for inspection equipment to operate next to manufacturing machines in a shop floor environment allows for data to be used in a far greater capacity than a simple PASS/FAIL. REVO can help actively fine tune process control limits, producing measurement results quicker, thereby enabling more parts to be inspected and manufacturing blind spots to be minimised.

REVO's versatility, achieved through its innovative design, will help manufacturers keep up with the evolution of inspection demands.

Renishaw plc Tel: 01453 524524
Email: uk@renishaw.com www.renishaw.com

RENISHAW
apply innovation™

Equator™ gauging systems

More parts, less time

Thanks to the Equator gauge's versatility and speed of operation, it is quick and easy to switch between parts and shorten cycle times.

Its innovative technology is based on the traditional comparison of production parts to a reference master part. The re-mastering is as swift as measuring a production part and immediately compensates for any thermal effects on the shop floor.

www.renishaw.com/equator

Renishaw plc, New Mills, Wotton-under-Edge, Gloucestershire, UK, GL12 8JR
+44 (0) 1453 524524 UK@renishaw.com

Starrag Heckert X40 machining centre enters Factory of the Future

A Starrag Heckert 5-axis horizontal machining centre has joined a series of other multi-axis Starrag-supplied machines in a Starrag-dedicated machining area at the University of Sheffield Advanced Manufacturing Research Centre (AMRC) Factory of the Future.

Previously successfully applied to a dedicated machining project in another AMRC building in Rotherham, the Heckert X40 now complements Starrag STC 1250 and Ecospeed machining centres as well as a multi-axis Bumotec s191 turn-mill/ machining centre and NB251 high speed blisk machining centre in the Factory of the Future, ready to tackle varying machining and manufacturing projects.

Established in 2008, the Factory of the Future houses an array of state-of-the-art manufacturing equipment to enable partner companies and project sponsors to develop and trial new technologies and processes. The AMRC works closely with its customers and project sponsors to select the ideal machines and manufacturing technologies required to fulfil each project's individual demands.

"The X40 will undoubtedly prove just as successful alongside the STC and Ecospeed," says Phil Kirkland, head of the machining group at the AMRC, "and that will likely include extending its initial project work that embraced the machining of aluminium housings."

He adds: "Our partnership with Starrag has been built over a number of years and this addition to the Factory of the Future portfolio further cements this; we expect the strengths of the Heckert X40 to be utilised to the full.

"Forthcoming projects for the machine will no doubt illustrate how a wide range of components can be produced effectively and efficiently and the X40 technology will also enable our operators and engineers to continually upskill."

Importantly, the CNC features Starrag's Human-Machine Interface (HMI) for easier, intuitive programming and operation. It is this technology, combined with an impressive specification: X, Y and Z axes travels of 700 mm by 750 mm by 750 mm plus workpiece heights of 500 mm, rapids of 80 m/min and a 30,000 revs/min spindle offering torque values of up to 350 Nm, that will lend the X40 to a wide range of tasks at the Factory of the Future.

The Heckert X40 is one of eight Starrag machines installed progressively since 2003 at the AMRC and at sister centre Nuclear AMRC by Starrag as part of its Tier 2 membership with the AMRC.

Starrag Group is a leader in manufacturing high-precision machine tools for milling, turning, boring and grinding workpieces of metallic, composite and ceramic materials. Principle customers are internationally active companies in the aerospace, energy, transportation and industrial sectors. In addition to its portfolio of machine tools, Starrag Group provides integrated technology and maintenance services that significantly enhance customer quality and productivity.

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

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

Starrag UK Limited, headquartered in Birmingham, is a wholly owned subsidiary of the Starrag Group and the sole distributor of the Starrag, Heckert and DS Technologie machine tool range within the UK market.

Its dedicated and highly trained UK team serve the aerospace, power generation, oil & gas and nuclear sectors plus automotive and the general engineering industries. Starrag's state-of-the-art machining systems and solutions are globally recognised as some of the most advanced products within the market.

With its highly skilled and experienced UK team of service, application and sales engineers, ideally placed to service customers, whether your needs range from a single standalone machine right through to a highly complex FMS turnkey, Starrag UK has the solution.

Starrag UK Ltd
Tel: 0121 359 3637
Email: info-uk@starrag.com
www.starrag.com

5-axis 30-taper VMC aimed at 40-taper market

30-taper Vertical Machining Centre (VMC) manufacturer Brother has introduced a new 5-axis model with a swivelling rotary table, the Speedio U500Xd1. Despite having a nominal footprint of just 1.5 x 2 m, it is capable of multi-face machining of components up to 500 mm diameter by 270 mm high and weighing up to 100 kg.

Combined with a 28-position magazine for tools weighing up to 4 kg and either a 10,000 rpm / 18.9 kW or 16,000 rpm / 15 kW spindle with a face-and-taper interface option, the production centre redefines machines in this class and is squarely aimed at competing with 40-taper machining centres. 30 or 70 bar through-tool coolant is available.

Sole sales and service agent in Britain and Ireland, Whitehouse Machine Tools points out that there is little competition to the machine on the market in terms of its sheer speed of operation. Rapid traverse is 50 m/min in X:500 mm and Y:400 mm and even faster in Z:300 mm, which accelerates at 2.2 g up to 56 m/min. Chip-to-chip time is 1.3 sec, or faster still if a 14- or 21-tool magazine is fitted. Cutter exchange and axis motions take place simultaneously to minimise cycle times.

Trunnion swivel, A-axis, at 50 rpm is a generous -30 / +120 degrees and the table, C-axis, rotates at 75 rpm. Roller gear cam mechanisms drive both rotary axes and 0-90 degree indexing times are 0.9 sec and 1.2 sec respectively. Clamping torques are high at 610 Nm and 500 Nm.

Lowering the power consumption of its machines has long been Brother's aim. For a start, the electricity and air used by a 30-taper machine is only about 20 percent of that required by a 40-taper machine. In addition to having a low inertia spindle and highly efficient spindle motor, the U500Xd1 is equipped with a power regeneration system that reuses energy generated when the spindle motor decelerates. Other energy saving measures include efficient filtration that limits the size of the pump needed, a low energy LED work light with automatic off function, automatic coolant off, standby mode and automatic power off.

Control of the machine is by Brother's latest CNC-D00 with 15-inch LCD touch panel, offering extended look-ahead and enhanced usability.

Whitehouse Machine Tools Ltd Tel: 01926 852725
Email: timw@wmtcnc.com www.wmtcnc.com

OPEN MIND forges a top team with motorsport aftermarket manufacturer

Forge Motorsport & Engineering is a business that evolved from Forge Engineering, a subcontract manufacturing business founded in 1983. Down the years, the company developed what is claimed to be the world's largest and diverse supply of aftermarket car tuning products. It is this evolution that led to the name change to Forge Motorsport & Engineering in 1996 and, like many of the leading motorsport manufacturers, Forge relies on hyperMILL from OPEN MIND Technologies for the CAM programming of its components.

The company has offices in the US and Taiwan, retaining its R&D activities and manufacturing in Gloucester. Discussing the business, Peter Miles from Forge Motorsport says: "Forge Motorsport & Engineering is a manufacturer of performance products and aftermarket parts for a range of petrol and turbo vehicles. Forge Motorsport & Engineering specialises in the production of CNC machining, turning and fabrication of the largest range of performance aftermarket parts worldwide. The parts we produce at Forge are extremely complicated and very in-depth. For our engineers to get the best out of our machines, it's vitally important that we have the best software on the market, to be able to drive our innovation and our designs."

5-axis parts machined at Forge Motorsport

5-axis machining with OPEN MIND's hyperMILL at Forge Motorsport

It is here that OPEN MIND plays a major role with its hyperMILL CAM suite. Peter Miles adds: "In 2019, we recognised that we'd been inactive in updating and improving our machining capacity. That led to us looking in detail at our CNC machining capability. Ryan Speck, our chief engineer, led us down the road of investment with the 5-axis machining capability and then the need for CAM software to drive our improving capability; our engineering ability was crucial. This brought the need for us to invest in the right kind of software to drive our engineering processes."

Discussing the onboarding of hyperMILL from OPEN MIND, Forge Motorsport & Engineering chief engineer, Ryan Speck says: "My role is to ensure our manufacturing operation is as efficient as it can be and that we are as competitive as we can be within our industry. That led us to look at our 5-axis options and the software to drive that. We looked at various different products on the market, but we felt that the hyperMILL product from OPEN MIND Technologies was the right one for us.

"What we need from a CADCAM system is the ability to program our parts accurately and in the most efficient way possible. Not only that, but to be able to post the programme and when we get to the machine, having the trust in the program that's been posted, for it to be able to run as its intended."

"Everybody encounters problems and we are no different. During the time when we're programming our components and we've come across problems, OPEN MIND has been able to support us really well in that aspect. Every time we call, they'll do their best to put things right there and then. It also enables us to upskill our staff. OPEN MIND doesn't just put things right and then not explain how it's done, they continually involve our staff and make sure that we can stay up to date with all the changes within the software. For us, using hyperMILL means that we can hit our deadlines and our lead times don't drift out."

"A great example of the support is the Team Viewer function. This enables our programmers to view exactly the support that's being given on the screen live right in front of them. This almost mimics an in-house training session. What is really interesting is that OPEN MIND's hyperMILL has given us the ability to increase our efficiency by reducing our cycle times and enable us to program offline. This has made us more

competitive within the subcontract engineering industry and we've actually re-launched our Forge Engineering brand."

Looking at some of the components programmed and machined with hyperMILL, Forge Motorsport & Engineering's Rich Rymer says: "There's quite a lot that goes into these parts. We have one particular part that we actually do in one operation. We get the raw stock, hold it in the 5-axis machining centre, do the profiling or the pocket milling, and then we flip it over and just skim off the back, finally we snap it off in the vice."

Alluding to another component, Rich Rymer continues: "These parts are DV37's which is a dump valve. It uses quite a lot of trochoidal milling. I think if we were to use a longhand machining strategy, we wouldn't be able to get into the gaps, as they are tight little gaps. Trying to get any cutter in there would take very, very light cuts in a horizontal plane. However, we use a trochoidal toolpath, so we go to the full depth of cut with light movements in a radial axis."

Discussing specific features within hyperMILL and in particular, the merge function, Rich Rymer concludes: "It's a very good function. There's always model and drawing changes in engineering. This function allows us to update a model rather than re-program the whole part through hyperMILL. Effectively, you can take the old and new model and just merge them into one. Any changes can be edited by 'cut and pasting' the faces on. From there, it's just a case of going through what you've programmed, selecting the new faces. It makes things a lot easier and it allows you to just go on and continue with the programme, so you don't have to restart from scratch."

One of the Forge Motorsport fleet of vehicles a VW MK8R

Machined components at Forge Motorsport

A Forge Motorsport FMDV37 valve fitted in a vehicle

OPEN MIND Technologies UK Ltd
Tel: 01869 290003
Email: info.UK@openmind-tech.com
www.openmind-tech.com

Programme of investment in XYZ machines pays dividends

Matthew Boyt, managing director of CR Engineering in Wotton Underwood near Aylesbury, bought the company from his previous employer in 2020 and since then has had a programme of investment in XYZ Machine Tools to keep up with demand. Originally formed in 1947, CR Engineering started off with watchmaking but now makes precision components for a wide range of applications including X-ray machines, bottle filling machines, bath lifts and specialist laser machinery.

Matthew Boyt says: "Before I bought the company and worked as an employee, Colin Rapsey, the previous owner, had already invested in XYZ Machine Tools installing the first machine in 1998. All the employees liked and were familiar with the ProtoTRAK® controls and the machines themselves had proved their reliability and return on investment, so it was an easy decision to continue working with XYZ Machine Tools as the business has grown."

For turning, the company currently has three XYZ machines: a CT65 HD lathe with 66 mm capacity Hydrafeed bar feed system, Siemens 828D ShopTurn Touchscreen Control and tool setting probe; a PROTURN RLX425 Gap Bed lathe with 480 mm swing and 2,500 RPM spindle, both purchased in July 2022 and a ProTURN SLX 355 with 1,000 mm between centres which came with the company purchase.

For milling from XYZ it has a KMX 2000 Turret Mill with 762 x 380 mm travel, a RMX 3500 Bed Mill with ProtoTRAK RMX control, 787 x 508 x 508 mm travel and 5,000 RPM spindle and a RMX 5000 with ProtoTRAK RMX control, 1,524 x 596 x 584 mm travel and 7.5 HP programmable variable speed head. The latest acquisition is a XYZ 1100 HD Vertical Machining Centre (VMC). Matthew Boyt says: "This is my dream machine and it would not fit in our previous factory. We moved to our new premises in August 2022 expanding our operation to 3,600 sq ft. Purchasing this machine was one of the first things I did. We can fit three vices on the bed so typically we can machine multi sided parts in one setup, simply moving and turning them from one vice to the next to produce a finished part straight off the one machine. Not only does this save on handling, but it also improves accuracy and quality." The XYZ 1100 HD comes with a 33 HP 10,000 RPM spindle, a 1,200 x 600 mm table and a Siemens 828D ShopMill 15" Touchscreen control or a Heidenhain TNC 620 control.

C R Engineering's move to its new factory was orchestrated by XYZ's haulage, moving all the machinery and installing the new RMX 5000 in the space of one and a half days. Matthew Boyt adds: "To recommission all the machines and install the new RMX 5000, so quickly, minimised our downtime and was an impressive feat. Even better, the RMX 5000 paid for itself with the first job we put on it."

The company specialises in small batch quantities between about two and

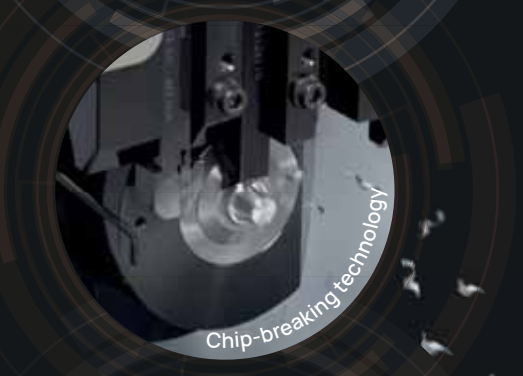
200 parts in a wide range of materials including stainless steel, mild steel, aluminium, brass, acetel and nylon. Programming is all carried out on the machine control, taking advantage of the easy ProtoTRAK, ShopMill and ShopTurn interactive conversational programming. Matthew Boyt says: "We find this works well for the small batch quantities we make. However, a really useful feature is the TRAKing® on all the XYZ machines which gives us the ability to run forwards and backwards through a programme by turning the handwheel, quickly proving it out before hitting the start button, avoiding scrap and expensive damage to the machine."

The investment in new machinery has impressed C R Engineering's customers and it is seeing a growth in orders thanks to the large capacity machines, where some parts are up to 2.5 m long. No one locally has the capability to machine components of this size. Similarly, it is reaping the benefits of reshoring where customers are re-evaluating security of supply. The company is BS EN 9001:2008 registered so accuracy, repeatability, traceability and on time delivery are important parts of its ethos.

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

SD-26

A NEW GENERATION



INTRODUCING

THE SD-26 SLIDING HEAD LATHE

An entirely new model capable of ø26mm machining, the SD-26 represents the latest technology developed by Star to give engineers the ultimate mill-turn solution for complex components.

DISCOVER THE NEW SD SERIES

WWW.STARGB.COM

VERSATILE MODEL TYPES
Specifications to suit various applications

ENHANCED ACCURACY
Thermal displacement sensor technology

IMPROVED ERGONOMICS
Easy access for quick setup changes

INCREASED CAPABILITY
Flexible configurations with over 40 tools

01332 864455 SALES@STARGB.COM WWW.STARGB.COM

Toolmaker upgrades capabilities with Mazak vertical machining centre

Toolmaker, SJ Dimmock, has upgraded its manufacturing capabilities with the purchase of it first UK-made Yamazaki Mazak VCN-530C vertical machining centre.

The family-owned firm, based in Dunstable in Bedfordshire, was set up by the late Stephen Dimmock, father of the current owner Jamie Dimmock, in 1985. It has since built a reputation for manufacturing high specification injection moulding tools for the aerospace, medical, food and drink, automotive and Formula One industries.

Jamie Dimmock comments: "Following the retirement of one of our long-serving employees, I found myself in a position of having three machines that I would need to train myself to operate. As they were older machines, I thought it would be more effective to sell the machines to finance a new, larger vertical machining centre.

"After a lot of careful consideration and time spent evaluating the performance of comparable machines, I chose the VCN-530C vertical machining centre from Mazak. Each day that goes by confirms it was a fantastic decision."

The VCN-530C is a high productivity vertical machining centre made at Mazak's European manufacturing facility in Worcester. Equipped with a 40-taper spindle, the machine excels at delivering high-speed machining with maximum stability and rigidity thanks to heavy-duty casting.

Jamie Dimmock continues: "I was taken aback by the Mazak after the first meeting. I wanted Japanese technology with high processing speeds because in toolmaking the surface quality is imperative to reducing the amount of second operation work that we need to do, such as spark erosion or polishing. With the VCN we have Japanese intelligence combined with British manufacturing. It ticked all the boxes."

Typically, SJ Dimmock is working to exceptionally high tolerances of +/- 0.005 mm to meet the surface finish requirements of their customers and Jamie says the VCN has transformed the company's machining operations. "We've replaced three machines with one and vastly improved the surface quality of the moulds while reducing the volume of second operation work. The processing speeds are exceptional with the Mazak, which has not only helped with the quality of the work we are doing but has also doubled our capacity."

Yamazaki Mazak UK Ltd
Tel: 01905 755755
Email: sales@mazak.co.uk
www.mazakeu.co.uk

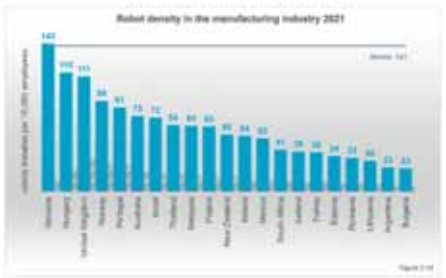
How can we secure the future of automation? Education, expertise and sustainability

By Oliver Selby, head of sales at FANUC UK

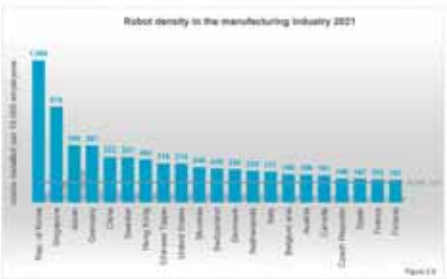
According to ONS data , almost one fifth of all workers in the UK manufacturing industry is aged 55 or over. Less than 10 percent are aged between 16 and 24. Over the next decade, 20 percent of the workforce will retire, taking with them years of engineering and manufacturing expertise.

If UK manufacturing is to remain internationally competitive, we need to prioritise the development of a skilled pipeline. People who can design, build, programme, integrate, operate and maintain manufacturing technologies. We also need to heavily embrace automation as a route to countering unskilled personnel shortages and increasing productivity.

