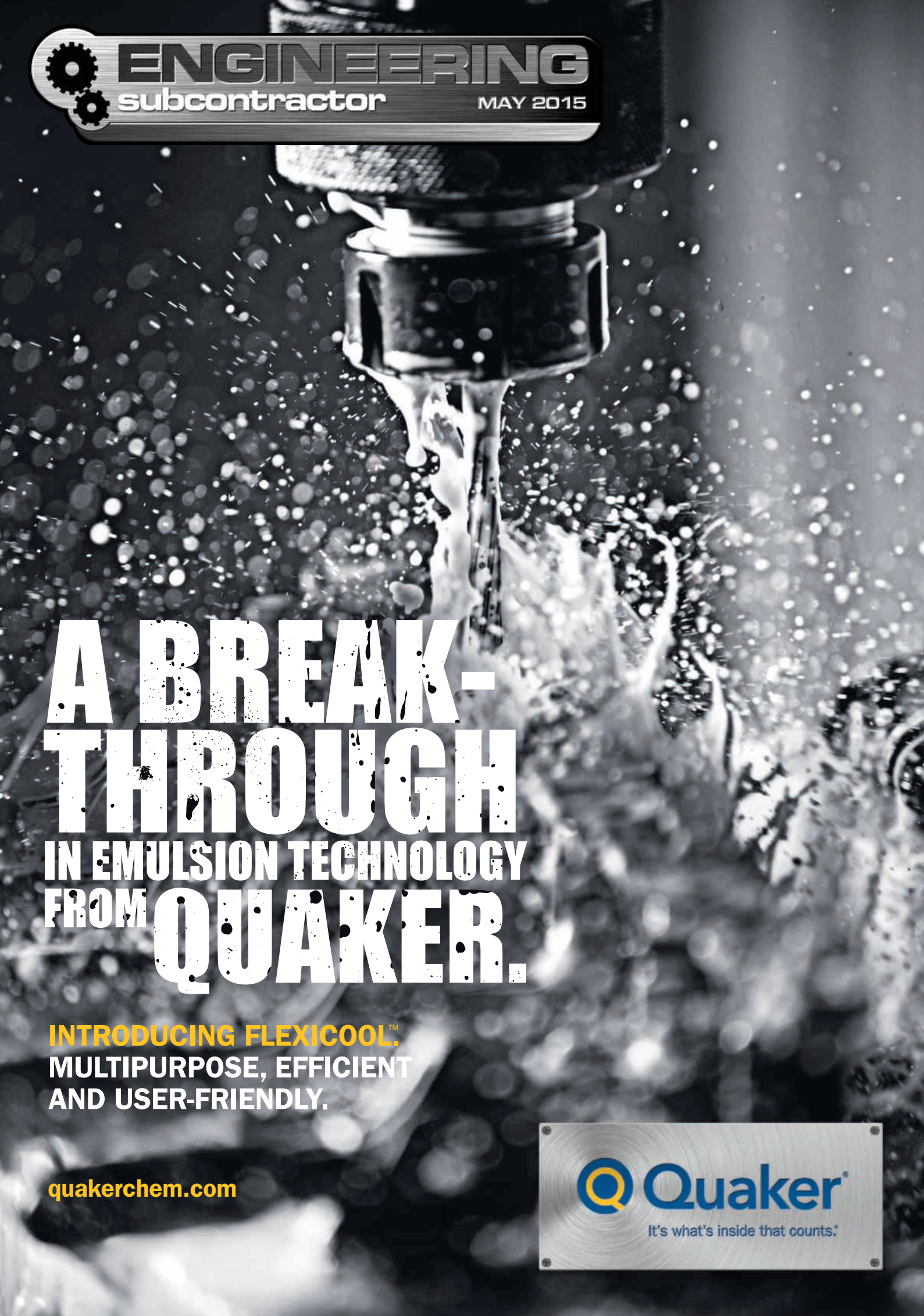
ENGINEERING subcontractor
MAY 2015



A BREAK-THROUGH IN EMULSION TECHNOLOGY FROM QUAKER.

INTRODUCING FLEXICOOL™.
MULTIPURPOSE, EFFICIENT AND USER-FRIENDLY.

quakerchem.com

Quaker
It's what's inside that counts.®

Proven to double your profits

Call today to save your place...