Despite having a strong manufacturing industry, the UK lags behind other industrialised nations in its uptake of automation. According to the International Federation of Robotics' 2022 report, robot density in the UK manufacturing industry was 111 robots per 10,000 employees in 2021, which is very low for a Western European country. Germany, in comparison, has 397 per 10,000 employees.



According to the International Federation of Robotics' 2022 report, robot density in the UK manufacturing industry was 111 robots per 10,000 employees in 2021, which is very low for a Western European country
SOURCE: WORLD ROBOTICS 2022



I believe that together, investment in education and expertise can accelerate our adoption of automation and go a long way towards addressing the problems facing UK manufacturing.

Oliver Selby, head of sales at FANUC UK

Industry-relevant qualifications for Gen Zs

FANUC firmly believes that education is the key to securing and nurturing a pipeline of new manufacturing talent. The content of university degrees is already changing to become more industry related and school leavers now have the option of studying for degrees such as an MSc in Artificial Intelligence (AI) and robotics and a BEng in robotic engineering. However, there are still only 30 universities in the UK offering undergraduate courses in robotics and automation. In addition to this, we can see a widening gap in the provision of post-GCSE technical education, where there is a need for more hands-on training in real life engineering settings.

We are deeply committed to supporting automation education at lower foundation level through both our Training Academy and the delivery of robotic equipment to training locations such as schools and technical colleges. In the last 12 months, we have supplied more than 25 robots to learning centres in the UK to support current and future education requirements.

Our Training Academy at our Coventry HQ is currently undergoing independent validation, after which FANUC UK will become one of the first automation companies to offer accredited courses that can feed into mainstream education, with credits obtained against a particular skill. Students will gain valuable hands-on experience in areas such as operating, programming, troubleshooting and integrating robots while securing credits towards their qualifications. This industry-led methodology will greatly benefit the new T-Level awards, which have been designed to try and solve the ever-growing skills gap conundrum.

This new engagement between education and industry, which will launch in the UK in the coming months, will mirror the US model where FANUC has been blazing a trail in the roll-out of certified education programmes for robotics and automation. It is hoped that fostering a close, mutually beneficial cooperation between industry and education providers will be the key to the success of the new T-Level system and be precisely the direct intervention we need to attract younger people to manufacturing.

Building in-house automation resource

Attracting new blood to the industry is just one part of the challenge. Developing that talent into real industry expertise that becomes a source of competitive advantage is equally important. This is what investment in automation is really about, not just buying a robot and waiting for it to pay back in the traditional labour-saving sense but establishing automation as a core function within business models.

There are a number of benefits to building strong in-house automation capabilities. As well as reducing reliance on third parties, this approach supports staff retention and promotes innovation from the inside.

Companies can identify where the opportunities lie within their own businesses, understand how automation can enhance their facilities and use it to increase their productivity levels, something which the UK currently struggles with on the international stage, a German worker is around 30 percent an hour more productive than a UK worker.

This trend is already starting to play out in industries such as automotive production and the distribution and E-commerce fulfilment sector, where high-profile businesses are reaping the rewards of building internal automation teams. As the UK adopts more robotics and automation across different facets of industry and manufacturing, our prediction is that more companies will look at establishing their own internal automation teams.

FANUC is deeply committed to supporting automation education at lower foundation level through both their Training Academy and the delivery of robotic equipment to training locations such as schools and technical colleges

Demonstrating our sustainability credentials

As manufacturing companies embark on net zero roadmaps to meet the Government's 2050 ambitions, sustainability is higher than ever on the agenda. Therefore, if automation is to play a key role in addressing the labour crisis it needs to demonstrate that it represents a sustainable solution and can feed into net zero efforts.

In this respect, FANUC is a vanguard. We have been making our own servo drives for over 50 years and have now reached the point where we have achieved best-in-class energy efficiency. For example, our ROBOSHOT series of electric injection moulding machines uses up to 70 percent less energy than hydraulic machines and up to 20 percent less than other electric machines, thanks to servo technology and intelligent power regeneration capabilities.

FANUC also takes a circularity-driven approach to innovation and after-sales care in order to maximise resource use by prolonging the useful life of equipment. As a company, we operate a lifetime promise that as long as a machine is still in service, we will provide customers with original spare parts for a minimum of 25 years. As well as this long-standing commitment, our research and development team focuses on improving the lifespan of our products to reduce waste. One example is our CRX Collaborative Robot: With a heritage of nearly one million industrial robots, FANUC has designed the CRX to outlast its competition, with very minimal maintenance needed across its lifespan.

FANUC UK will become one of the first automation companies to offer accredited courses that can feed into mainstream education, with credits obtained against a particular skill. Students will gain valuable hands-on experience in areas such as operating, programming, troubleshooting and integrating robots whilst securing credits towards their qualifications

Agents for change

Automation presents a solution to several challenges facing manufacturers today, from unskilled labour shortages and increasing product quality to waste reduction. However, realising its potential will require a serious joint commitment by the manufacturing and automation communities to build skills and nurture the next generation of engineers. Here at FANUC UK, we are determined to be a key driving force for change.

FANUC UK Ltd
Tel: 024 76 053 130
Email: marketing@fanuc.co.uk
www.fanuc.eu/uk/en

New ABB SWIFTI industrial cobot delivers class-leading speed, accuracy and safety

ABB has launched the SWIFTI™ CRB 1300 industrial collaborative robot, bridging the gap between industrial and collaborative robots. Combining class-leading speed and accuracy with expanded load handling capability of up to 11 kg, the SWIFTI CRB 1300 can be used in a wide variety of production and product handling applications; from machine tending and pelletising to pick-and-place and screwdriving.

"Our customers are looking to robotic automation to make their processes more flexible, efficient and resilient, helping to counter labour shortages by enabling their employees to perform more value-added work," says Andrea Cassoni, managing director for global general industry robotics at ABB. "The latest addition to our SWIFTI family is a highly accurate, high payload cobot that's up to six times faster than other robots in its class. This means it can be used by both SMEs and large manufacturers looking for collaborative automated solutions to achieve new levels of flexibility and productivity."

Featuring a high-quality design, backed by expert support, the SWIFTI CRB 1300 incorporates several features that can improve production efficiency by up to 44 percent compared to other cobots in its class. In a typical palletising application, SWIFTI's speed and performance enable it to handle up to 13 boxes per minute compared to the nine boxes possible with other cobots in its class.

Powered by ABB's OmniCore™ C30 and C90XT controller, the SWIFTI CRB 1300 is up to five times more precise than any cobot in its class, making it ideal for tasks requiring consistent accuracy and repeatability. This, combined with a top speed of 6.2m/s and payload options from 7 kg to 11 kg and reaches from 0.9 to 1.4, enables the SWIFTI CRB 1300 to perform a range of higher payload tasks including screwdriving, assembly, pick-and-place and palletising. With protection against dust and moisture, up to IP67, it can also be used in demanding environments, making it ideal for machine tending applications.

The SWIFTI CRB 1300 prioritises operator safety, with a safety laser scanner integrated with ABB's SafeMove collaborative safety software. The technologies enable safe collaboration to be achieved without the space and cost associated with installing protective fencing or other physical barriers.

If the laser scanner detects a worker within SWIFTI's operating area, ABB's SafeMove software will automatically slow the robot or stop it completely. As the worker moves away, movement will be restored, returning to full speed for full productivity only once the working area is completely clear. As a further protective measure, a built-in interaction status light provides a visual indication of the cobot's status when a worker is within the workspace area. Integrating the scanner and software is simple, with SafeMove's software add-ins enabling workers to quickly set up a safe working zone and other safety features using their handheld FlexPendant operating unit.

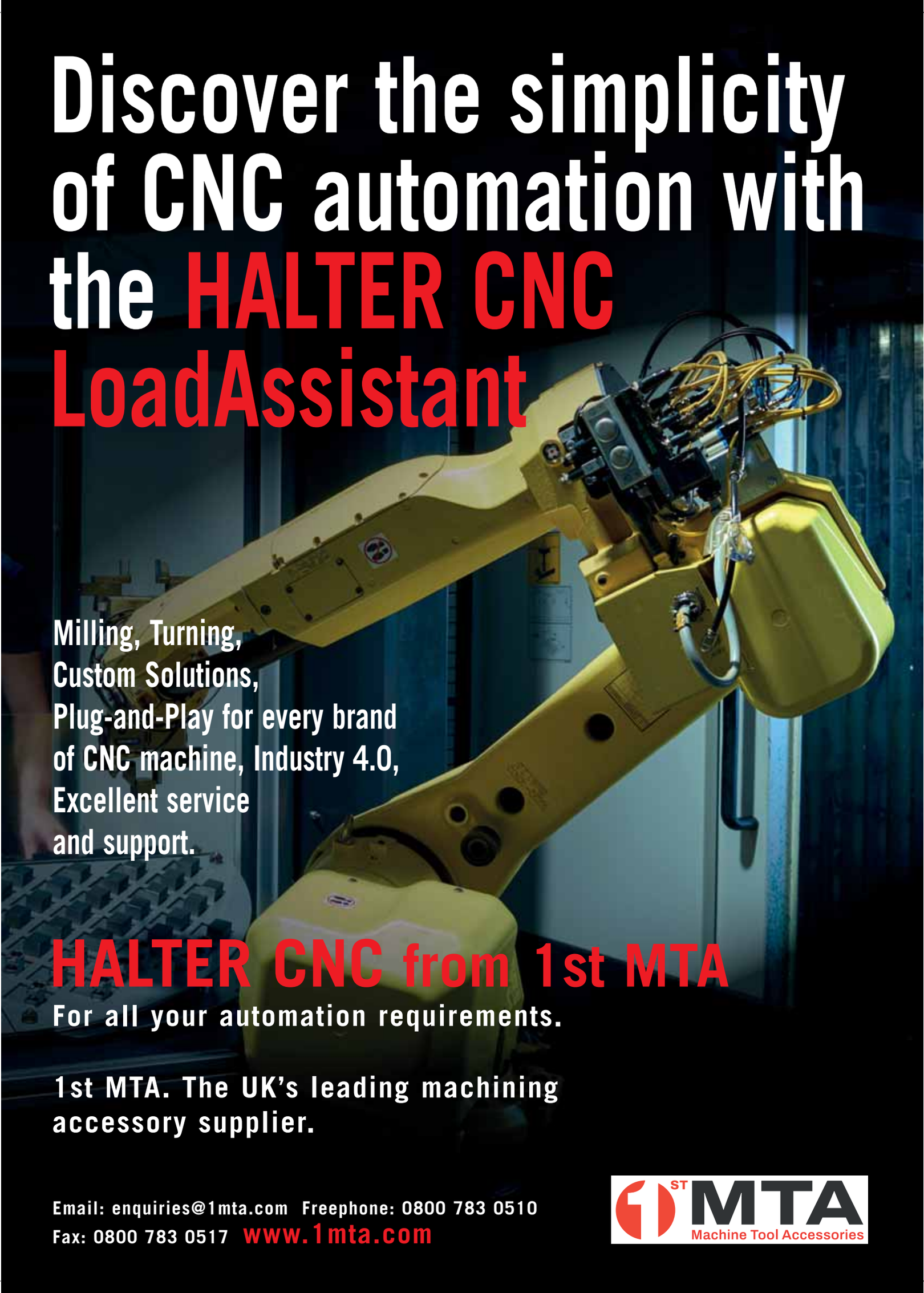
The same simplicity applies to programming the SWIFT CRB 1300. Users can set up the robot by either physically guiding it through a process, lead-through programming, or through ABB's new Wizard Easy Programming software. Based on simple graphical blocks, Wizard Easy Programming makes programming accessible for non-specialists in robotics.

The SWIFTI CRB 1300 is part of a wider cobot portfolio covering payloads from 0.5 to 11 kg, with options including the YuMi® single and dual-arm robots, the GoFa™ CRB 15000 and the SWIFTI CRB 1100 industrial collaborative robot for payloads up to 4 kg. For more information, visit: ***new.abb.com/products/robotics/collaborative-robots***

ABB is a technology leader in electrification and automation, enabling a more sustainable and resource-efficient future. The company's solutions connect engineering know-how and software to optimise how things are manufactured, moved, powered and operated. Building on more than 130 years of excellence, ABB's employees are committed to driving innovations that accelerate industrial transformation.

ABB Ltd
Tel: 01925 741111
new.abb.com

Discover the simplicity of CNC automation with the HALTER CNC LoadAssistant



Milling, Turning,
Custom Solutions,
Plug-and-Play for every brand
of CNC machine, Industry 4.0,
Excellent service
and support.

HALTER CNC from 1st MTA

For all your automation requirements.

1st MTA. The UK's leading machining accessory supplier.

Email: enquiries@1mta.com Freephone: 0800 783 0510
Fax: 0800 783 0517 www.1mta.com

1ST MTA
Machine Tool Accessories

Impressive weld seams in a flash with a welding robot

Few galvanising plants also weld steel parts. Their core competence is hot-dip or centrifugal galvanising to protect steel parts from corrosion. However, in Sulz am Neckar in the Black Forest, Germany, Verzinkerei Sulz GmbH offers a lot more than that with its welding robot and cell. No one who sees the KR CYBERTECH nano at work would think this is unusual. With ease and precision, the robot uses a welding device to join an octagonal prism to a compact steel plate, completing two welding processes in a mere 90 seconds. An employee removes the finished products and replaces them with two new ones. “The quality of the weld seams is outstanding,” says Bernd D. Euschen, managing director of Verzinkerei Sulz, who is delighted with the robot-based solution featuring the KR CYBERTECH nano welding robot.

Automated welding for SMEs

The KR CYBERTECH nano is used on welding assemblies characterised by their versatility and resilience. These adapters are designed for welded connection to steel beams, weld-on plates and other connection points. They help create suspensions, cross members and other structures in buildings and on construction sites. In the past, the welds on these assemblies were of varying quality. Because of changes in subcontractors, some of the welding work was done by hand and some with robots.

To do this, the customer had these components trucked to Eastern Europe for welding, and then transported the welded assemblies to Verzinkerei Sulz in the Black Forest for galvanising, fabrication and shipping. “That meant our customer had to send 40 tonnes out on the road twice a week,” Bernd D. Euschen explains. This was not optimal and the customer was looking for a new service provider for this task. That’s when Bernd D. Euschen and his team came up with an idea: “Why don’t we do it here in Sulz am Neckar?”

The compact welding cell is also ideal for small batch sizes

Automated welding: a novelty for a traditional company

Bernd D. Euschen admits that this approach was unusual for his industry: “We certainly don’t know of any other galvanising plant in Germany that has a welding robot.” Nevertheless, the potential order sounded interesting and the opportunity to cut out thousands of transportation kilometres and a whole lot of CO_2 in the future sounded very appealing. So he and his team decided to help out a good customer and to be a company that focuses on resource-efficient manufacturing. Just like that, Verzinkerei Sulz, with nearly five decades of galvanising experience, took on a new challenge.

High welding speed and many years of experience: the KR CYBERTECH nano welding robot

Integrating a welding robot into production

It was clear from the outset that this job needed to be automated because assigning it to one of the galvanising plant's 65 employees was out of the question. The company had no welders and none were to be found in the entire region. Bernd D. Euschen knew that robots were capable of laser welding, friction stir welding and arc welding, among other things and were getting better at it all the time. To stay true to the principle of short distances, Bernd D. Euschen started looking for an expert integrator in his area. That’s how he met Christoph Welle, the managing director of KIWI-Automations GmbH in Oberkirch, Baden-Württemberg, which emerged from a design office in 2006 and has been a KUKA system partner since 2016. Christoph Welle and his team were delighted to get involved right away.

Automated welding of sheet metal, stainless steel and other products

“The job was to weld the various parts of an entire product family at a relatively high speed with versatility and consistent quality,” recalls Christoph Welle. “We never considered welding up to 10,000 components per month by hand. The robot achieved consistent quality and interchangeable fixtures on the machines enabled the versatility. We designed these in a kit-like form for quick fixture conversion to handle different parts of product families with easy selection of various programs. This allows you to work on a new product after only a short setup time.”

Well networked in the SME sector and for Industry 4.0

Bernd D. Euschen adds: “We needed a compact system. We wanted to take our first steps toward robotic welding and thereby learn the ropes and gain expertise. Safety also was important.” The KUKA team responsible for the job had expertise in welding application, which

proved very helpful. The system integrator collaborates with many companies in the sheet metal processing industry and knows the industry inside out, which also proved beneficial. These advantages helped yield the right solution for Verzinkerei Sulz and its customer.

The smallest welding cell is just the right size

Verzinkerei Sulz chose a compact cell that measures 3,980 mm long, 2,365 mm wide and 2,445 mm high and offers plenty of power despite its small footprint. The cell uses a KR CYBERTECH nano, a slim robot with an extremely small interference radius, the smallest in-line wrist in its robot class, high repeatability and great versatility. For the welding system, Euschen and Welle chose the TPS 400i from Fronius, which is as reliable as it is communicative.

The robot improved sheet metal working processes significantly through automated welding

The right software, can advance digitalisation flexibly and efficiently in small and medium-size businesses

Enhancing welding robots with digital products

The KUKA.ArcTech software enhances the robot system with intuitive commands, structured menus and practical status keys that enable simple arc welding with high precision: “A welding process takes less than a minute,” says Bernd D. Euschen. Depending on the type of steel base plates involved, he estimates they galvanise 5,000 to 10,000 components each month. “Annually,” he concludes, “we are close to six figures.”

KUKA Robotics UK Ltd
Tel: 0121 505 9970
https://www.kuka.com/en-gb

Howells on track to success with ITC

Founded in 1946 as a radio and TV repair shop, Howells Railway Products Ltd has travelled a long journey since its early days. The business grew from a small shop to one of the largest producers of coils and transformers in Manchester. The Wythenshawe manufacturer entered the rail industry in the 1960s when power supplies for railway signalling moved away from traditional mechanical operation.

This evolution led to the introduction of other electrical and electro-mechanical equipment and in 1992, the Howells Group PLC was formed with the creation of the Howells Railway Products Ltd subsidiary. Thirty years on, the company has expanded exponentially with a list of marque clients. To work at the cutting edge of technology with industry leaders, it has added a new 40,000 sq/ft CNC machine shop with the 26 Haas machine tools and cutting tools from Industrial Tooling Corporation (ITC).

The rail experts manufacture everything from transformers and rectifiers, impedance bonds, tubular stretcher bars, disconnection boxes, AWS magnets, railway signals, overhead lines and much more. To efficiently machine such a diverse range of products in varying quantities, Howells Railway has worked with ITC since 2018. Initially having issues with tool life and performance in some of its processes, a relationship with ITC was formed and the Tamworth cutting tool manufacturer instantly made an impact. ITC introduced its solid carbide end mills and drills to deliver tool life improvements and cost benefits across a wide range of applications. This was then increased to turning products which again offered a competitive alternative to the existing tools being used on site.

From this early success, ITC's Gary Murrey then introduced the WIDIA line of indexable cutting tools with modular drills and high-feed shell mills being trialled on CLA3 alloy steel castings. The end bracket components for rail stretcher bars were manufactured in volumes up to 200 per month with four parts set up on three different Haas machining centres.

In September, Howells Railway informed ITC that it was moving the same parts and setup from three BT40 taper 3-axis Haas machines to one larger Haas VF11 BT50 taper machine with a 3 m bed.

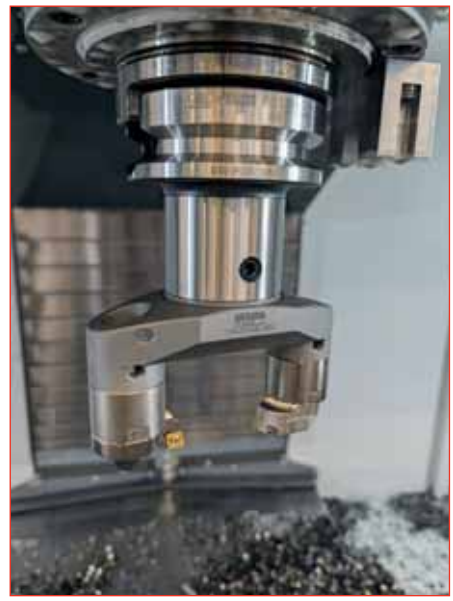
This transition to a more robust BT50 taper machine provided ITC's Gary Murrey with an opportunity to re-assess each of the three operations from a tooling perspective. One of the first changes was the introduction of the WIDIA M8065HD face mill for removing excess stock from the castings. With a more robust setup, ITC supplied a 63 mm diameter cutter to remove 6 mm of stock in a single pass from the facing and shoulder process. With the previous high feed face mill removing material at a rate of 1 mm per pass, the M8065HD significantly improved the cycle time on the parts and provided a more stable process.

The Howells Railway machine shop with some of the Haas machining centres

Always looking to take productivity gains to the next level, Gary Murrey introduced the benefits of the BIG KAISER system to the end bracket components. The end brackets also require an 88.1 mm bore at a depth of 65 mm as part of operation 1. Prior to the process review by the ITC team, the bore was processed with a high-feed 50 mm diameter indexable shell mill helical interpolating inside the bore; a process that took 3 minutes 30 seconds.

The diversity of the BIG KAISER range also enabled the ITC team to investigate potential improvements on the third operation of the end bracket parts at Howells Railway. Within the 12 cast parts simultaneously set up on the Haas VF11, there are 4 components set vertically, which use a 16-insert porcupine cutter to interpolate around a 44.9 mm diameter spigot. At its biggest diameter, the process removes 7.5 mm of stock to a depth of 40 mm.

Using the previous porcupine tool, the 4 spigots were machined in a cycle time of 6 minutes with significant noise and vibration throughout the process. Switching to the BIG KAISER SW twin-head overturning tool, the ITC engineers ran the new tool with just two inserts and cutting data of 800 rpm and 290 mm/min feed. The result was a cycle time reduction of 5 minutes 10 seconds, slashing the cycle time to just 50 seconds for four parts. The process took 10 seconds to machine each spigot with 10 seconds traversing between the components. At the widest point of the forging, the tool is removing 7.5 mm of stock material in a single pass, improving surface finishes and tool life performance and also reducing chatter and vibration to minimise spindle load.



The BIG KAISER overbore tool from ITC that is machining the spigots in a one hit operation

Industrial Tooling Corporation Ltd
Tel: 01827 304500
Email: sales@itc-ltd.co.uk
www.itc-ltd.co.uk

NEOLOGIQ

MACHINING INTELLIGENTLY

The **Best** is Now **BETTER**

Member IMC Group

ISCAR

www.iscar.com

Secure and high-quality aluminium threading with next-generation CoroTap 100 and CoroTap 400

Global metal cutting specialist Sandvik Coromant has introduced a new generation of CoroTap® 100 and CoroTap® 400 for short-chipping and chip-free tapping of aluminium. The taps offer high process security and predictable tool life.

Threading is often the last operation in your component and the last thing you want is for the tap to break. That is why process security and predictable tool life are of the highest importance when it comes to tapping. The next-generation CoroTap 100 and CoroTap 400, with optimised performance in aluminium, can meet very strict process security demands and offer a high level of reliability and consistent tool life.

The CoroTap 100 straight flute tap features a refined edge rounding that helps to remove burrs and improve surface finish. The combination of core thickness, rake/relief angles and land width gives an optimal flute geometry with great chip evacuation. If threading deep holes, the back chamfer helps to improve the threading capacity.

The CoroTap 400 forming tap has an optimised lobe shape developed for aluminium machining and a low friction-coefficient surface treatment for a smooth and polished thread surface finish. With a reduced thread length, the tap is less in contact with the material, reducing power consumption and torque. Finally, staggered coolant holes offer excellent coolant flow into the thread-forming zone and a safe forming process.

In a production process, tapping can be a bottleneck and increased productivity is often a demand. For example, a typical aluminium cylinder block can have up to 12 different threads in its structure and tapping is the most time-consuming process. With the new straight flute tap and forming tap, you can increase productivity and reduce cost per part. “Both geometries are combined with the latest surface treatments, substrates and coatings, which gives the ability to use higher cutting data with significantly improved tool life, resulting in lowering your cost per part.” says Robert Smith, offer manager for hole making and composites at Sandvik Coromant.

Both taps can be used for blind and through holes in many different components, such as cylinder blocks, cylinder heads, electric motor housings, transmission housings and battery racks. Robert Smith continues: “These products are beneficial for anyone who machines aluminium, including automotive, E-mobility and general engineering.”

The history of cemented carbide from Sandvik Coromant

The Sandvik Coromant brand name was established in 1942, with its sole aim to offer modern cutting tools using cemented carbide as the base. Sandvik Coromant's first cemented-carbide tools for metal cutting were manufactured the following year and, as industrialisation took off in the fifties and sixties, demand only continued to grow.

In 1969, Sandvik Coromant became the first in the world to offer ceramic-coated cemented carbide inserts. The ceramic 'Gamma Coating' greatly improved both the wear and heat resistance of the tools, increasing metal-cutting performance by as much as 50 percent. Coromant continued to develop its cemented carbide offering, developing new grades and drills for a variety of industries, with its GC 4225 cemented-carbide grade becoming the world's best-selling grade in 2005.

What about the future of cemented carbides? Central to the production of cemented carbides are metals like tungsten and cobalt, but these resources are in limited supply. Cobalt, for example, is a common component in lithium-ion batteries, valuable in extending battery life. But soaring demand combined with mining challenges means we could see shortages as soon as 2028.

To protect these finite resources, it's imperative that manufacturers and suppliers play their part in working sustainably. This could be through repairing and refurbishing old tools to give them a second, or even a third life. Tools that are completely unusable can be sold through buy-back programmes, with the scrap being recycled into new material. Sandvik Coromant offers both services, with its latest line of steel turning grades containing at least 40 percent recycled material. Considering issues like supply and sustainability right from the tool's design also help to ensure that no more material is being used than necessary.

Sandvik Coromant
Tel: 0121 368 0305
Email: uk.coromant@sandvik.com
www.sandvik.coromant.com/uk

DIAEDGE

WWX SERIES 200 400

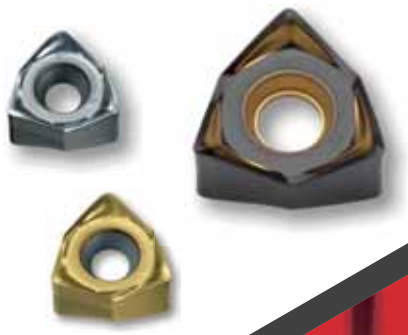
NEW 200 TYPE - SMALL & VERSATILE

MULTI FUNCTIONAL
Face, 90º shoulder, corner and pocket machining.

CHOICE
200 series Ø25 ~ Ø160
400 series Ø50 ~ Ø250
8 insert grades and 3 chip breakers.

PERFORMANCE
True 90º wall machining.
Low cutting force.

ECONOMY
6 cutting edges.
Integrated wiper geometry.



For full technical details

www.mmc-hardmetal.com

MITSUBISHI MATERIALS

Cutting tools for orthopedic medical components

Machining continues to be a main process for the production of medical parts. The medical industry is a major consumer of cutting tools. What are the specific features of the industry from the tool manufacturer's point of view? Which medical components are most challenging to the machine? Which cutting tools are common today for machining medical parts? Why are tools for machining orthopedic components at the forefront of technology? What are the cutting tool trends for tomorrow? The medical industry specialises in producing a wide range of healthcare equipment. This equipment is intended for solving a broad spectrum of health protection problems and it contains numerous parts that vary in dimensions, accuracy, material and shape complexity. To make these parts, the medical industry utilises diverse technological processes in which machining still plays an essential role.

The general principles of machining healthcare equipment parts do not differ from similar parts of non-medical mechanisms. However, there are components that require intricate machining processes. These processes are challenging and require process planning, essential machinery and selecting the right cutting tools. Cutting tool manufacturers contend with developing unique tools to assure effective productivity and profitability solutions for medical parts production.

Orthopedic and dental surgery components are classic examples of complex parts with challenging machining processes. Typical implant materials such as titanium alloys, cobalt-chromium (CoCr) alloys and stainless steel are difficult-to-cut. Many implants have a complex shape, which requires multi-axis machining. The implants and their respective parts are usually small in size and are characterised by stringent dimensional tolerances and excellent surface finish. Modern high-performance small to medium multitasking machines, Swiss-type and live-tooling lathes are the most efficient machining tools for cutting operations required for implant manufacturing. In order to maximise cutting output, machines require appropriate tools. When developing cutting tools for implant machining, tool manufacturers consider the mentioned features of the components to guarantee the right solution.

Small tool diameters in rotating tools result in substantially increased rotary velocities. These tools must be balanced and possess a dynamic strength margin to perform effectively under high rotating speeds.

Cutting tool design engineers greatly impact new tool developments in the field. The latest products introduced by ISCAR contribute to learning the influence of the factors. In cutting ISO S and ISO M materials, coolant supply is essential for achieving efficiency. The PICCOCUT line of miniature tools was developed specifically for machining small miniature parts. This highly advanced product line was reinvented over time by a coolant-through-tool feature with pinpointed emulsion directed at the cutting edge of the insert. PICCOCUT also features double-sided holders with internal coolant channels pinpointed to the cutting zone and holders with a user-friendly clamping

mechanism, which ensures high stiffness clamping for improved cutting performance. ISCAR also offers turning tools with ISO standard inserts intended for machining small-sized parts on Swiss-type and CNC lathes, and new square-shank holders for turning applications. The holders have the SAFE-T-LOCK clamping mechanism which assures precise and extremely rigid insert mounting and a high-pressure cooling option. This enables turning under high machining conditions while ensuring better productivity and prolonged tool life.

In parting, ISCAR realises that narrow widths of cut contribute highly to cost savings. A new range of compact tools with SELF-GRIP inserts in widths of 0.6-1.2 mm enable slim cuts that save material waste when parting bars with diameters of up to 16 mm. The tools are suitable for machining narrow external grooves. These tools are intended for Swiss-type machines.

Small-sized solid carbide drills are common tools used for drilling orthopedic components. Assembled drills with exchangeable carbide cutting heads provide cost benefits. However, the miniaturisation of drill diameters makes the assembled concept difficult to implement and designing drills with heads in small-diameter ranges is not a simple task for design engineers. In recent years, the lower limit of the diameter range for ISCAR SUMOCHAM drills with interchangeable carbide heads was 6 mm. Lately, ISCAR's prolific design engineers have succeeded in reducing it to 4.5 mm. This is a major step in the application field of cost-efficient assembled drills for the medical industry.

ISCAR Tools Ltd
Tel: 0121 422 8585
Email: sales@iscar.co.uk
www.iscar.co.uk

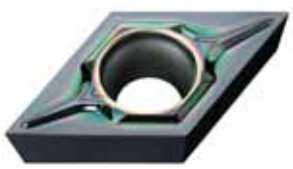
New insert grade MS7025 for turning stainless steel small parts

To improve performance when conducting small part machining, Mitsubishi Materials has now introduced a new insert grade to its range of precision turning inserts. Ideal for sliding head turning centres and intricate machining, the new MS7025 grade is the insert of choice for machining stainless steels.

The Nano multi-layer coating combines the high lubrication layer that provides excellent welding resistance, with a high hardness layer that suppresses the progress of wear. The damage usually caused by contact with the workpiece is also significantly reduced and increases tool life. The high lubrication layer suppresses built-up edge caused by chip welding which tends to occur in low feed and cutting speed machining. This has the benefit of reducing blemishes on the machined component surface.

A comparison test between MS7025 and a conventional grade was carried out to compare dimensional changes during low feed and cutting speed machining of stainless steel components, SUS440C, DIN1.4125. The results showed a large improvement in dimensional accuracy after machining many components, thereby reducing the number of insert changes. Another important benefit found throughout the test was that a consistently high quality surface finish could be maintained.

Mitsubishi Materials has also developed the new MS7025 grade with a minus corner radius tolerance to ensure precision corner geometry on workpieces. The minus tolerance is available with designations 02M and 04M that have a precision minus corner radii between R0.15 - R0.20 and R0.35 - R 0.40 mm respectively. The series has been launched with two chipbreakers, the FS-P chipbreaker which has been specified for micro through to low depths of cut and the LS-P for medium to high depth of cut applications. These chip breakers feature geometries ideal for each type as well as both having a mirror finish polished surface for efficient chip evacuation. Both types have extremely high quality cutting edges that maintain dimensional accuracy and also importantly, they drastically reduce burrs thereby negating the need for a further deburring operation.



MS7025 grade is available in 7º positive geometries CCGT, DCGT and VCGT types. A wide range of stainless steels, ranging from austenitic, ferritic, electromagnetic through to precipitation hardening types can be successfuly machined.

MMC Hardmetal UK Ltd Tel: 01827 312312
Email: sales@mitsubishicarbide.co.uk www.mmc-hardmetal.com

A partnership in innovation

A partnership between Boyce Precision Engineering and Quickgrind is leading to innovations in engineering and vending solutions that are benefiting customers and ensuring scalable and reliable manufacturing processes for precision-engineered components.

Boyce Precision Engineering is a family-owned business that operates from Northern Ireland. It was founded in 2006 by brothers George and Brian Boyce, who have worked tirelessly to create a culture of tech innovation and investment in order to meet and exceed their client's needs and expectations. The company has grown in leaps and bounds as it has evolved to serve multiple high-value sectors, including aerospace, automotive, defence and pharmaceutical, by developing and manufacturing precision-machined components.

Fast forward to today, the company is making great strides in the engineering of medical equipment and by partnering with Quickgrind it is able to ensure reliable and consistent production output for their customer's precision engineering requirements. Together the two companies have developed a proactive partnership that focuses on both engineering and vending solutions.

Due to the higher wear resistance of the Quickgrind QAlu standard tool, Boyce Precision Engineering is able to machine to such precision that it can be confident that it can leave its machining processes functioning overnight. By morning it will see 20-30 finished parts manufactured in the machine without the need for reworking. This means that it is able to manufacture parts more efficiently and consistently, confident in the commitments it can make to its own customers.

According to Boyce Precision Engineering, one of the standout aspects of the Quickgrind tools is that the company want the best tools for the most cost-effective prices. With Quickgrind it knows that it can push the tools right to the limits of its machine and knows that it won't break down. Or it can back it off and keep it safe for the automated machining processes. The main benefit is that it has ultimate flexibility, with increased tool life.

Innovation in tooling and vending

The QAlu is a high-performance 3-flute solid carbide end mill designed with 3 teeth to centre for balanced HSM. The QAlu-R is a high-performance aluminium cutter with flat-crested-style geometry for enhanced performance in roughing applications. The impact of implementing these tools has resulted in an increase in the stability and consistency of manufacturing output. After completing multiple manufacturer tool trials, these new tools in the Quickgrind standard tooling range and are one of the main reasons that Boyce Precision Engineering chose to partner with Quickgrind.

Boyce Precision Engineering thrives on innovation and by working with its existing tool vending solution, the two companies have been able to take a look at what is actually required for each client project instead of simply putting everything in at an excessive cost. Its engineering solutions are thought-out and customised to meet the specific needs of the project and Quickgrind has in turn been able to be quite specific about what the customers' requirements are in its vending machines.

By combining the stable tool life of the QAlu range with partnership work on replenishment, there has been a huge increase in both process stability and output. This has ensured that Boyce Precision Engineering's processes are consistent, reliable and scalable.

For more information on Quickgind tooling solutions, or to discuss your tool vending requirements, get in touch today.

Operating in 37 countries, Quickgrind is a British cutting tool supplier with an International reputation for solid carbide cutting tools for the aerospace, aircraft, automotive, defence, extrusion die, F1, medical, motorsport, mould and die, oil and gas, power generation, renewables, subcontract and general engineering industries.

Its objective is to become your tooling partner by helping you to increase your productivity. It achieves this by optimising metal removal rates and tool life, which in turn is achieved by applying the correct technology and the right tool for the job.

Quickgrind
Tel: 01684 294090
Email: contact@quickgrind.com
www.quickgrind.com

Special as standard via Walter GPS

Configured Walter Xpress special tools can now be ordered directly

With Walter GPS, manufacturers can now generate application-specific tool solutions A new function also allows engineers to order Walter Xpress drilling and reaming tools directly. All the functions the App already offers for standard drills are now also available for special tools for the first time.

If no standard tool is available for a given application, Walter GPS will display the 'Walter Xpress button'. This button can be used to configure special drilling and reaming tools and order them online. Users can simply enter the application, machining method and material into the Walter GPS system and they are immediately given suggestions for a suitable tool solution. This will include cutting data that is tailored to their specific machining objective. In the default setting, this method is always the most cost-efficient solution. However, the objective can vary from one application to another. For example, some manufacturers may have different priorities, such as surface quality, productivity or process reliability instead.

After selecting the appropriate tool, Walter GPS first creates a dimensional sketch as a standard drawing. After an order is placed, within around 20 minutes this sketch is replaced by a quotation drawing based on the SAP data of the tool in the shopping basket. With this new function, Walter GPS users can order solid carbide and indexable insert drills and directly compare them. In addition to the drill bodies for indexable insert drills, the compatible indexable inserts can also be configured and ordered directly.

Walter GPS also offers advanced options for intermediate diameters and step tools that have not been available until now. When ordered online via Walter GPS, Walter Xpress tools are delivered in around two to four weeks. Plans are in place to extend this new function so that it covers threading and groove turning in 2023.