- *Proven to double your profits*
- *No need for extra operators*
- *Footprint of only 760 x 1220 mm*
- *Achieve 'cell set ups' quickly and easily*
- *Frees up larger CNCs*
- *Comes with a pallet truck*
- *Easy to use ProtoTRAK® control*
- *Comes with warranty, FREE training and full UK support.*

Pick a date and then register online at www.xyzmachinet

XYZ ProtoTRAK Turret Mills, Bed Mills and Lathes

XYZ ProtoTRAK® EMX Turret Mills
3 Models available

XYZ ProtoTRAK® SMX Turret Mills
4 Models available

XYZ ProtoTRAK® SMX Bed Mills
4 Models available

XYZ ProTURN® Lathes
6 Models available

XYZ Vertical Machining Centres & Turning Centres

XYZ Prototrak LPM system

XYZ Mini Mill 560

XYZ Vertical Machining Centres
3 Models available

XYZ High Speed VMC

XYZ Machine Tools

Tel: 01823 674200 Fax: 01823 674201

MACHINE TOOL DEMOS ARE AVAILABLE AT ANY OF OUR UK SHOWROOMS

across the entire shopfloor

Come and see the XYZ 2-OP at any one of 5 UK tour dates, save your place today.

1	2	3	4	5
LIVINGSTON	**BLACKBURN**	**NUNEATON**	**LONDON**	**DEVON**
TUES 16 JUNE	**WED 17 JUNE**	**THURS 18 JUNE**	**TUES 23 JUNE**	**THURS 25 JUNE**
Demo 1 11.00 am - 12.00 noon followed by lunch.	**Demo 3** 11.00 am - 12.00 noon followed by lunch.	**Demo 5** 11.00 am - 12.00 noon followed by lunch.	**Demo 7** 11.00 am - 12.00 noon followed by lunch.	**Demo 9** 11.00 am - 12.00 noon followed by lunch.
Demo 2 Lunch at 12.30 pm followed by demo 1.00 pm - 2.00 pm	**Demo 4** Lunch at 12.30 pm followed by demo 1.00 pm - 2.00 pm	**Demo 6** Lunch at 12.30 pm followed by demo 1.00 pm - 2.00 pm	**Demo 8** Lunch at 12.30 pm followed by demo 1.00 pm - 2.00 pm	**Demo 10** Lunch at 12.30 pm followed by demo 1.00 pm - 2.00 pm

Please note places are limited so register early at www.xyzmachinetools.com to avoid disappointment.

Watch the XYZ 2-OP video - 3 mins 47 secs

Watch it at www.xyzmachinetools.com

ools.com or call 01823 674200 and ask for Julia.

XYZ Heavyweight VMCs **XYZ Oil Country Lathes**

sales@xyzmachinetools.com www.xyzmachinetools.com

DEVON BLACKBURN NUNEATON SHEFFIELD LIVINGSTON & LONDON

30 YEARS OF XYZ EXCELLENCE

Meistermacher.
Made in Germany.

Jens Lehmann, German goalkeeper legend, SCHUNK brand ambassador since 2012 for precise gripping and safe holding.

www.gb.schunk.com/Lehmann

German champion with Borussia Dortmund 2002

English champion with Arsenal London 2004

www.gb.schunk.com/stationaryworkholding

Peter Büchsler,
Master – Milling and Clamping Technology

70 Years

Superior Clamping and Gripping

SCHUNK®

SCHUNK stationary Workholding
More than 5,000 Components for your Workholding

SCHUNK stationary workholding.
The modular system for combinations to create a very exact connection between the machine table and the workpiece. Set-up costs are reduced to nearly zero. For higher productivity in your machining center.

5-sided workpiece machining in one set-up
MAGNOS
Square pole technology

VERO-S
Quick-change pallet system.
90% lower set-up costs.

KONTEC
Mechanical clamping systems.
Universal talent for every application.

TANDEM
Clamping force block.
0.02 mm clamping repeat accuracy.

ENGINEERING subcontractor MAY 2015

VOLUME 12 | No.5 ISSN 1742 -5778

www.rbpublishing.co.uk

CONTENTS

NEXT ISSUE JUNE 2015

MOTORSPORT REPORT
5-AXIS MACHINING
CUTTING TOOLS
WORKHOLDING
SAWING & CUTTING OFF

Published by Roger Barber Publishing
Enterprise House, Foundry Lane, Horsham, West Sussex, RH13 5PX
Tel: 01403 266022 Fax: 0208 916 0033

Publisher: Roger Barber
Email: roger@rbpublishing.co.uk

Assistant editor: John Barber - 01403 242803
Email: john@rbpublishing.co.uk

Accounts: Jackie Barber - 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 a controlled circulation magazine, available free to selected personnel, at the discretion of the publisher. Please complete and fax back the Reader Registration Sheet if you would like to apply for a regular free copy.