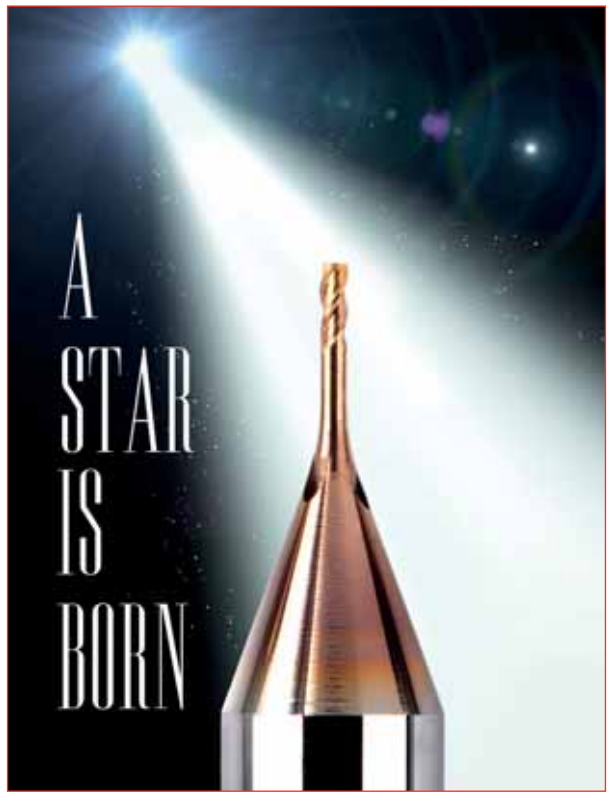
Walter AG was founded in 1919 and is now one of the world's leading metalworking companies. As a provider of specialised machining solutions, Walter offers a wide range of precision tools for milling, turning, drilling and threading applications. Walter works together with its customers to develop custom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

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

Floyd presents cool solution for crazy milling

Now available from Floyd Automatic Tooling is the exciting new CrazyMill Cool Micro series of micro end mills from Mikron Tool. With micro machining applications increasingly commonplace in the electronics, medical, optics automotive, aerospace and defense sectors, the high-performance CrazyMill Cool Micro end mills are a game changer for the industry.

For the first time, engineers at Mikron Tool have successfully transferred high-performance cutting tool geometries to micro dimension end mills. The results are unprecedented for manufacturers in this arena. Perfect for operations as diverse as side-milling, helical interpolation, slot milling and drilling, the CrazyMill Cool Micro is available with three or four flute options with diameters from 0.2 to 1 mm with effective cutting lengths of 3XD and 5XD. The high quality micro-grain carbide grade permits the grinding of special filigree geometries that maximise strength and performance, minimising the potential for tool breakages especially when machining challenging materials.



The combination of innovative geometries, the high quality carbide grade and a patented new cooling concept deliver double the tool life performance and three times higher productivity levels than rival product lines. The integrated through coolant channels guarantee unparalleled levels of cooling. Furthermore, with a cooling channel for each of the three or four flutes, swarf evacuation that can be an issue in micro machining applications, is now a thing of the past.

The unique micro-machining S and SX geometries, patented cooling channels and Mikron's eXedur SNP coating technology provide unsurpassed flexibility for end users. The micro-machining experts have also introduced coating technology that prevents the loss of sharp edges that can be so critical in micro machining applications. The new arrivals are available with an S geometry for machining stainless, steel, cast iron, non-ferrous metals and titanium alloys while the SX geometry type is suited for particularly challenging materials such as inconel, monel, and CoCr alloys. For further details on how you can accelerate your micro-machining performance, please contact the sliding head specialists at Floyd Automatic Tooling.

Floyd Automatic Tooling Ltd Tel: 01462 491919 Email: info@floydautomatic.co.uk www.floydautomatic.co.uk

Sustainable and recycled plastic options now available

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

The PCR material (Post-Consumer Recyclate) is made up of cleverly processed plastic household waste. Products made from PCR are just as good as those made from virgin material.

The Bio HDPE blow-moulded packaging is 96 percent manufactured from bio-based content and is fully recyclable to meet the demands of environmentally conscious businesses.

Even the supply chain of environmentally-friendly manufacturers complies with socially responsible production methods. So, if you are looking for the most environmentally sustainable packaging for your cutting tools and precision parts, rose plastic has a complete range of Bio-HDPE and PCR products that guarantee a secure, protective, resilient, and re-usable option for your business.

To request a free sample of PCR or Bio HDPE please email info@rose-plastic.co.uk or call the customer service team on 01709 721794

rose plastic UK Ltd www.rose-plastic.co.uk

ZImmer's new SPP pallet changer zeroes in on productivity and accuracy

Zimmer Group is recognised internationally as a leading manufacturer of high quality, precision technologies for a wide range of applications including handling, gripping, damping, linear motion and zero-point clamping systems.

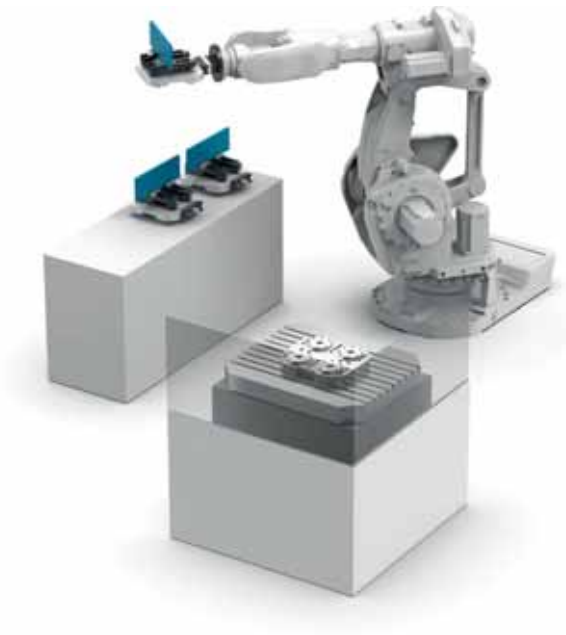
The use of zero-point clamping systems allows parts to be clamped with accuracy and speed, reducing setup time and maximising productive machining time. Building upon the company's existing comprehensive range of zero-point clamping systems, Zimmer Group has now expanded the range with the launch of their new pallet changer technology. In addition to changing pallets in machine tools, this system also opens up numerous other applications, for example, the handling of components using robots while maintaining the highest levels of repeatability.

The slim design and low setup profile of the clamping plate and clamping pallets, allows both close-proximity pallet loading on the machine table and optimum use of the space within the machine. High clamping forces create an extraordinarily rigid system. Excellent retaining forces enables the highest torque levels, together with a high precision connection between the robot and the clamping plate. This makes handling of heavier pallets in particular, easier, and safer.

Zimmer Group has now expanded the zero-point range with the launch of its new pallet changer system.

The pallet changer was designed for clamping pallet couplings or clamping pins with high levels of repeatability. The innovative structural design means that the system is clamped without the need for pneumatic pressure. However, clamping forces can be further increased by using Zimmer's PLUS connection, which provides pneumatic assistance. In addition to four rotation locks for pallet coupling, the system features an integrated blow-out or cleaning function which prevents dirt or liquid from collecting in the pin holder, contact surface and rotation locks.

The pallet coupling is used as a pallet interface for the product and creates the connection to the clamping pallet. The rotation lock enables backlash-free positioning of the bearings when joining with the product. Safe operation can be verified by sensors by means of piston position sensing and a clamping position check. All functions can be controlled directly via the pneumatic connections on the sides. There is also the option to control the unit by means of alternative connections on the bottom of the product.



The workpiece carrier with the zero-point clamping system accompanies the workpiece all the way through the different production processes.

Automating processes using the zero-point clamping system dramatically increases productivity of tasks that require precision. Machine setup times are reduced by up to 90 percent and cleaning and maintenance of the system is minimal. The option to link processes, one after the other, in a single workpiece clamping system, in various machining cells, based upon identical clamping system geometries, allows manufacturing synergies previously unachievable. The workpiece carrier with the zero-point clamping system accompanies the workpiece all the way through the different production processes, ensuring maximum precision and optimum cost efficiency. In the challenging environment businesses operate within today, Zimmer Group's zero-point clamping and pallet change systems provide manufacturers with the opportunity to increase and maintain the highest levels of productivity.

Zimmer Group (UK) Ltd
Tel: 07944 330 158
Email: info@zimmer-group.com
www.zimmer-group.de/en

New PolyClamp Verso for simple and precise clamping solutions

CERATIZIT understands the need for flexible part clamping solutions, particularly when loading multi-axis machines with a wide variety of workpieces. Already offering a comprehensive range of clamping solutions, its new PolyClamp Verso enables machinists to overcome even the trickiest of loading scenarios.

Situations which require both small and large batch sizes of different materials to be machined greatly benefit from clamping systems which have some flexibility in how they can be used. All these issues are solved, however, with CERATIZIT's PolyClamp Verso. Christoph Retter, product manager for workpiece clamping at CERATIZIT explains: ''Productivity can frequently be increased by at least 30 percent simply through workpiece handling during clamping and flexible retooling of the clamping technology and in individual cases this increase can even rise as high as 90 percent.''

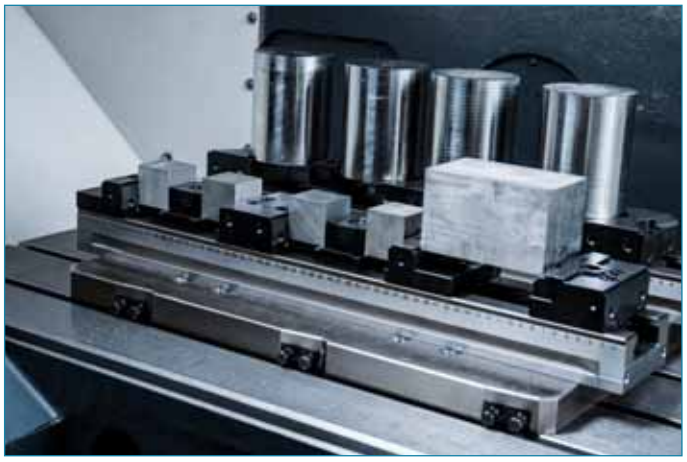
As a standardised clamp, which can be used in a wide variety of loading scenarios, the PolyClamp Verso ensures that the user benefits from a simple and efficient solution, as well as saving on procurement and storage costs which come from having different clamps for different scenarios.

The PolyClamp Verso is particularly effective for use in 3-4 or 5-axis machines where it can easily clamp all part variants. However, with base rails that can be combined to connecting elements and 24 variants of clamping jaws, there are no limits to what this model can be adapted to.

Christoph Retter further explains that this model's new design means that even more jaws can now be clamped per base rail, meaning that more, larger unmachined, or finished parts can also be clamped. The measurement scales, which are lasered onto the centric vice, offer further benefits when it comes to handling the PolyClamp Verso, as this allows the jaws to be positioned with speed and accuracy on the rail.

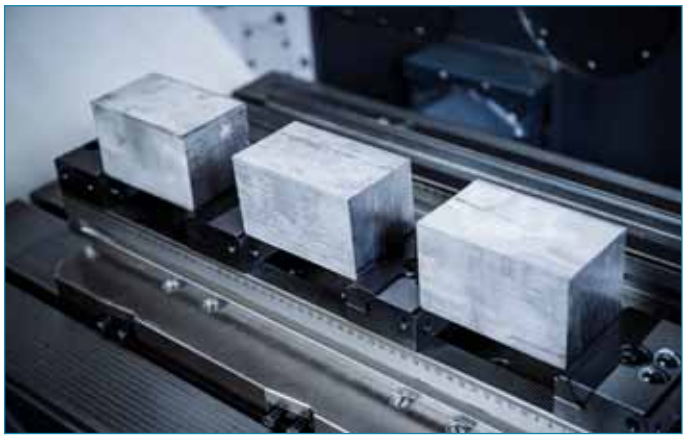
CERATIZIT's PolyClap Verso is also equipped with a quick jaw change system. This means that with the use of just two screws the fixed and adjustable jaws can be released, moved upwards or repositioned. The model's design, which allows one jaw to be removed without dismantling the other, massively reduced setup times and ensures a speedy, accurate and simple machining process.

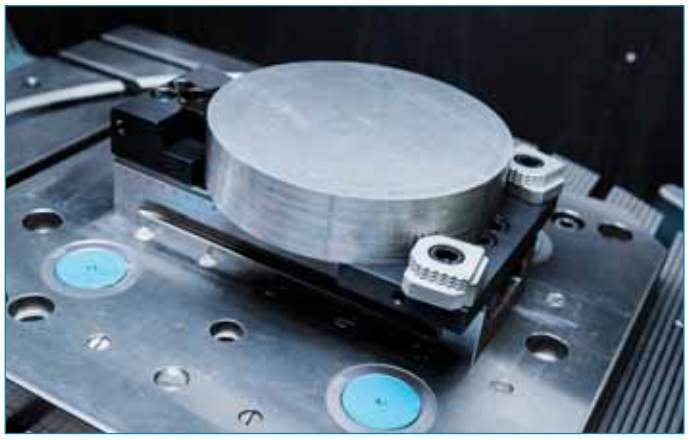
CERATIZIT UK & IRELAND Ltd Tel: 0800 073 2073
Email: info.uk@ceratizit.com www.ceratizit.com



Top left and right: ***The PolyClamp Verso's quick jaw-change system means that parts can be clamped quickly and easily***

Bottom left and right: ***The PolyClamp Verso is a versatile solution to machine scenarios. There are no limits when it comes to adapting this clamp***





Mini-inline: the new standard for easy and safe marking

A complete marking solution

Gravotech has introduced the Mini-inline, its new concept for a secure laser marking, designed for industrial companies and integrators wishing to free themselves from the complexity and cost of a class 1 laser enclosure.

The Mini-inline is a laser protection nose that is placed between the laser marking machine and the part. This product was developed in partnership with a major player in the automotive industry with the aim of marking large metal or plastic industrial parts without compromising the speed of a production line.

Secure

With its anodised aluminum chamber, the Mini-inline isolates the laser beam emitted by the laser marker from the working environment while several safety sensors ensure the presence of the Mini-inline and the part to be marked. Marking will only start if the Mini-inline is correctly attached, and if the part to be marked is present.

Particle management has also been planned, an outlet allows the laser system to be connected to a suitable extraction system. The fumes and particles generated during the laser marking process are sucked up and conveyed to the filters of the industrial extractor thanks to an ingenious system of air ducts, optimised to avoid the deposition and accumulation of particles within the Mini-inline, or even the lens of the industrial laser marking system. There is no need for goggles or masks.

Easily integrated

Due to its small size, the Mini-inline can be easily integrated into a production line. You can forget about bulky and expensive laser protection structures.

Its small size allows it to be placed between the Gravotech laser marking machine and the part to be marked. Together it forms a secure marking unit that can be integrated on any production line.

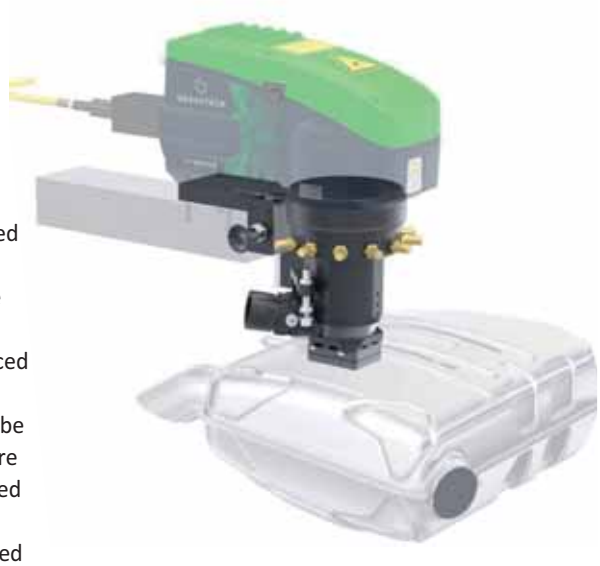
The Mini-inline can be integrated horizontally or vertically and even be mounted on a robot arm. Its compactness makes it possible to mark hard-to-reach areas and a wide variety of metal or plastic parts.

Economic

Compatible with the fiber, fiber energy, hybrid and green laser marking machines, the Mini-inline's design makes it very easy to assemble and mount.

Contrary to a costly and classic class 1 laser housing solution, which secures the environment of the laser marker, the Mini-inline does not require any major modification to the production line.

No consumables are required to operate it.



We only recommend a cleaning every 20,000 marking cycles (according to your application).

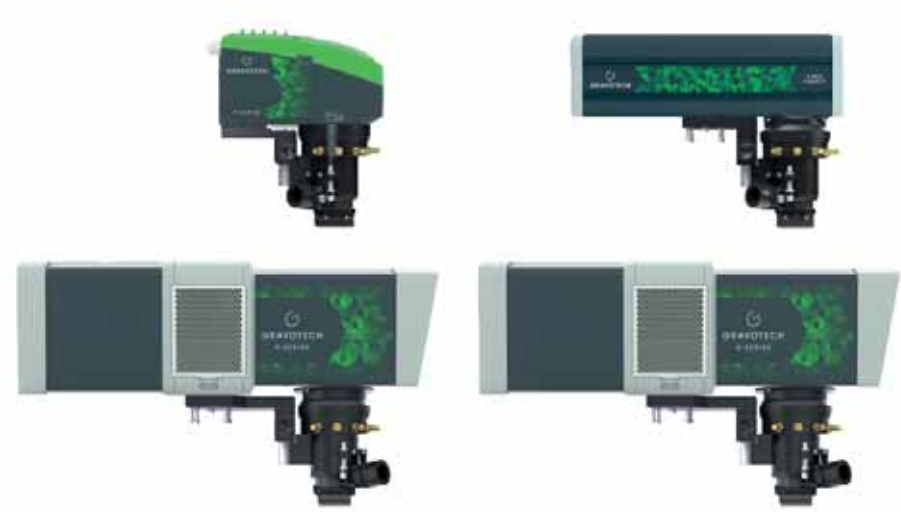
Here is a list of typical parts that the Mini-inline marks: body parts; exhaust pipes; crankcase; gearboxes; stamped parts; fuel tanks; etc. Approved and reliable, the Mini-inline is already installed in over 200 production sites.

By contacting Gravotech, you can obtain a free feasibility study on the installation of a laser marking machine and a Mini-inline.

Gravotech was born in 2008 from the merger of Gravograph, Technifor and Type3 and unified under one brand in 2020. With its direct presence in over 50 countries, it always has a marking and engraving expert close to you to bring their expertise and know-how in qualifying your application, installing your equipment and training your collaborators.

With Gravograph and Technifor, an international presence has been established for more than 80 years in the US and Europe and more than 30 years in the Asia Pacific and Latin America.

Designed in France and made near you, the equipment is manufactured and supplied from 3 production sites in Duluth, Atlanta, USA, La Chapelle Saint Luc, Troyes, France and Shanghai in China.



Gravotech Ltd
Tel: 01926 884433
Email: info.uk@gravotech.com
www.gravotech.co.uk

New XXL-Box laser marking enclosure from SIC Marking

"After the huge success of the L-BOX and XL-BOX, our compact marking stations, we have been asked on numerous occasions to offer a larger workspace in order to be able to mark large parts." These are the words of SIC Marking on the launch of its new XXL-BOX Laser Marking Station.

Available in three basic sizes at a very competitive price, the XXL-BOX perfectly complements SIC Marking's laser workstation wide range of products, which makes it possible to meet all customer requirements in terms of cabinet size.

As its name indicates, the new XXL-BOX station offers record working dimensions, up to 520 mm high, as well as great modularity thanks to its three standard models, 800, 1,200 and 1,600 mm wide and its numerous accessories. The strength of this new product also lies in its ability to adapt perfectly to different customer requirements, illustrating the company's extensive know-how in the realisation of tailor-made solutions:

"The XXL-BOX is ideally suited for the classic use of its large working volume, but also enables project managers at SIC MARKING to offer tailor-made solutions for more complex large-volume marking applications. Automatic three-dimensional axis, automatic loading system, loading drawer or turntable are just a few examples of the applications proposed by technical teams to meet customers' needs."

Requested by a large number of customers, the new XXL-Box Laser Marking Station has been well received by ETIs and large companies manufacturing large parts or sub-assemblies such as shafts, valve or pump bodies, crankcase, exhaust components but also bodywork sub-assemblies. It is not surprising to find it in the sectors in which SIC Marking is already active including automotive, aeronautics, industrial vehicles, hydraulics, oil & gas.

As a result, the international French group had the opportunity to prove all the qualities of its new product by taking up the challenge offered by ZF, a major German automotive supplier. The company wanted to mark a Datamatrix code on gearbox prototypes. The solution provided was an XXL-BOX laser marking station, with a 5-axis laser that made

it possible to achieve a marking window of 900 x 500 x 500 mm. The project was the result of a technical and commercial cooperation between the headquarters and SIC MARKING GMBH which demonstrates the great adaptability of this new product to customised requests.

SIC Marking UK Ltd
Tel: 01926 830372
Email: salesuk@sic-marking.com
www.sic-marking.com

Bringing traceability laser engraving in-house at North Ridge Pumps

North Ridge Pumps is an independent manufacturer and distributor of pumps. It works within a range of industries both in the UK and internationally.

Like many manufacturers of industrial equipment, North Ridge Pumps produce systems that need to be traceable. This means applying a permanent mark onto a plate to be attached to the pumps. North Ridge Pumps was outsourcing its plate marking to an external company. This brought with it its own set of challenges:

Inconsistency: Outsourcing meant that North Ridge Pumps were unable to conduct any quality assurance on the plates being marked, so inconsistencies were commonplace.

Expense: Inconsistencies would then require corrections and replacements to be ordered. This, along with outsourcing margins, meant higher costs to their business.

Limited control: If North Ridge needed to change its plate design, alter key information at the last minute, or even change the plate supplier, this would need to be done through the middle man.

Longer turnaround times: All of the above challenges increased the time taken to get parts marked and traceable so they can be shipped to customers.

North Ridge Pumps' interest in investing in its own laser technology was rooted in a desire to speed up its processes, offer a higher quality finish for its customers and ensure less repair costs and wasted raw materials. Pablo Martinez-Moore, commercial and marketing director, got in touch with Needham Laser Technologies to see how it could help them.

The solution

Needham Laser Technologies works with North Ridge Pumps was a perfect example of its need to adapt to the Coronavirus pandemic. During this time, Needham moved to conducting 'virtual demos 'with its customers, utilising software such as Teams and Zoom. It engraved some plates for North Ridge Pumps via video which was then sent to them for inspection.

The N-Lase Desktop was identified as the right solution for North Ridge Pumps. The Desktop is compact but still features rich, with a robust enclosure to withstand the harshest manufacturing environments.

Having found the right solution, the Needham production team got to work building the laser at its HQ in Whitchurch. It is proud to have the 'Made in Britain' badge on all of its laser systems.

Its engineers installed the machine at North Ridge Pumps and provided a full day of training for the team to ensure that it was able to get the most out of its machine with knowledge of basic functions and mark settings. Its in-house tech team in Whitchurch is always on hand at the end of the phone should customer's need additional assistance or any technical support.

The impact

For North Ridge Pumps, along with all industrial manufacturers who are placing products on the GB market, it is essential that UKCA marks are applied consistently and accurately to meet new UK regulations. The ability to apply these marks in-house means that North Ridge Pumps have the peace of mind that all of its pumps will be compliant for distribution.

One of the real selling points for North Ridge Pumps was the fact that Needham Laser Technologies is a UK-based company, which enables it to always be on hand should companies require its aftersales support.

The company is not just in the business of selling machines, but also of building lifelong partnerships with its customers. It is pleased to be working with its partners at Wealdpark and it looks forward to sharing its passion for innovations in laser technologies with them for years to come.

One of the main reasons for Wealdpark choosing Needham Laser Tech was it's UK-based support and training.

Needham Laser Technologies Ltd
Tel: 01948 660011
Email: info@needhamlaser.com
www.needhamlaser.com

TLM expands laser portfolio with green laser marking systems

As the UK distributor for some of the world's leading laser technology manufacturers, TLM Laser is able to boast a comprehensive portfolio of laser modules and systems. A further benefit of these enduring partnerships is the fact that TLM is always able to offer the latest generation laser technologies which can revolutionise many different manufacturing processes. The latest additions to TLM's range, from partner FOBA Laser, is a range of Green Lasers.

The main benefits of FOBA's green lasers include a significant increase in marking speed and marking quality on materials which previously did not present the optimum marking clarity or contrast when using UV or fibre lasers.

FOBA's new green laser marking systems offer solutions to the most challenging applications

Materials which can now be successfully processed using this technology include special plastics such as UHMWPE, HDPE or PMMA for which additives may no longer be necessary when using a green laser. Other materials where marking quality will be significantly improved include white and transparent plastics in medical technology applications, combined material parts in the automotive sector or highly reflective metals, glass, or other shiny substrates.

FOBA's V.0071-gr and FOBA V.0141-gr green laser marking systems, at 532 nm wavelength, close the gap between UV and fiber laser markers, at 355 nm and 1,064 nm, respectively. The combination of relatively high laser power and a vanadate source extends the areas of application whilst enabling higher speeds.

The new marking laser is available with either 7 watt or 14 watt laser power options. The new lasers can be integrated easily into production environments due to the compact size of the marking unit when compared to a UV-laser. With a broad range of interfaces available and five possible marking field sizes, the new lasers offer a flexible solution to a wide range of applications. A further benefit is the fact that the lifetime of FOBA's green laser vanadate laser source is twice that of a UV laser source, which significantly reduces operational and ownership costs.

TLM's Andy Toms comments: "We are delighted to be able to add these new green lasers to our portfolio and excited about the new opportunities these lasers will open up for us. The operational characteristics and performance of the green laser now allows us to offer a robust solution to a new range of challenging applications."

The new green laser marking systems can also take advantage of FOBA's proven laser marking workflow with camera and mark alignment software. Andy Toms continues: "The optical part inspection and validation of marked contents, together with the automated and precise positioning of the laser mark have long been valued by our customers as a reliable and safe workflow solution."

The technologies described here are just a small part of the comprehensive range of laser technologies and solutions available from Bromsgrove-based TLM Laser.

TLM Laser Tel: 01527 959 099
Email: sales@tlm-laser.com www.tlm-laser.com

Alchemy Integrated Waste Solutions: Revolutionising sustainability in the manufacturing sector

Alchemy Metals Group launches new division

The manufacturing industry has been a vital driver of economic growth worldwide, providing goods and materials for various sectors. However, with increasing concerns about environmental sustainability, manufacturers are under pressure to adopt responsible waste management practices. In response to this urgent need, Alchemy Metals Group, a renowned leader in the metal recycling industry, has launched its new division, Alchemy Integrated Waste Solutions. This new division aims to revolutionise sustainability in the manufacturing sector by providing comprehensive waste management solutions that promote recycling, reduce waste and minimise the environmental impact of manufacturing processes.

As a trusted name in the recycling industry, Alchemy Metals Group has a long-standing commitment to sustainability. The launch of Alchemy Integrated Waste Solutions further emphasises the company's dedication to environmental responsibility by offering tailored complete waste management programs designed to address the unique needs of manufacturers. One of the key aspects of Alchemy Integrated Waste Solutions' approach is providing a single supplier solution, which can significantly reduce the administrative burden for customers while promoting sustainable practices.

A single supplier solution is a streamlined approach that consolidates waste management services with one provider, offering a centralised and efficient waste management process. This approach eliminates the need for manufacturers to engage with multiple waste management suppliers, reducing administrative complexities, paperwork and coordination efforts. By having a single point of contact for all waste management needs, manufacturers can streamline their waste management processes, saving time, resources and costs, allowing them to focus on their core business operations.

Additionally, a single supplier solution enables better visibility and reporting on waste management activities, facilitating data-driven decision making and monitoring of waste management performance. Alchemy Integrated Waste Solutions offers comprehensive reporting and analytics, providing customers with detailed insights into their waste generation, recycling rates and environmental impact. This data-driven approach allows manufacturers to measure their progress towards sustainability goals, identify areas for improvement and make informed decisions to optimise their waste management practices.

In addition to the administrative benefits, a single supplier solution also promotes sustainability by ensuring that waste is managed in an environmentally responsible manner. Alchemy Integrated Waste Solutions follows best practices in waste management, adhering to regulatory requirements and prioritising sustainable methods such as recycling and repurposing. This ensures that waste materials are properly managed and valuable resources are recovered, contributing to a circular economy approach where waste is minimised and materials are kept in productive use for longer.

Examples of sustainable practices in waste management include recycling, waste reduction and repurposing. Recycling is a crucial process that involves converting waste materials into usable materials that can be fed back into the manufacturing process. Metals, plastics, paper, cardboard, wood and other materials can be recycled, reducing the demand for virgin raw materials and conserving energy. For instance, recycling one tonne of cardboard saves approximately 17 trees, 50,000 litres of water and 3,800 litres of oil. It reduces greenhouse gas emissions by over 6 metric tonnes of carbon dioxide equivalent, according to Waste and Resources Action Programme (WRAP), a UK government supported organisation.

Waste reduction focuses on minimising the amount of waste generated in manufacturing processes. This can be achieved through process optimisation, waste segregation and material substitution. For example, optimising production processes to reduce material waste, implementing lean manufacturing principles and using precision cutting and machining techniques can all help reduce waste generation. By reducing waste at the source, manufacturers can minimise

their environmental impact and improve their overall operational efficiency.

Repurposing is another sustainable practice that involves finding alternative uses for waste materials. For instance, waste materials generated from one manufacturing process can be repurposed for another process, creating a closed-loop system that maximises resource utilisation. For example, waste wood from manufacturing processes can be converted into wood chips for use in landscaping or biomass energy production, reducing the need for fresh timber and promoting resource conservation.

Alchemy Integrated Waste Solutions also emphasises education and training as a key component of their sustainable waste management approach. The division provides education resources and taining programs to help manufacturers understand the importance of waste management, learn about best practices and develop sustainable waste management strategies tailored to their specific needs. By empowering manufacturers with knowledge and skills, Alchemy Integrated Waste Solutions aims to create a culture of sustainability and promote responsible waste management practices throughout the manufacturing sector.

The new division covers all waste streams, as well as metals processing and service, secure destruction and WEEE recycling; Following a site audit, the team at Alchemy will produce a comprehensive proposal for their customers, making recommendations for the handling, storage, processing and recycling of their waste streams. The overwhelming majority of businesses after this audit are likely to not only reduce waste, resulting in significant cost savings, but additionally they are likely to increase their revenue/commodity streams from materials that have previously been sent straight to the general waste bin.

The benefits of adopting sustainable waste management practices, such as those offered by Alchemy Integrated Waste Solutions are manifold for the manufacturing sector. Firstly, sustainability has become a key consideration for customers and investors alike. Manufacturers that can demonstrate a commitment to responsible waste management and sustainability are more likely to attract environmentally conscious customers and investors, leading to increased market demand, enhanced brand reputation and improved business performance.

The launch of Alchemy Integrated Waste Solutions by Alchemy Metals Group represents a significant milestone in promoting sustainability in the manufacturing sector. The divisions comprehensive waste management solutions, including a single supplier solution, sustainable waste practices, education and training, innovation and collaboration, are designed to help manufacturers optimise their waste management practices, reduce their environmental impact and drive positive change in the industry.

Alchemy Integrated Waste Solutions invites manufacturers to book an on-site audit to explore how their tailored waste management programs can help drive sustainability in their manufacturing processes and achieve their environmental goals. Together we can create a more sustainable future for the manufacturing sector and the environment.

Alchemy Metals Ltd
Tel: 01438 745307
Email: enquiries@alchemymetals.co.uk
www.alchemymetals.com

Easy ways to improve your environmental impact

Reducing the environmental impact in an industrial setting can feel like a challenging task, but there are many areas of the business where you can make a difference and your choice of cleaning wipes is one, often overlooked, area. Mewa UK managing director, Günes Yenen looks at the issue and shares how you can operate more sustainably with a few simple changes.

Cleaning up and the environmental impact

By their very nature, industrial workplaces can be dirty and greasy environments with oils, fluids and solvents used, meaning leaks and spills are a regular occurrence. Industrial workplaces typically use single use wipes or disposable blue paper roll to mop-up such spills, metal fines and to clean parts as they are disassembled, repaired and refitted. Like the use of any disposable product, it is inherently wasteful and this practice has a significant environmental impact.

A study by the climate-neutral consulting firm, ClimatePartner has shown the enormous ecological footprint of disposable cleaning cloths compared to reusable textile cloths. It compared our Mewatex wipe with a 100 percent cellulose paper towel and a non-woven cloth made of 70 percent cellulose and 30 percent polypropylene.

The study looked at water and energy consumption, as well as CO_2 emissions during the manufacture and use of both types of wipes. The results showed significant differences, up to 40 times more, in the resources used to remove 1 kg of dirt.

Among the results it was found that the total amount of water consumed when using a 100 percent disposable paper towel is 188,500 litres, compared to just 4,538 litres for the reusable wipe.

The energy consumption during production was also clearly contrasting; the reusable cloth consumes nearly three times less energy than a disposable cloth with 87 kWh compared to 31 kWh for a reusable cloth.

In terms of greenhouse gas emissions generated, disposable wipes cause between 2.8 and 5 times more pollution than reusable cloths: 33.3 and 61.6 kg of CO_2 compared to 11.9 kg of CO_2.

Also striking was the difference in the amount of textile needed to make the cloths. The amount of textile used in a disposable paper-based cloth is 25.5 kg compared to just 0.5 kg for a Mewa cloth that has a cleaning life of up to 50 applications.

Paper roll and single use wipes aren't really all that efficient at absorbing liquids. Furthermore, any cleaning cloths and paper wipes soaked with oil and other industrial fluids are potentially classified as 'absolute hazardous' entries on the Waste Framework Directive's 'List of Waste' document. They therefore must be safely stored before being disposed of by an accredited hazardous wastes contractor.

Instead of this traditional approach many industrial workplaces are contracting third-party suppliers to deliver high-quality re-usable wipes. Once soiled, these products are then collected, laundered in an environmentally-friendly way and returned for re-use.

This also eliminates the need to manage the purchase, delivery, storage and disposal of single-use materials, not to mention all of the wasteful packaging these come in. The service also removes the significant burden of hazardous waste storage and disposal from companies, reducing costs as well as mitigating potential health and safety fines.

Environmental benefits

In additional to the conservation of resources and emissions, there are other environmental benefits of using such a service. Because of their reusability, we estimate that the use of our wipes by our customers prevents thousands of tonnes of industrial waste from being created.

The washing process is compliant with all legal and environmental regulations and we go further. For example, we recover the oils from used wipes to power our washing and drying systems, thus covering 80-90 percent of our energy requirements.

Increasingly customers, investors and employees want to do business with and

work for greener companies[1] and when two-thirds[2] of the average company's environmental, social, and governance footprint lies with suppliers, it makes sense to work with partners who can help you be greener.

Sources

1. **https://www.recyclinglives.com/news/general/report-reveals-81-people-prefer-buy-sustainable-sellers#:~:text=from%20sustainable%20sellers**

2. **https://www.mckinsey.com/business-functions/operations/our-insights/buying-into-a-more-sustainable-value-chain**

Mewa has been providing full-service company textiles since 1908, making it a pioneer of textile sharing. Today, Mewa supplies companies with work and protective clothing, cleaning cloths, oil collection mats and floor mats from 45 locations throughout Europe including care, maintenance, warehousing and logistics. In addition, occupational health and safety articles can be ordered. Around 5,700 employees serve around 190,000 customers from industry, trade, crafts and gastronomy. In 2020, MEWA generated sales of 745 million euros, making it a leader in the textile management segment. The company has received numerous awards for its commitment to sustainability and responsible action as well as for its brand management.

Mewa Textil Tel: 0121 752 5850
www.mewa.co.uk

Striking a hammer blow for metals recycling

Footprint Tools, one of the leading manufacturers of traditional hand tools in the UK, is at the heart of a research project that could see Sheffield spark a recycling revolution in industrial forging that unlocks a step change in the manufacture of safety critical components for the aerospace, defence and energy sectors using machining waste and state-of-the-art linear hammer technology.

The Sheffield-based business with 12 employees and two robots traces its roots back to the 1760s, but has always had its eyes firmly focused on the future. It has unveiled the latest addition to its Admiral Works shopfloor: a £1.4 million state-of-the-art Schuler precision linear forge, the only one of its kind in the UK and one of only three in Europe.

As the centrepiece of an R&D partnership between the small family firm and two world-leading research institutions, The Henry Royce Institute (Royce) and the University of Strathclyde's Advanced Forming Research Centre (AFRC), part of the National Manufacturing Institute Scotland Group, the equipment will help consolidate Sheffield and the UK's lead in advanced forging manufacture.

Richard and Christopher Jewitt showing off the Schuler hammer on the factory floor at Footprint Tools

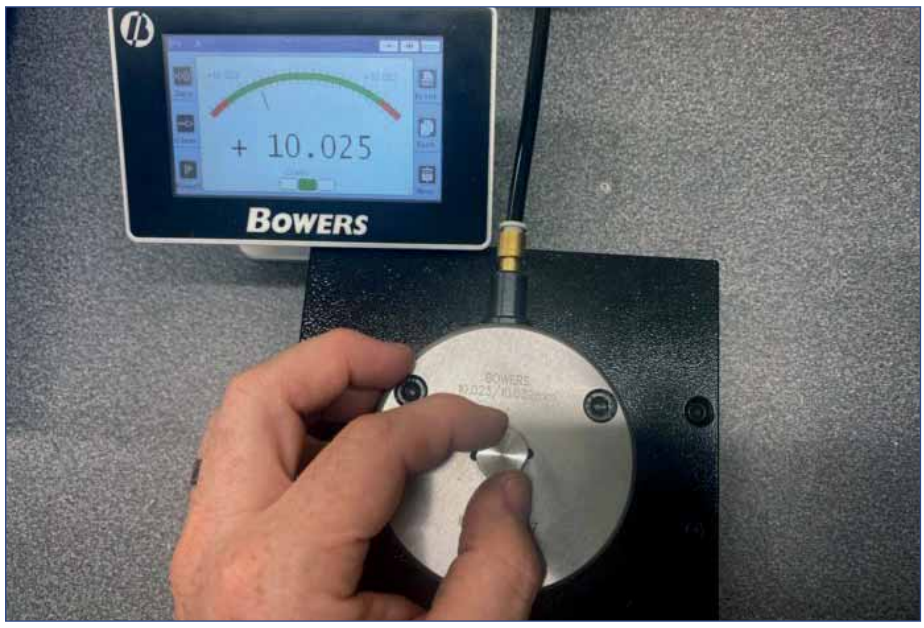
Following a packed gathering of the AFRC's Forging and Forming Forum, where the R&D venture was announced, Royce professor Martin Jackson said he was delighted that the Servo technology hammer, initially destined for Manchester, had found a home in Sheffield, the hub of the UK's forging and forming industry. "This raises forging technology to a completely new level. Our job at Royce and the AFRC is to take the knowledge we unlock from this R&D collaboration and roll it out to forging companies across the country, especially in the use of recycled machining waste such as titanium."