Flexible yet robust

With metalworking fluids, delivering a universal solution is regarded as a holy grail and the means by which manufacturers and subcontractors can focus on what really matters: their products and their productivity. The challenges ahead are significant and derived from the different factors to be taken into account when formulating a soluble cutting fluid, from metals, machining operations or water conditions. Health and Safety requirements add another layer of complexity.

On top of that, formulators need to address all the well-known operating issues of soluble cutting fluids from foam to soaps, dirty machines, mist, skin irritation, fines handling, tramp oil rejection, corrosion, staining etc.

Quaker has addressed these challenges with FLEXICOOL™ Technology, a new generation of emulsions for individual machining cells and stand-alone fluid tanks: multipurpose usage, trouble-free and ready for the future Health & Safety regulations. A flexible yet robust concept, designed to be safe and user friendly. This series contains no Boron, no Formaldehyde, no secondary amines (including DCHA) and no bactericide.

"The icing on-the cake came from the multiple field trials we have operated across Europe and the UK, where we have seen a low consumption trend, as well as state-of-the-art machining performances especially on materials such as titanium or stainless steel," notes Laurent Barnagaud, EMEA marketing manager at Quaker.

FLEXICOOL Technology is designed to perform a wide range of machining operations including tapping and Mapal reaming even on difficult aluminum alloys such as LM25 or A356 (7% Si). It does not stain aluminum and can machine a large array of materials including aluminum alloys, stainless steel, steel, ductile cast iron, compacted graphite iron (CGI), copper alloys, titanium and plastics.

FLEXICOOL Technology is designed to perform in a broad range of water hardness from 90 to 500 ppm (5-30°dH). Over time, water hardness increases within the emulsions due to evaporation. With conventional products this may lead to soap formation clogging filters, leaving residue in the machines and accelerating oil loss. With the FLEXICOOL Technology there is no soap in hard water up to 900 ppm (50°dH) after 14 days in lab test.

Quaker Chemical UK Tel: 01453 820800
Email: info@quakerchem.com www.quakerchem.com

Mazak opens new European Parts Centre and plans further investment

Yamazaki Mazak has officially opened its newly expanded European Parts Centre in Leuven, Belgium and announced further investments to strengthen its manufacturing and customer support across the region.

The Parts Centre was officially opened by Takashi Yamazaki, vice president Yamazaki Mazak Corporation, along with Marcus Burton, European group managing director and two special invitees, Wim Biezepol of Metaaldraaiery de Eendracht, who bought the first Mazak machine sold in the Benelux region and Adrian Groves, managing director of Katron Engineering Precision, whose father bought the very first Mazak machine sold in the UK.

Opening the new Parts Centre, Takashi Yamazaki said: "Over 40 years ago Yamazaki Mazak established its European operations here in Belgium. We recognised from the beginning that we must have world class solutions for logistics to ensure that spare parts are not only available but delivered quickly to where they are required. This investment in our European Parts Centre utilises the latest technology in parts handling and logistics to further improve our delivery performance."

His words were echoed by Marcus Burton: "Service support and spare parts supply is a critical factor in our competitiveness. We are committed to offering the highest levels of support for our machines in the field, maximising uptime and ensuring that our machine tools and laser cutting machines provide the best performance. The European Parts Centre is the hub of our support network ensuring that 97 percent of orders can be despatched on the same day."

Honoured guests perform the official ribbon cutting ceremony at the opening of Mazak's European Parts Centre in Belgium.

Mazak's European managing director also used the occasion to announce further European investments. Marcus Burton said "Mazak's European strategy is continuous investment in people, products and infrastructure. Today, I can announce that we have started construction of our new Technology Centre in Hungary, and I can also tell you that we are increasing our European manufacturing capacity.

"The ability to rapidly identify, pick and dispatch spare parts is vital in keeping machines productive. Many of Europe's most important supply chains are dependent upon Mazak machines and it is vital that spare parts are readily available to maximise productivity and minimise downtime."

"From 2016 our European Manufacturing Plant in Worcester will benefit from £6 million of new machining capacity which will enable us to expand the range of our European-built machines and further reduce delivery times for our customers."

He continued: "The expanded Parts Centre sends a clear message that, for Mazak, aftersales support is an essential part of our on-going commitment to customers and that we will continue to invest in our service and support capabilities."

The newly expanded European Parts Centre is equipped with 4,600 sq metres of storage capacity, capable of holding 35,000 different parts and includes a dedicated area for large parts. The facility is operational 365 days per year and processing approximately 20,000 items every month.

The state-of-the-art warehouse is fully automated and equipped with a new "mini-load" system for small parts picking from 8,000 small trays, travelling from 70,000 locations within the warehouse, and a stacker crane system for 3,000 medium to large pallets.

In addition, the new 1,000m² logistical working area will house an automated conveyor belt system and four intelligent work stations. There will also be increased ground floor storage capacity for very large parts.

Mazak's new European Parts Centre in Leuven Belgium is capable of holding 35,000 different parts and is operational 365 days a year

The entire facility is integrated into the Mazak network with a high-end parts ordering system which facilitates online ordering from each Mazak office, together with real-time stock visibility for dealers and linked website tracking for shipment status checking.

The European Parts Centre forms part of Mazak's Total Support package, which includes service, spare parts, application engineering support, turnkey project management, training, and spindle servicing. A second phase of expansion for the Parts Centre is scheduled for 2022 to meet projected demand for parts in the European market.

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

Stunning new range of products at June Open House

600 UK has been working around the clock to deliver a wealth of new, high specification lathe and workholding products that will be unveiled at a three day Open House event from 2nd-4th June.

This Open House event, targeted at UK customers, worldwide distributors and associated engineering specialists, will take place at 600 UK's Heckmondwike, West Yorkshire manufacturing headquarters. 600 UK will be demonstrating the full extent of their new, market leading product developments including exciting additions to the Colchester and Harrison lathe and Pratt Burnerd International workholding ranges.

These product launches will include significant enhancements to the hugely successful Colchester and Harrison `market benchmark' centre lathe ranges and new machine models to complement and significantly enhance the world renowned Harrison Alpha X Series combination CNC lathes.

Visitors will be invited to tour 600 UK's manufacturing facility that was totally reconfigured and modernised through a £750,000 investment project completed in 2014. They will be able to follow the manufacture and build of Colchester Tornado CNC turning centres, Harrison Alpha manual/CNC 'teach' lathes and manual centre lathes together with Pratt Burnerd International advanced workholding products.

Also on display will be taper roller bearings from Gamet Bearings, plus laser marking systems from Electrox, market-leading brands that are all integrated within the UK based 600 Group Plc.

Business Minister visits 600 UK

600 UK welcomed the Rt Hon Matthew Hancock MP, the Business Minister to its Heckmondwike, West Yorkshire facility on 27th February where he was able to see, at first hand, the results of recent investments

The visit was part of the Minister's Great Business Tour, where he is visiting 100 businesses in as many days.

Mike Berry, 600 UK managing director says: "It was a real pleasure to meet the Minister and explain to him the significant changes already completed together with

our ongoing new developments. These have resulted from a real team effort and total involvement by all employees making our factory vision a reality''

600 UK
Tel: 01924 415000
Email: mberry@600uk.com
www.600uk.com

Star announces new Sliding Head Discovery Event

Star Micronics Ltd has announced the launch of a new type of event for 2015.
Beginning this coming June, Star will be holding a Sliding Head Discovery Event to showcase the abilities of their sliding head lathes while educating users in a range of techniques to enhance and improve production of their mill-turn machinery.

The Discovery Event is intended to bring new knowledge to sliding head users of all levels of experience. Newcomers to the field will get a great introduction to using sliding head technology from some of the most respected engineers in the industry, while seasoned users will benefit from the Star team's insider knowledge and methods.

The first event is to be held on the 9th, 10th and 11th of June at Star's head office in Melbourne, Derbyshire. There will be several Star machines on display producing components from 2 mm to 42 mm diameter with lengths ranging from 10 mm right up to 1,000 mm. The Star engineering team will be on hand throughout the event to provide technical support and to discuss your company's manufacturing requirements.

Alongside the Star machines, metrology specialists Keyence, OGP and Renishaw will also be exhibiting their latest "shop floor" measurement technology. Cutting tool supplier WNT will be showcasing their comprehensive range of sliding head tooling and for complex programming applications Delcam will be demonstrating their PartMAKER CAD/CAM software.

Star will also be running daily training sessions on their user-friendly programming software, NC Assist. This conversational program editing software enables NC programs to be written easily with minimal keyboard inputs, which reduces programming errors and significantly improves programming efficiency.