The AFRC is a globally recognised centre of excellence in innovative forging and forming technologies and is based near Glasgow Airport with an outreach office in Sheffield's Olympic Legacy Park. It is part of the UK's High Value Manufacturing (HVM) Catapult.

Footprint Tools
Tel: 0114 2327080
Email: hello@footprint-tools.com
www.footprint-tools.com

Addmore Engineering streamlines measurement of safety and performance critical components with Bowers air gauging system

Addmore Engineering has found the perfect way to measure safety and performance critical components with an air gauging system from Bowers Group. As a family run business which has supplied precision CNC turned and milled components for over 40 years, Addmore Engineering supplies precision components and sub-assemblies into the aerospace, automotive, hydraulic, autosport, fastener, instrumentation, oil & gas and medical sectors.



As part of its inspection process, Addmore Engineering need to measure bolts which are critical components on braking systems. It is, therefore, imperative that 100 percent of the parts produced are within tolerance. The air gauging system from Bowers Group ensures that the performance critical parts manufactured by Addmore Engineering satisfy customers requirement to 100 percent inspect safety critical characteristics and meet tight tolerances.

Ben Vasquez, managing director of Addmore Engineering Ltd says: "The Bowers air gauging system is the perfect solution for us because it standardises the measurement process and eliminates the potential for human error. The system allows multiple operators to accurately check the diameter of the components in minimal time and the modern control panel gives a quick yes/no output that allows each bolt to be checked with guaranteed high precision results in a matter of seconds."

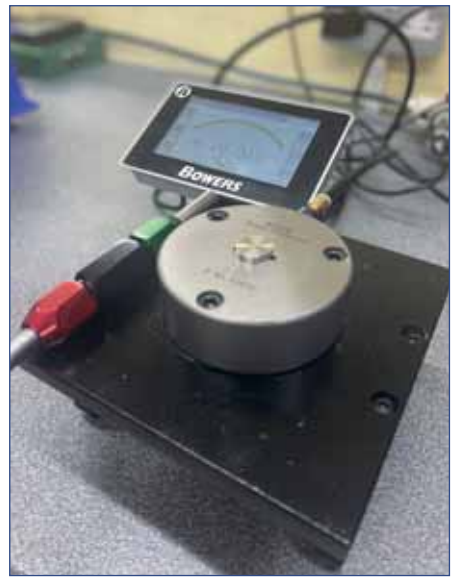
Addmore Engineering manufactures in excess of 10,000 of the bolts every month, therefore a fast, repeatable, and user-friendly solution was key. The business had previously experienced some difficulties whereby operators were achieving differing readings with micrometres; a significant problem when trying to measure 7 µm tolerances. The Bowers air gauging system allows many members of the team to check component diameters in a short space of time and the touchscreen display with its customisable display interface is easy to read and interpret results. Using air flow volumes and pressures to measure parts, air gauging is a reliable, repeatable technology well suited for applications that demand sub-micron precision tolerancing.

Air gauging technology is very flexible, enabling measurement of not only dimensions, but geometric and relational characteristics, such as squareness, parallelism, ovality, taper and straightness. Bowers air gauging systems provide a simple yet robust method of measurement with a myriad of measurement capability and its small footprint means it's perfect for the busy shop floor. The Bowers air gauging system at Addmore Engineering is used by inspectors and machine operators on a daily basis.

Ben Vasquez continues: "Personally, I have always been aware of the benefits of air gauging. During my apprenticeship I regularly used the older dial/clock-based systems. The advantage of the modern digital display is that anybody can see if the component is correct just by looking at the colour.

"The sales and technical support from Bowers has been first class and we have already begun discussions about further projects."

Addmore Engineering machines a wide range of components ranging from 0.5 mm diameter to over 350 mm in diameter which are supplied into a variety of markets. With a machine shop consisting of 25 CNC turning machines, 14 CNC milling machines and three centreless grinders, Addmore Engineering offers the highest quality components to meet any specification and delivery requirements. Operating out of three buildings, each with its own inspection departments, the philosophy of the business is that each department is fully autonomous and has all the equipment required to measure the specific components manufactured within that building. By investing heavily in automating processes with equipment such as a CMMs and optical measuring machines, Addmore Engineering has already made much progress in its inspection departments across the business.



Bowers
Tel: 01276 469866
Email: sales@bowersgroup.co.uk
www.bowersgroup.co.uk

NEW Products

ML10

Mitutoyo 50% OFF UPGRADE OFFER

Collect, unify, analyze and visualize with *NEW* MeasurLink® 10.

MeasurLink® 10 – a robust data management and SPC software for manufacturers of any size. Its automated analysis tools streamlines data collection and inspection processes. Now available with even more ways to make measurement data analysis easier, inspection more efficient, and better ways to find and eliminate sources of variation!

And with our *50% OFF* upgrade offer – there is no better time to advance your inspection capabilities.

Scan here to discover more about **MeasurLink®10** or visit **www.mitutoyo.co.uk/measurlink**

Mitutoyo

Facing new quality challenges together with Accretech

At its factory in Sarezzo, Italy, P.E.L Pintossi produces a wide range of components for industry and carries out a large number of processes with increasingly high quality requirements. Thanks to the new SURFCOM NEX Profilometer-Roughness Gauges from ACCRETECH, profile and surface control can be carried out directly in production, just a few metres from the machine.

Founded in 1960, P.E.L Pintossi S.p.A. is a leading industrial company within the brass moulding sector, with three cutting-edge production units and a selected network of associated companies. Today, the company is able to meet the demands of customers from different sectors by producing metal alloy components printed and machined to the customer's design, from valved and thermostatic taps, to ball safety valves and fittings for hydraulic and pneumatic systems, up to the recent development in the automotive field.

"Each machined component has specific requirements in terms of dimensional requirements and surface quality. For this reason we need specific machinery such as the new SURFCOM NEX recently purchased from ACCRETECH." says Mirko Balduchelli, head of metrology at P.E.L Pintossi.

The collaboration between the two companies began several years ago with procurement of the first profilometer and then, in-line with the new quality requirements of P.E.L Pintossi, the progressive addition of further instruments. To reduce the inspection time of the workpieces produced, Mirko Balduchelli has reworked the location of measuring machines, creating several "metrological islands" and adopting a new approach for quality control. Flexibility, precision and traceability are the main requirements for P.E.L Pintossi's new metrology investments. The latest purchases were two new SURFCOM NEX 041 devices which allow combined measurements of profiles and surfaces with improved performance in terms of precision, reliability and flexibility.

Ensure quality and flexibility as volumes grow

P.E.L Pintossi has evolved over the years to be able to adapt to new market requirements, with the demand for increasingly complex components and a shift of customers away from domestic to the international markets. Mirko Balduchelli explains: "Our competitive advantage is certainly the flexibility that allows us to efficiently produce components of different types and in different order sizes. We work with lots of 50 parts up to more than 100,000."

Today, production is mainly entrusted to modern, digitally controlled transfer machines, which have progressively joined and then replaced traditional machines, which continue to be used for simpler machining. The growth of the company is visible: in recent years the size of the main plant has almost doubled and today it houses 35 automatic transfer machines, each capable of carrying out different processes on the same part. This leads to a multiplication of complexity and control needs as Mirko Balduchelli explains: "Our testing department now comprises seven employees who carry out hourly control cycles on each machine, with different tests based on the control cycle envisaged for that processing." In addition to the hourly check, an initial check is also carried out to obtain approval, at the beginning of the production of each order, on each individual machine involved.

To deal with this greater complexity, Mirko Balduchelli has prepared ten "metrological islands", located in the most strategic points of the production site, according to the position of the transfer machines to be served. In this way the employee does not have far to travel with the part to be tested, whatever the type of test required.

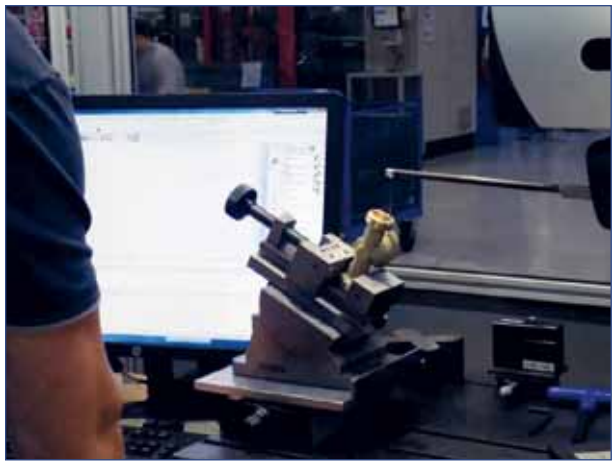
Mikro Balduchelli explains: "Obviously, to manage this level of complexity and the increasing volume of controls, it is essential to have reliable, easy-to-use and flexible tools available, such as ACCRETECH's new SURFCOM NEX 041 rugosimeters-profilometers." Thanks also to the advanced linear drive motors, SURFCOM NEX is in fact the fastest instrument in its class, guaranteeing 1.6 x measurement cycles improvement over the previous model, while maintaining a high measurement accuracy at ±(0.8+|2H|/100) µm.

The new hybrid detectors also allow greater flexibility, adapting to different needs. Depending on the need, the device can be used indifferently for profile and surface testing. Mirko Balduchelli says: "The possibility of making combined measurements of profile and surface is certainly a plus and also allows us to have multi-purpose instruments available, allowing us to address even temporary stoppages of other measuring instruments, or situations that require, for example, a more frequent control of surface quality."

Increasingly critical precision requirements underpinning ACCRETECH's choice

Today, quality control and verification of compliance with increasingly stringent requirements are therefore central elements for the success of the Brescia company, with minimum tolerances in the order of one thousandth of a millimetre. "We started with brass taps for industrial kitchens, but today we work on a great variety of components and parts that are much more complex, using different processes, a very high quality requirement and ever tighter tolerances", continues Mirko Balduchelli. "Respect for tolerances today is critical as our customers often check the parts supplied with specialised machinery and it is therefore necessary to continuously update our equipment of control tools."

The continuous improvement of quality and production standards is a prime objective for P.E.L Pintossi. Mirko Balduchelli highlights the fact that in recent years the company has started a process of improvement to such an extent that it has enabled it to also be competitive in the automotive sector. Every investment decision within the company must be directly endorsed by the owner and also appropriately supported by the managers of the area that who will be using the new machine. To cope with new requirements in terms of measuring profiles and surfaces, after a careful evaluation process, P.E.L Pintossi decided to contact ACCRETECH.



Clear reporting and traceability of measurements

A further challenge that P.E.L Pintossi faces on a daily basis concerns the traceability of all measurements, which is essential not only to respond to customer requests but also to protect itself in the event of quality concerns. All measurements made with ACCRETECH profilometers and roughness metres are recorded in internal test reports. In some cases, especially in the automotive sector, this measurement data must also be provided to the customer. ACCRETECH machines, such as SURFCOM NEX 041, facilitate this process thanks to the integrated ACCTee software that offers excellent usability and a working environment that makes all measurement and analysis activities easy, ensuring clear, complete and easily readable measurement reports. Thanks to a document-based approach, all processes are available in a single result sheet where each type of information can be stored together with the measurement data.

ACCRETECH SBS UK Ltd
Tel: 024 76 651 774
www.accretech.eu

‘Measure twice, cut once’ ensures parts meet specifications

Those in the manufacturing industry completely understand that the ability to obtain accurate measurements is directly tied to product quality and customer satisfaction.

The reality is that the measurement devices you choose can significantly impact your manufacturing success and that’s why it’s so important to choose Hexagon’s manufacturing intelligence division of solutions that deliver decades of expertise to ensure your journey to manufacturing success is met.

Let’s take a closer look at one of those solutions, the Hexagon Absolute Arm, its history, its performance in the field and how it can help ensure parts meet specifications while reducing inspection bottlenecks.

Before we delve into the history of the Hexagon Absolute Arm, let’s first explore exactly what an articulated arm is and how it has forever revolutionised the manufacturing industry.

In the past, performing measurements meant that an employee needed to bring the specific part to the static measuring machine; something that may be fine for a small widget but no easy feat for large, unwieldy or cumbersome parts. Not only did this waste motion and transportation, but it also created the opportunity for new damages or defects to occur.

Thankfully, about 50 years ago, inventor Homer Eaton had an idea: the ROMER arm, a bench-mounted articulating arm designed to measure tubes and pipes. Over the years, as computing advanced and became more compact, Homer Eaton and his colleagues reimagined the arm as a portable device capable of capturing the geometry of all types of objects.

Hexagon acquired ROMER in 2004 and has since launched new models to meet measurement needs across industries, including aerospace and automotive. RA8, the company’s 8th generation ROMER Arm, features a modular architecture that allows it to carry a wide variety of sensors, including touch probes, laser scanners and tube probes.

Portable articulating measuring arms have been a game changer for manufacturers. “Having portable articulated measuring arms allow measurements to be made directly in the manufacturing environment, where process improvements are the most beneficial and most efficient,” says Brian Winters, North America product manager for Absolute Arms at Hexagon.

Measurement doesn’t just take place in the factory; at times, it needs to occur in the field. That’s why manufacturers demand ruggedness and portability regarding their measurement tools. Hexagon’s Absolute Arm is made to be taken to the part for measurement, regardless of the environment. Lightweight and featuring hot-swappable batteries and wireless connectivity, the Absolute Arm is fully portable, performing equally well on forest or factory floors.

Hexagon’s Absolute Arm can handle even the harshest environments. It is the only IP54-rated articulated arm in the world able to withstand splashes, dust and other solid and liquid particles.

Even Hexagon is impressed by the numerous places and ways companies use its Absolute Arms. “NASCAR and Formula One teams take a smaller, more accurate arm and move it around the vehicle. One of our partners came up with a way to put ultrasonics on the end of the arm. One of the more interesting tours we got earlier this year was having an Absolute Arm scan down in an area of a submarine hull still being put together, then sending the data out in real-time to a computer upstairs. As fast as he could move it, the data was there. It was impressive to see. In fact, when we walked up, it almost looked like the image in the brochure.” Brian Winters states.

One of the biggest manufacturing headaches occurs when bad parts make it to the product line. When components that don’t meet specifications aren’t flagged and removed, the results are lower productivity, higher costs, and lost customers. The Hexagon Absolute arm makes measurement easy, eliminating inspection bottlenecks to reduce overall inspection time and allow more parts to be reviewed.

Available in three models, three accuracy levels and seven sizes, Hexagon’s Absolute Arms are modular, multifunctional tools capable of meeting measurement challenges across industries. With functionality including high-accuracy touch probing and fast and accurate 3D laser scanning, Hexagon offers Absolute Arms that meet a manufacturer’s specific metrology requirements.

Hexagon’s performance and versatility make it stand out from the competition in the market. The metrology hardware features a modular wrist that allows for hot-swapping, allowing work to continue without unnecessary downtime.

Hexagon
Tel: 0870 446 2667
Email: enquiry.uk@hexagon.com
www.hexagonmi.com

FARO releases Hybrid Reality Capture

FARO Technologies, Inc, a leader in 4D digital reality solutions, has announced the release of Hybrid Reality Capture™, powered by Flash Technology™, a first-of-its-kind solution that delivers faster scanning for large-volume projects in architecture, engineering, construction and public safety applications.

Accessed through FARO's advanced workflows, Hybrid Reality Capture is the newest scan mode for Focus Premium Laser Scanner users. It combines the accuracy of a static 3D laser scanner with the speed of a panoramic camera. The unique combination of fast scans with colorised 360° images enables users to complete up to two weeks of on-site work in one week. Improving scanning speed by 100 percent means customers can complete projects faster without increasing costs.

"Hybrid Reality Capture is a best-of-both-worlds innovation that will improve on-site productivity and deliver state-of-the-art colorised visual clarity at a highly affordable price," says FARO president and CEO Michael Burger. "Industries that have made trade-offs between capturing 3D data accurately or quickly have been waiting for this hybrid solution and we are excited to bring it to our markets."

Flash Technology will enable more frequent, faster data capture, requiring only 30 seconds per scan. Thanks to proprietary smart upscaling algorithms, the output includes all collected points, with images that look crisper than the same resolution scans with traditional methods. It will be available as an add-on subscription in the Stream mobile app.

FARO Technologies UK Ltd is a subsidiary of FARO Technologies, Inc. FARO develops and markets computer-aided measurement systems and software worldwide. The portable coordinate measuring devices from FARO, together with their industry-specific software solutions, allow high-precision 3D measurements and 3D comparisons of parts and complex systems directly within assembly and production processes. FARO measurement systems are used anywhere where the most accurate measurements are necessary. They are used for inspecting components and component assemblies, production planning and inventory documentation, as well as for the investigation and reconstruction of accident sites and crime scenes. They are also used for digital scanning of historical sites.

FARO Technologies UK Ltd
Tel: 024 76 973 000
Email: uk@faroeurope.com
www.faro.com

Ingersoll Tools GmbH has integrated VERICUT into the digital process chain

Small lot sizes, short delivery times

There's no better way to describe the greatest challenge the global manufacturing industry is facing. How do you address it? Perfection in production, as one example, is the foundation for sustainable competitiveness.

This is why Ingersoll Tools GmbH has been using VERICUT since 1996 as the interface between NC programming and production. Thanks to VERICUT, this full-service provider in the machining industry can load in its tools, clamp its workpieces and start production without fear of scrapping parts or machine collisions. Errors are detected during simulation, before actual machining.

"No program goes into production without VERICUT," says CADCAM manager, Susanne Klamma. "In combination with our own software ITM Builder, the simulation saves us a lot of time and worry."

Handling the risks at Ingersoll is not an option, but a requirement. At the Haiger headquarters alone, up to 90 percent of the tools are special orders with lot sizes ranging from 1-3.

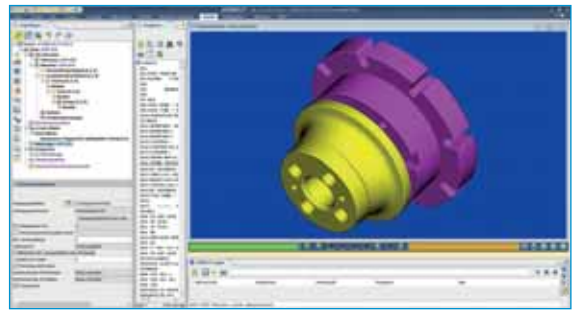
Ingersoll Tools GmBH

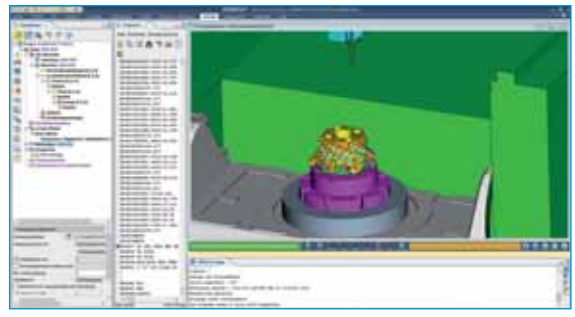
Ingersoll Tools GmbH essentially produces milling and drilling tools with indexable inserts in standard and special designs, re-grindable milling tools, carbide indexable inserts, HSS and carbide knives, toolholders, tool clamping devices and thread whirling systems.

In addition to the standard program, Ingersoll, with its three German sites in Haiger, Vaihingen-Horrheim and Wulften, develops milling cutters, drills, turning and grooving tools according to customer requirements. The company's products are used worldwide. Ingersoll, a member of the Iscar International Metalworking Companies (IMC) since 2000, is present across industries such as aerospace, railway manufacturing, gearing technology, shipbuilding and mould and die. The automotive industry in particular often has demands for special tools, such as those for machining engine blocks, crankshafts, or steering knuckles.

The Ingersoll workflow from design to machine presents itself as a state-of-the-art process chain. The tool is completely designed with Creo in 3D. The 3D models stored in the PDM (Product Data Management) system and are then used by the NC programmers to develop the NC program, which is also done in Creo.

Susanne Klamma, who has been responsible for the administration and development of the CAD and CAM systems at Ingersoll since 1989, states: "When programming the NC paths, the programmers select the required production tools from a central, proprietary SQL-based tool database. Then a software that was also developed in-house is called up, which fully assembles the production tools."





The NC program with all the required tools is then checked in VERICUT for possible collisions. "VERICUT is an essential part of our process chain," says Susanne Klamma, who is also responsible for the development of post-processors and the DNC connection to production machines.

Finally, a program is called up that creates the setting sheet with all the information for the machine operator. Logistical information about the tool can also be called up from the PPS (Production Planning and Control) system.

Digitality in detail

Ingersoll reduces the complexity of its development, project planning and production by utilising digital end-to-end processes.

This corresponds to both tight timeframes and the high-quality standards of the company. Proven standards and automations replace repetitive work, even with small batch sizes. The consistency, continuity and quality of the data is secured several times over.

Susanne Klamma explains: "In the first step, the NC programmer creates his NC program in Creo/NC only with the actual tool, such as the milling cutter or drill that suits his machining. The NC programmer receives support from our in-house developed tool database when he's choosing the tool.

"He then calls up the ITM Builder software. This assembles the optimal combination of tools and holders for the selected production machine according to specific rules. Here, of course, the NC programmer also has the option of influencing the assembly process," Susanne Klamma explains. "NC programmers don't have to stick with this approach." The rules for assembling complete tools can be adapted to the needs and specifications of production and can be changed without modifying the NC program itself.

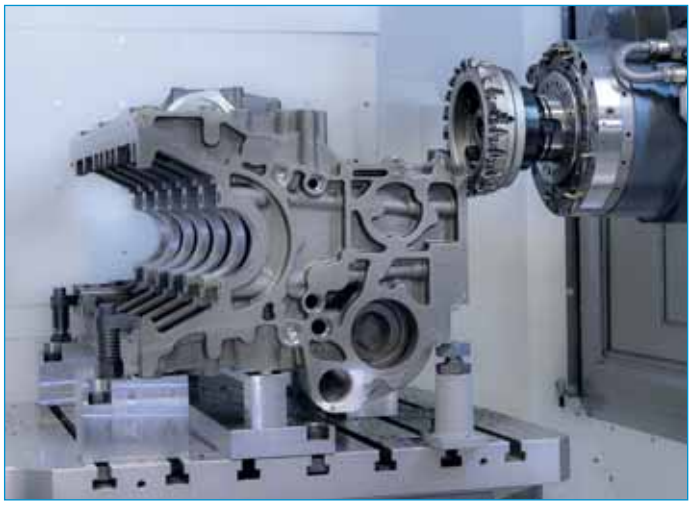
Finally, the programmers bring up VERICUT with all the necessary information from the ITM Builder interface. Susanne Klamma states: "The machine and control is loaded with the NC program, the raw part and the workpiece holder and exact representations of the assembled tools."

Integration in the process chain

Ingersoll has a long tradition of dealing intensively with VERICUT. In Haiger and at almost 20 other IMC locations around the world, VERICUT, the industry standard for NC simulation, has been in use for decades.

Susanne Klamma explains: "At the Haiger site, we mainly manufacture special tools in very small batch sizes. Due to short delivery times, we cannot afford to produce rejects or spend a lot of time trying things out on the machine. Everything on the machine has to run collision-free immediately."

Operators standing at the machine and checking whether production is running collision-free or swiveling the A-axis in advance as a test are a no-go at Ingersoll. The actual backup is VERICUT.



Susanne Klamma says: "When simulating the programs, it is particularly important to us that the NC program is simulated after the post-processor runs and in the exact form that will be transferred to the machine. Every common NC programming system simulates the program, but always before the code is post-processed. This is why using VERICUT as our own simulation software is so important to us."

Integrates ahead with ICAM and VERICUT

The use of the combination of post-processor generation in ICAM and NC simulation with VERICUT is quite interesting. The networked process has proven particularly effective when using new CNC machines.

Susanne Klamma reports: "ICAM offers the option of creating a generic post-processor using a questionnaire. This is a great advantage when you're starting with a new machine, since you don't have to start from scratch. Because the output of the post-processor is very easy to adapt, you can also easily integrate the required control commands for VERICUT, for example."

Productive manufacturing with Auto-Diff

The goal when introducing VERICUT at Ingersoll in 1996 was to establish a reliable machining process and the simulation of tool movements, with the main focus being on the collision check of the 5-axis machining centres in addition to the machine simulation of complex machining programs. Almost all manufacturing programs at Ingersoll now run through VERICUT's simulation with verification and analysis.

CGTech Tel: 01273 77353
Email: info.uk@cgtech.com www.cgtech.co.uk

A plus in precision and efficiency

The "STM TAC/12" angular error compensation cutting head ensures more precision, speed and efficient use of resources in waterjet cutting.

In principle, waterjet cutting has always provided a nice, fine and clean cut. If there wasn't one important point that sometimes clouds the good and strong result a little, the so-called angle error.

An angular error occurs when the waterjet loses power during cutting, thus ensuring more material is removed on the top side than on the bottom side. This creates a conical cutting gap.

The STM cutting head with integrated Taper Angle Control (TAC) and a swivel range of up to 12° compensates for the angular error. This enables precise production even with high feed rates.

The solution from STM automatically puts an end to angular error.

The STM "STM TAC/12" cutting head represents a significant competitive advantage in waterjet cutting today. This is because it prevents the usual deviation between the upper and lower edges of the cutting material, the angular error mentioned at the beginning. The result is a V-shaped taper at the cut edge. Especially with thin material, such as 2 mm stainless steel, the angular error used to have an even greater effect. To prevent this, the cutting speed was previously reduced, but this resulted in longer production times and thus higher costs. The solution is the STM cutting head with integrated "Taper Angle Control". De facto, the "STM TAC/12" automatically compensates the angular error to less than +/- 0.01 mm. It does so even at up to 4 times the cutting speed. Cutting with up to 12° bevel is also very important in practical use beyond that. Keyword bevel cutting, for example, for plastic parts in case construction.

The compact cutting head can be easily retrofitted to existing STM waterjet cutting systems. Previously for the PremiumCut series and now also for the STM MasterCut V2 system. To guarantee reliable operation, the cutting head has integrated height sensing and collision protection. The encapsulated mechanics, which do not require sealing air and the motors ensure wear resistance and easy maintenance. STM thus once again fulfils its mission of providing solutions for high-quality, economical and convenient cutting of all types of materials.

Passion, know-how and an insatiable drive for innovation have made STM a leading international supplier of waterjet cutting systems. For almost 50 years, the company has been enthusiastically developing future-oriented production solutions at its headquarters in Eben im Pongau, Austria, primarily for the steel, aluminum, metal, plastics, composite materials, stone and glass industries. The name STM stands for high-quality systems developed as a modular system, for individual, highly efficient solutions, for an unusually high level of customer orientation and for its passion for constantly improving the technology of waterjet cutting.

STM Waterjet GmbH
Tel: 0043 645 820 0140
Email: info@stm-waterjet.com
www.stm-waterjet.com

Flow
SHAPE TECHNOLOGIES GROUP®

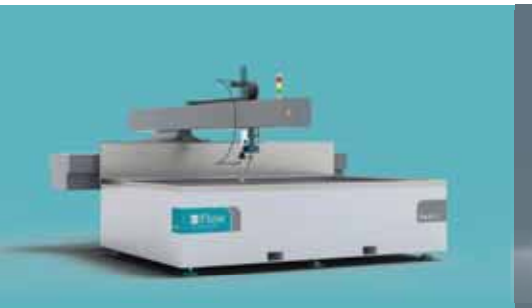
World Leader in Waterjet

Flow Mach Series

Customer driven design featuring Flow technology at every price point.

As a complete system manufacturer, every part of your Flow waterjet is designed to work together to make your cutting operations better. Your needs drive our future-proof system design.

Flow waterjets come with various options, accessories, and technologies.



Mach 100
performance made affordable.

The **Mach 100** not only outperforms the standard waterjet offerings in the industry, but wins in value as well.

Sizes from: 1.3 m x 1.3 m to 4 m x 2 m

Mach 200
elevate expectations.

The **Mach 200** is a practical and flexible waterjet solution, offering bevel cutting capabilities and immense value.

Sizes from: 1.3 m x 1.3 m to 7.3 m x 2 m

Mach 500
make more.

The **Mach 500** is the workhorse of waterjet, elevating your performance and production levels.

Sizes from: 2 m x 2 m to 4 m x 8 m

Industry leading pump technology

Flow provides state of the art Ultra-high pressure waterjet pumps:

- **Direct Drive pumps**

HYPLEX PRIME
ENERGY SAVINGS FLOW TECHNOLOGY

HyPlex Prime ®
DIRECT DRIVE
3.800 bar [55.000 PSI]

- **Intensifier pumps**

MotoJet ®
INTENSIFIER PUMP
4.150 bar [60.000 PSI]

HyperJet ®
INTENSIFIER PUMP
6.500 bar [94.000 PSI]

Both intensifier and direct drive pumps are capable of reliably delivering ultrahigh-pressure water, and both are successfully used in industry.

Contact : FLOW UK
Unit 3 Canton House
Wheatfield Way, Hinckley, LE10 1YG UK
Office: +44 1455 895 300
info-uk@flowwaterjet.com
www.flowwaterjet.com

Cutting edge precision

Discover the versatility of WARDJet waterjet cutting systems

WARDJet is a leading manufacturer of waterjet cutting systems that are used across a wide range of industries for the precision cutting of materials. The company has a range of models that are designed for different applications and each model offers its own unique set of technical specifications and capabilities.

One of the key advantages of WARDJet waterjet cutting systems is their precision cutting ability. The high-pressure waterjet can cut through a wide range of materials, including metals, composites and plastics, with incredible accuracy without generating heat, which makes them ideal for materials that are sensitive to temperature changes. The systems are also known for their high cutting speeds, which makes them ideal for production environments. Another important feature of WARDJet waterjet cutting systems is their modular design, which allows users to customise their machines to meet their specific needs. This includes the ability to choose from a variety of cutting heads, pumps and other components to create a system that is tailored to their exact requirements.

WARDJet waterjet cutting systems are used in a wide range of industries, including aerospace, automotive and medical device manufacturing. They are ideal for cutting materials that are difficult to machine using traditional methods, such as heat-sensitive materials or materials with complex geometries.

They are also ideal for cutting materials that require a high degree of precision, such as parts for medical devices or aerospace components. Some examples of the various application uses are:

Aerospace

WARDJet waterjet cutting systems are used in the aerospace industry to cut complex shapes and contours in materials such as titanium, aluminium and composites. They are also used to cut parts for aircraft engines and landing gear.

Automotive

WARDJet cutting systems are used in the automotive industry to cut parts such as dashboards, seats and door panels. They are also used to cut complex shapes in materials such as carbon fibre.

Medical device manufacturing

WARDJet systems are used in the medical device manufacturing industry to cut parts for devices such as surgical instruments and implantable devices. They are also used to cut materials such as ceramics and bioabsorbable materials.

Architecture and design

WARDJet waterjet cutting systems are used in the architecture and design industry to cut materials such as stone, glass and metal. They are also used to cut complex shapes in materials such as wood and plastics.

Electronics

WARDJet waterjet cutting systems are used

in the production of electronic components, such as circuit boards and semiconductor chips.

In summary, WARDJet waterjet cutting systems are known for their precision cutting ability, high cutting speeds and versatility. With a range of models available to meet different needs, these systems are used across a wide range of industries for a variety of applications.

For more information, contact WARDJet by completing the online contact form at **www.wardjet.com/get-a-quote/** or call 01952 291600.

In April 2018, AXYZ announced that it had acquired WARDJet, an industry-leading waterjet manufacturer based out of Tallmadge, Ohio, USA. Founded in 1995, WARDJet has over 20 years of CNC experience and a product that perfectly complements that of AXYZ.

While AXYZ CNC routers are extremely capable machines that excel in many different industries, waterjet cutting systems have unique properties that make them very adept when it comes to industrial manufacturing. Since waterjets utilise a cold-cutting process, there are no Heat-Affected Zones (HAZs) which means that the physical properties of the workpiece remain unaltered during cutting. One of the most versatile cutting machines on the market, waterjets are able to cut through almost any material imaginable with no change of tooling required. Other benefits include the absence of harmful airborne debris when cutting, smoke, dust etc., a clean edge that requires little to no post-processing and the ability to cut extremely thick materials.

AXYZ Automation UK Ltd
Tel: 01952 291600
Email: enquiries@axyz.com
www.axyz.com

Like a brand new machine after 21 years

"Quality never goes out of style," they say. Well, for Water Jet Sweden cutting machines, quality never goes out of performance either. A recent refurbishment of a 21-year-old waterjet cutting machine to almost new condition by its in-house team demonstrated this perfectly, making it ready for many more years of quality cutting.

Ronny Martinsson, Water Jet Sweden customer services manager inspecting the machine, packed and ready for delivery

The machine looks brand new, after 21 years of operation

In 2001, Water Jet Sweden sold the machine to a Norwegian waterjet contract cutter. After 21 years of cutting, they decided to upgrade their workshop by investing in a new machine. Like many other well-maintained machines from Water Jet Sweden, the performance was still good and a general "facelift" could be worth the investment. The customer service team at Water Jet Sweden seized the opportunity and bought the old machine.

"We have supported the customer since the machine was delivered in 2001 and have good knowledge of both operating hours and service history," says Ronny Martinsson, customer service manager at Water Jet Sweden.

Looking at the refurbished machine, it is difficult to imagine that it has been in production for 21 years. Although it looked a little more run-down than when purchased, after a thorough cleaning, the potential was clearly visible. Every renovation project is different, this time the frame was repainted, new table grids were installed, hoses were replaced and, most importantly, the electrical system was replaced with a new Fanuc CNC system. The system change included everything from cables, motors and electrical cabinets to a modern PanelOne® Operator Panel.

"Of course, there is a difference between a completely new and a refurbished machine,

The machine is completely renovated, on all sides and equipped with new cables and a new operator panel

but Water Jet Sweden's machines often still have many years of production capacity left, even after 20 years in operation," says Ronny Martinsson. ''Since 1993, none of our machines have been taken out of production due to substandard performance."

The refurbished machine is now ready for delivery to a new customer in Germany, a forging company that will use the machine as a workstation in their workshop. The refurbished machine cost about 60 percent of what an equivalent new machine would cost.

"We provide lifetime support to all our machines, so maybe in 21 more years it will be time for a second facelift. Quality machines are good for your long-term business as well as for the environment." Ronny Martinsson concludes.

WJS UK Ltd
Tel: 01937 845499
Email: info@wjsuk.com
www.waterjetsweden.co.uk

Cleaning up in hazardous areas with new KEVA Premium vacuums

Clean air specialist Filtermist has introduced an exciting new range of Kerstar KEVA Premium industrial vacuum cleaners that include patented filter cleaning technology for the safe and efficient collection of hazardous dust, debris and workplace particles that pose a health and safety risk to employees. Regarded as the perfect all-rounder for your manufacturing facility, the new modular KEVA Premium series is ATEX certified, making it ideal for applications as diverse as powder coating, pharmaceutical, food processing, additive manufacturing, woodworking and much more.

What sets the impressive KEVA Premium Type H cleaner apart from its rivals is the ability to safely and effectively collect hazardous dust particles using a 3-stage filtration system that resides on the negative side of the powerful 230V 50Hz, 1,150w Max / 1,000 w Mean, electronically commutated brushless motor. From a health and safety perspective, the KEVA Premium vacuums are classed as Category 3 equipment. This makes them suitable for applications in Dust Zone 22, an atmosphere where air and flammable dust can be explosive. With three stages of filtration that includes two conical M class filters at the first stage, an oversized, metal cased H14 Grade HEPA absolute filter at the second stage and a conductive fabric filter assembly at the third stage, the new vacuum series can achieve a filtration efficiency of 99.995 percent. Safety is further assured by the robust stainless-steel construction and conductive rollers that eliminate any hazard potential in safety-critical areas, with additional 2 m earthing clamp for added protection.

With two models in the new Premium range, the KEVA Premium CBS (Continuous Bagging System) and the Keva Premium 50L, 50 litre drop down collection container, a key advantage is the new conical filtration system. The M and H14 Dust Class filter units incorporate a new mechanical cleaning system that simply requires a pull on an external lever to undertake fast and efficient filter cleaning. The patented mechanical control enables a reliable, reverse pulsation cleaning action on the first stage filtration system, helping the filters retain maximum efficiency. Contrary to a common 'shaker' mechanism for filters, this unique cleaning method prevents undesired wear issues caused by shaking. Cleaning the filter in seconds, the patented system on the new KEVA Premium series eliminates the need for dismantling the vacuum and manually cleaning the filters. This not only saves valuable time but, in instances where hazardous dust is collected, it helps to protect the health and well-being of staff. Furthermore, the ability to frequently, quickly and safely clean the filter prolongs the life of the HEPA filter by up to 50 percent, reducing operational costs with fewer changeovers. This ease of filter cleaning also ensures that the maximum suction volume of 210 m^3/h is maintained for extended periods.