Star Micronics GB is the wholly owned UK and Eire subsidiary of Star Micronics Co Ltd, which produces sliding-headstock lathes at its ultra-modern Kikugawa plant in Japan. The headquarters is in Shizuoka. The GB subsidiary, in addition to supplying its parent company's multi-axis, sliding-headstock mill-turn centres, is also the sole UK agent for the entire range of FMB automatic bar feeders and JBS compensating guide bush systems from Germany.

Star Micronics GB Ltd
Tel: 01332 864455
Email: steve@stargb.com
www.stargb.com

Bridgeport investment provides capacity and capability

Increasing the capacity and capability of the machine shop with two new Hardinge Bridgeport machining centres will ensure leading vintage and historic car replica and restoration specialist Tom Dark Engineering Limited maintains its pole position in this highly competitive field.

The two machines were supplied by Southam-based Engineering Technology Group and have fitted seamlessly into Tom Dark's manufacturing operations, with seven specialist engineers operating 12 hours a day.

Tom Dark Engineering is one of the UK's leading exponents of vintage race and touring car engineering, being able to manufacture and supply a single component for a rare historic vehicle to a complete marque replica, capable of full race competition.

The machining cell featuring the two latest Bridgeport machines

"Some of the replica's we create are of high value, legendary cars from the likes of Maserati, Bugatti and MG," founder and managing director Tom Dark explains. "Our reputation has been built on being able to re-create anything from an obsolete suspension component to a complete competition or road ready car and to do that we have to have the manufacturing support infrastructure. As such we have invested in the appropriate machine tools to enable us to be as self-sufficient as possible."

Tom Dark's machine shop and assembly plant is located in a converted, custom designed barn near Kiddington, Oxfordshire in the heartland of the UK motorsport industry. Very often it is tasked with manufacturing components without any drawings, a process that involves creating a toolroom copy, extensive pattern work for castings and use of 3D and solid modelling.

Raw materials are also wide and varied. Bronze, aluminium and cast iron are commonplace but EN24 and EN36 alloys are used for high tolerance stress components.

"We have a mixed workshop capability but were very careful when we specified the two Hardinge machines to ensure they gave us the optimum capacity when we need it coupled with the

precision, capability and reliability essential in the business," adds Tom Dark.

Most recently, he has acquired a new Bridgeport XR 760 high performance VMC and a large capacity Bridgeport GX 1600 VMC, both of which give them the scope to machine large components such as a complete cylinder block casting to the plethora of small components that make up a car or sub assembly.

The XR 760 is equipped with a Heidenhain iTNC530 control and operates at a maximum spindle speed of 12,000 rpm. It features a 30 tool magazine capacity and as with all Bridgeport machines, is equipped as standard with a WEISS Spindle, BIG-PLUS dual contact toolholding capability and offers the user the ultimate in rigidity and thermal stability. The machine supplied to Tom Dark was pre-wired for probing and a 4th axis pre-wire for when they require the Nikken 4th axis capability.

The GX 1600 VMC is currently the largest capacity Hardinge VMC and was specified mindful that the company needs the facility to machine complete engine castings, which are sometimes 1.4 m in length. Also equipped with a Heidenhain iTNC530 control, it has a 30 tool BT40 carousel, 10,000 rpm spindle and the 4th axis interface. Aware of the need to machine cylinder blocks and similar large components Tom Dark also specified a 260 mm Z axis riser block on this machine to optimise the height within the machining cell. He explains: "An in-house cylinder block machining capability is important to us because we also machine the pistons and the cam shafts as well, giving us complete process control. In the past though we have machined blocks from billets not castings; a Bugatti Type 50B engine comes to mind, and that whole project probably entailed some 6,000 hours of machining and building.

This 1.4 M long cylinder block casting was machined on the Bridgeport GX 1600

"The Bridgeport machines are undoubtedly the cornerstone of our manufacturing operations," he concludes. "In the past we have operated a range of Bridgeport VMC 800, 600XP, 1000XPs, so we are long standing users and they have held us in good stead."

ETG Hardinge (through the Engineering Technology Group)
Tel: 01926 818416
Email: djames@engtechgroup.com
www.engtechgroup.com

Steering clear of inefficiency

Subcontractors need to be sharp performers in an automotive market where productivity is king

Steed Webzell reports

Britain's car manufacturing industry is booming. Some 1.5 million cars were made on these shores in 2014, some 50 percent more than in 2009. As a result, investment continues apace, with three major announcements in the past six weeks alone, with Honda, Jaguar Land Rover and the London Taxi Company pledging combined total funds of £1.05 billion to build new models.