The KEVA Premium CBS has been developed with an ingenious bagging system at the base of the unit. This enables users in pharmaceutical and other particularly hazardous environments to safely collect, bag and remove contaminants without ever risking contact with the particulate. Perfect for environments that demand the highest levels of hygiene, safety and staff protection from potentially carcinogenic or harmful waste, the KEVA Premium CBS minimises exposure to any contaminant while the quick-change bag system maximises vacuum running hours. Alongside the KEVA Premium CBS is the 50L unit. With a fully enclosed stainless steel collection drum, the KEVA Premium 50L is the perfect unit for a wide variety of industry applications.

Both KEVA Premium vacuums incorporate the renowned Kerstar 230V 50Hz, 1,150w Max / 1,000w Mean, electronically commutated brushless motor. They also include a stainless-steel roller carriage, 2 m earthing clamp, cyclone separator, a 10 m connection cable, a flashing LED blockage warning indicator and vacuum pressure gauge that notifies the operator of any potential filter blockages. For customers working in particularly challenging environments, Filtermist can provide a host of optional equipment such as anti-static suction hoses, floor nozzle box, anti-static accessories, carbon fibre high reach pole sets and more.

For further details, visit ***www.kerstar.com***

Filtermist Ltd
Tel: 01952 290500
Email: sales@filtermist.com
www.filtermist.co.uk

New downflow booth from Airbench Ltd

AirBench announces the release of its new VertEx DFB downflow booth models

DFB is designed for use in high-end manufacturing environments, including food and pharmaceutical manufacturing but can also be applied in wider industry settings. Manufactured as standard in polished T304 stainless steel, the DFB is also available in T316 stainless, or as a powder coated mild steel unit.

Developed in response to a customer request for a UK manufactured downflow booth direct from the manufacturer, DFB is now available to order.

Downflow booths function by providing a flow of clean, filtered air downwards from the roof of the enclosure and over the operator. This ensures the operator remains in a clean air zone at all times. Air is drawn in at the base of the unit, through primary and secondary filters, before being recirculated back through the final stage H13 HEPAs to the operator. A percentage of air is exhausted back to the workspace, ensuring the booth remains in negative pressure at all times.

AirBench offers a full installation and commissioning service for the DFB range. Visit airbench.com/dfb for more information, or contact AirBench Ltd on 01206 791191 or sales@airbench.com.

AirBench is one of the UK's leading manufacturers of dust, fume, and mist extraction equipment.

All of its own dust and fume extraction systems and filtration products are built to order in its factory located in the East of England. All products are assembled from stock components allowing it to maintain short lead times. It also imports the AOF range of oil mist filters from its trusted partners in the Netherlands.

AirBench specialises in high air volume, low velocity extraction systems, providing a demonstrable working extraction solution to a wide range of dust and fume problems.

It demonstrates its extraction systems on site prior to purchase where possible, to ensure both buyers and operators are confident that the products are the correct solution and are usable in day-to-day operation for their businesses.

It provides dust and fume extraction solutions to specific workplace problems using standard modular components and filtersets allowing rapid delivery.

Airbench has supplied over 10,000 AirBench downdraught benches into the UK and to worldwide customers.

In 2014, it purchased the OMF range from Air Cleaning Systems of Cardiff following their entrance into liquidation, in order to broaden its coolant mist filtration product range and provide ongoing support to Oil Mist Filters (OMF) customers.

The company also distributes the AOF range of mist filtration units, which are manufactured for its Netherlands-based partners Dormatec.

Its extraction systems are generally self-contained. AirBench downdraught benches usually require no installation. The VertEx range of cross draught booths can be installed quickly in-house, while OMF products can usually be fitted in less than one day by the trained teams.

AirBench Ltd
Tel: 01206 791191
Email: sales@airbench.com
www.airbench.com

Fine-tuning production

High-speed saw helps a guitar accessories manufacturer cut through a production backlog

A capotasto, better known as a capo, is a small device designed to quickly change the pitch of a stringed instrument. Used by virtually every musician, from famous touring professionals to campfire players, a capo is an essential tool for every kit. Kyser Musical Products, founded in 1980 by Milton Kyser, has made a name for itself as the worldwide leader in capo manufacturing. Kyser has distributed its product throughout the world of music and into the hands of many well-known musicians.From George Strait and Katy Perry to John Mayer and Bon Jovi, Kyser capos are a staple for guitarists, bassists, banjoists and other musicians.

Handmade in the United States, every capo starts as two cross-sectional aluminum extrusions, each with a different profile. The extrusions are sliced into narrow pieces, which are joined together to make the final clamp-like product.

When David McClung, director of safety and maintenance at Kyser Musical Products, realised production was not keeping up with demand, it became apparent that the sawing equipment just wasn't cutting it. The company's existing machine was delivering less than 50 percent of required volumes; the saw simply was not fast enough, accurate enough or consistent enough to get the job done.

He needed a solution, but this wasn't as simple as choosing a new supplier and moving on with production. It was an important capital equipment acquisition. He needed to make an investment in a piece of machinery that would be efficient, dependable and hold tight tolerances, but a good investment requires research.

Informed decision

When the product you are buying is a critical investment, the value of an informed decision cannot be underestimated. David McClung spent a year on research alone, sending out parts, talking to numerous people and comparing equipment in his search for a machine that could stand up to his demands. He struggled to find a saw that could check off all his boxes.

"The findings were always the same, either they could not cut our smallest parts or they could not get the finish we were looking for," he explains. The saw also needed to minimise downtime and waste, while improving the overall quality and consistency of the product.

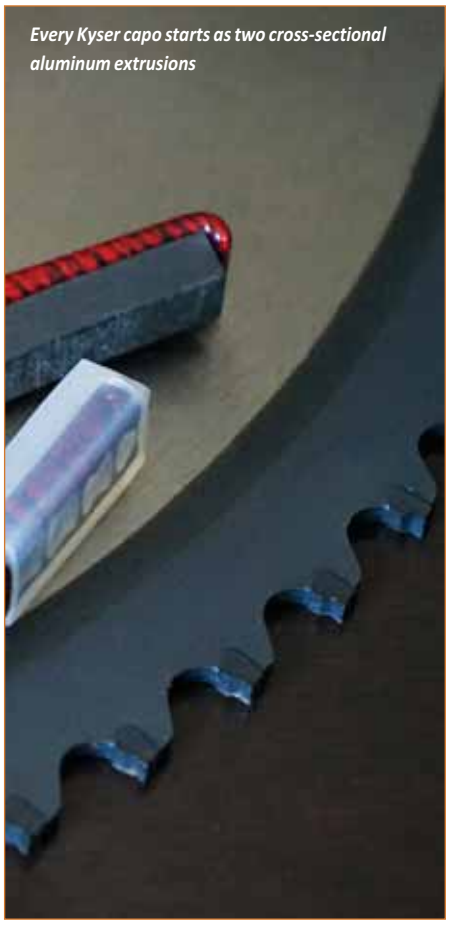
During the hunt, he came across Behringer Saws and made a call. Within a week, a sales representative had gone out to visit Kyser. The rep familiarised himself with Kyser's process, took samples of the materials and headed back to Behringer to begin testing. With this information and having run tests on every one of Kyser's materials, Behringer was able to recommend the VA-L 560NC, a circular cold saw specifically geared towards aluminum and tailored to Kyser's specific production needs. "We can control blade speed, feed rate, oil spray and pressure on the grippers, which allows for the best possible finish," David McClung points out.

A few months later, David McClung and his team were headed to Behringer with more samples to see the machine in action. Behringer demonstrated the saw's capabilities, showing off the versatility and ease of controlling the equipment and proving that the saw was up to the challenge. Behringer's control system made it possible to get precision and speed. The systems are freely programmable and allow for several different piece number and length combinations during a single run, which suited Kyser's need for flexibility.

High speeds

Capable of running between 800 and 3,400 rpm, the VA-L 560 was able to increase production by up to 75 percent, according to David McClung's team. Waylon Alexander, director of operations says: "The speed and output without sacrificing quality is what has made the biggest difference. Less downtime has put us in a position to run the saw fewer hours in the work week."

A good investment in equipment is more



Every Kyser capo starts as two cross-sectional aluminum extrusions

than the value of the machine itself. A testament to the retained value of a Behringer saw is seen in the continuation of technical support nationwide, for the lifetime of the machine. Customers can rely on experienced technicians who will service the line. Behringer sent a technician out for a week to assist Kyser with setting up the equipment and training employees on proper operation. That happens with every saw sold. As it celebrates a 40th year in business, Kyser Musical Products is poised to support continued growth and to satisfy the needs of musicians. David McClung concludes: "The company that we had purchased a saw from previously could not or did not know how to fix any problems that had developed. Behringer's customer service is, by far, above all others."

Behringer is a manufacturer of high-performance bandsawing machines, circular cold saws, and structural fabricating equipment. The company prides itself on building the highest quality metal sawing and fabricating equipment in the world. Its primary goal is to create value for customers by continuously striving for the highest levels of speed, accuracy and cost-effectiveness. All equipment design is based on achieving these objectives on a dependable and long-lasting machine.

The VA-L 560NC is a circular cold saw specifi cally geared toward aluminum and is suited for Kyser's specific production needs

Additionally, Behringer offers the widest selection of models, allowing it to not oversell or undersell a customer's needs. Through detailed discussion with end-users, the company is positioned to offer a system that delivers the appropriate size ranges, options and material handling requirements for each unique application.

Behringer Ltd
Tel: 01296 668259
Email: info@behringerltd.co.uk
www.behringerltd.co.uk

Advantages of Cosen automatic dual column band saws

Cosen automatic dual column band saws provide many advantages that increase efficiency

Cosen Saws, a leading manufacturer of industrial sawing equipment, offers a variety of automatic dual columns band saws with round capacities ranging from 12" to 40". Cosen Saws automatic dual column band saws are designed to meet the demands of modern manufacturing, service centres and the fabrication industries.

Cosen Saws line includes the G320, C-320NC, C-420NC, C-520NC, C-620NC and other larger models. Having an automatic band saw means that production can be increased significantly. Automatic band saws can work continuously, cutting multiple pieces of material at a time, which can greatly increase the production rate. An automatic band saw can also be programmed to make precise cuts, which can help to reduce errors and wasted material. This can help to increase the overall efficiency of the production process.

Having a Cosen dual column saw over a pivot saw can offer several advantages, including:

Longevity of machine

Dual column saws are generally more rugged than pivot saws, which can help to increase the longevity of the machine. The added rigidity and stability of the dual columns can also help to reduce wear and tear on the saw's moving parts, further increasing its lifespan.

Straightness of cut

The added rigidity and stability of a dual column saw can also help to improve the straightness of the cut. This is because the saw blade is less likely to bend or deflect during the cutting process, resulting in a more accurate and precise cut.

Capacity and cut speeds

Dual column saws typically are designed to cut larger cutting cross sections of material than pivot saws. You typically will not find a pivot style saw cutting larger than a 16" round material. The reason for this is that pivot saws lack the rigidity, unlike dual column saws that have two columns for stability. This allows dual column saws to effectively cut larger or thicker materials, resulting in improved cut speeds and blade life.

V_Drive technology

Cosen Saws proprietary V_Drive technology comes built into the automatic dual column band saws. V_Drive allows for significantly reduced cut times even for harder materials, longer blade life, reduced tooling costs per piece cut and tighter tolerances.

Overall, a dual column saw can offer several advantages over a pivot saw, including increased rigidity, longevity and straightness of cut, larger cutting capacity and higher accuracy. All Cosen automatic dual column band saws are backed by a 1-year labour and 2-year parts warranty.

Support for machine parts

Since Cosen Saws beginning in 1976, the company has grown and evolved to meet customer's needs. The commitment to the needs of customers has never changed. In an effort to be proactive, the Cosen Saws parts department is constantly reviewing the parts inventory and processes to ensure that the best customer experience can be offered as well as maintaining a sufficient inventory of parts for repair. No matter how large or small the parts order is, Cosen promises to give the attention and service each and every customer deserves.

Cosen Saws parts department spans over 3,500 sq feet. This includes a comprehensive

inventory of replacement band saw parts that are always ready to ship as soon as you need them. With the importance of uptime and proper maintenance of band saw machines, Cosen does its best to keep inventory up to date for all machines including common and uncommon parts in order to make sure the parts you need for your machine are always available. This ensures the best customer experience and makes sure saws are always up and running.

Cosen Saws parts department is always available to assist customers during working hours. They can help to figure out which parts you may need, place orders for those parts and check on any current orders. Also, if you are unsure of which parts you need, the Cosen team will work to help identify the correct match. From there, that part can be reordered or quoted and put on record in case it is ever needed again.

Cosen Saws
Tel: 001 704 943 1030
Email: info@cosensaws.com
www.cosensaws.com

New Prosaw state-of-the art saw-line facility cuts overheads as well as piling pipes

Located in Montrose, the John Lawrie Group has been supplying high-quality pipe and casing to the UK and European piling and micropiling markets for several decades, making it one of the industry's largest suppliers.

Piling projects extend from house foundations to marine developments as well as many other civil engineering projects and the group supplies almost all of the major contractors in the industry, providing casing ranging from 48 mm, 2 3/8", diameter to 1,200 mm, 48". Casings used for these purposes are mostly ex-oilfield tubes that are perfect for recycling in this way.

Recently, the company invested in a state of the art saw-line facility from Prosaw. It is capable of cutting casings to size, of up to 14 inches in diameter and 12 metres in length. The new facility includes two new saws and a completely automated production line.

Iain Laing, director of John Lawrie Tubulars, who has been closely involved with the design process of the new saw line, says: "The John Lawrie Group are unique in the way they operate and we wanted a system which reflected that. I gave a list of requirements for the new facility to the manufacturers and we worked together over a period of months to produce a bespoke system which satisfies all of our exact needs."

The new facility replaces a three line/three saws system that required manual handling by three operators, whereas the new Prosaw two saws system requires no manual handling at all, which is important from the Health and Saftey perspective. It is also able to function efficiently with both saws being controlled by a single operator.

Ian Laing concludes: "We chose to work with Prosaw on this project even though they were not the least expensive bidder, because we were impressed by both their positivity and their innovative ideas on how to improve on our previous system in terms of efficiency, safety and quality. John Lawrie Tubulars are one of the leading suppliers to the piling industry. We are proud to be investing in new equipment and systems which fully comply with our tight health and safety requirements and also provide a more efficient service to our customers."

Prosaw
Tel: 01536 410999
Email: sales@prosaw.co.uk
www.prosaw.co.uk

Large workpieces sawn with precision

Structural steel and tool steel stockholder and processor, JKZ Bučovice uses KASTObbs automated block bandsaws KASTO to cut large, heavy billets and plates of various geometries, grades and dimensions. The components are delivered to domestic customers in the Czech Republic and others in Slovakia, Poland, Austria, Germany, Slovenia, Hungary, Romania and the Baltic States.

Founded in the year 2000, employing 125 staff and with an annual turnover of 20 million Euros, the company holds approximately 10,000 tonnes of steel in its 15,000 square metre warehouse. The oldest KASTO vertical block bandsaws have been in use for nearly 20 years and are still operating reliably today. More recently, a pair of KASTObbs A 3x20 bandsaws were installed for cutting material up to 420 mm high by seven metres long and weighing up to 56 tonnes.

In addition to 35 automated bandsaws, processing equipment includes flame cutting, plasma cutting, grinding and deep-hole drilling as well as twenty 3- and 5-axis machining centres. Workpiece dimensions are up to 2.5 x 4.5 m to suit customer requirements.

Marek Hermann, sales and production director at JKZ explains: "We already had extremely positive experience with the two older KASTO block bandsaws we acquired in 2006 and 2007, which still perform well today.

"As we only have a few competitors that are equipped for processing such large parts, we decided to expand our capacity further to meet the high demand more efficiently.

"The new KASTObbs saws are very robust and reliable and provide the high degree of quality and precision that our customers demand, especially those in the toolmaking sector."

Characteristic of this bandsaw series is the longitudinal cutting method using a vertically oriented blade. The saw head moves on rails having side mounted, hardened and ground rollers, while the workpiece remains static on the saw table. The configuration results in a small footprint, while the torsion-resistant, welded construction provides smooth running and vibration-free operation, leading to shorter cutting times and longer blade life.

JKZ employees are able to adjust the cutting infeed to optimise productivity, consistent with the required workpiece quality and the cross section of the material being processed. Band speed is also infinitely variable from the integrated control panel.

Steel stockholder JKZ Bučovice uses KASTObbs block bandsaws to cut large, heavy workpieces

The KASTObbs is designed to process billets or plates of various geometries, grades and dimensions

A total of 35 automated bandsaws of all sizes are used in the Bučovice facility, including a KASTOmaxcut A 20

Marek Hermann continues: "Due to the zero to 90 degree rotation of the KASTObbs A saw band, we can cut workpieces both lengthwise and crosswise, enabling unmanned operation from the raw block to the finished cut workpiece."

In 2015, the stockholder bought a compact, automated KASTO UNITOP 5.0 storage system to handle bar stock weighing up to 5,000 tonnes. The 3D storage facility operates seamlessly with the saws, with which it is interfaced, and it is also linked to the stockholder's ERP system, enabling efficient material flow.

Marek Hermann concludes: "The store not only allows us to optimise our material flow from goods-in to shipping, shortening delivery times, but also reduces error rate and has freed up space for additional processing machines.

"We are very satisfied with the collaboration with KASTO, from the joint planning exercises through commissioning to maintenance. The service from KASTO is prompt and the supplier is always there to answer any queries we may have.

"We are delighted to have such a reliable partner that is familiar with the challenges of the steel trade and supports us in mastering them by providing innovative, functional, future-proof solutions."

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

DON'T LET YOUR INVESTMENT GO UP IN FLAMES!

kraft bauer uk

AUTOMATIC FIRE SUPPRESSANT SYSTEMS FOR EVERY MACHINE

Any machine using oil or presenting a fire risk must be protected by law
See our website to check your legal responsibilities

www.kraftandbauer.co.uk
Unit 80 Hotchkiss Way, Binley Industrial Estate, Coventry. CV3 2RL (t) 02476 22 9477

CERATIZIT GROUP

The “more is always possible” clamping solution.

No matter if it´s little or large:
The PolyClamp – Verso gets a firm grip of everything.

Find out more at:
cuttingtools.ceratizit.com/gb/en/polyclamp-verso

TEAM CUTTING TOOLS

CUTTING SOLUTIONS BY CERATIZIT · KOMET · WNT · KLENK

CERATIZIT is a high-technology engineering group specialised in cutting tools and hard material solutions.

Tooling a Sustainable Future

www.ceratizit.com