All this is great news for the subcontract supply chain, which is enjoying a period of sustained growth. A case in point can be seen at the Welshpool factory of CastAlum, one of the UK's largest aluminium diecasters. Here, two long term contracts to supply cast and machined steering gear housings and transmission cases, will require the company to produce 700,000 parts this year alone.

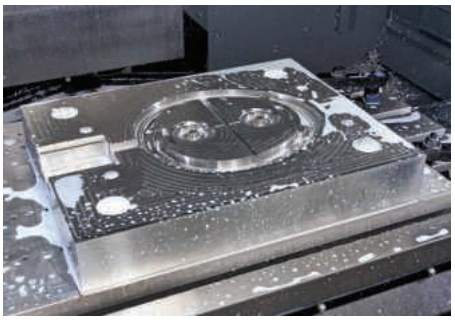
To accommodate the contracts, CastAlum opted for the sequenced purchase of Heller twin-pallet, 4-axis, horizontal-spindle machining centres. A total of 10 Heller H2000 HMCs now populate the main production hall at Welshpool, and each is able to machine any type of steering gear housing or transmission case in two operations, providing flexibility of manufacture.

"The Heller machining centres have an average uptime of 95 percent, which is very high for manually loaded, twin-pallet machines," says Keith Brown, managing director at CastAlum. "This is due to efficient presentation of material to the second pallets and from there to the spindles, which minimises changeover times."

Of course, toolmaking also remains a prominent activity in the automotive sector, as Kingswinford-based RP Tooling can testify. At least half of RP Tooling's output is destined for the automotive industry, either as trim or under-bonnet items on such vehicles as the Range Rover Sport, Audi R8 Etron, F-Type Jaguar and Ford Ranger.

Underpinning the manufacture of the mainly aluminium moulds, which are guaranteed for up to 100,000 parts and are often the bridging tool between prototyping and mass production, are three-axis vertical machining centres from Hurco. In fact, RP Tooling has increased its count of Hurco machines to 12 in the past five years, including its first five-axis model, a VMX30U. The most recently installed pair of machines, both VMX30Mi models, are of the latest Hurco design with enhancements to machine control and connectivity.

Co-founder Darren Withers comments on one major improvement, called Ultimotion, in the latest Hurco control whereby cycle times are reduced by up to 30 percent. This



is down to the patented, software-based look-ahead function, which uses an advanced algorithm within WinMax to evaluate the component geometry and motion profile of the cutting cycle to optimise and smooth the toolpaths. It is especially beneficial when profiling complex features, reducing manufacturing costs and allowing more competitive prices to be quoted.

Elsewhere, an additional prismatic machining resource was also top of the agenda at Southampton-based MCC Industries and its sister company Automotive Accessories, which needed to invest in additional vertical machining capacity. Key requirements in choosing the new machine were that it had to be operator friendly, easy to set-up and robust enough to maximise the capabilities of the latest cutting tool technology on materials that include stainless steel. The result was the purchase of an XYZ 1020 VMC, which met all of managing director Mark Cox's criteria.

Automotive Accessories is one of just two companies worldwide manufacturing H-point manikins for the automotive industry. The manikins are used in the design and testing of automotive interiors, particularly seating systems and for whiplash testing approvals to Euro NCAP standards. MCC and Automotive Accessories reviewed several machines during the specification process, with XYZ and its Siemens controlled VMC coming out on top for a number of reasons.

"The machine is maximising the potential of the high performance tooling that we use from WNT," says Mark Cox. "From a control point of view, the 828D Shopmill control is extremely user friendly and we were pleasantly surprised to find that all of the control's options are activated. In speaking to other machine tool companies these would have been charged as extras, adding several thousands to the purchase price."

Clearly, cost efficiency is paramount in an industry where only the fittest survive, and the latest machine tool innovations are proving genuine differentiation for those prepared to invest in their future. With this in mind, the UK automotive supply chain is proving itself to be robust, forward-thinking and determined to succeed.

Heller Machine Tools Ltd
Tel: 0121 275 3339
Email: steve.malone@heller.biz
www.heller.biz

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

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

Mazak

Your Partner for Innovation

INCREASED PRODUCTIVITY.
REDUCED MACHINING TIME.

SMOOTH OPEN HOUSE

13th-15th May

REGISTER NOW:

www.mazakeu.co.uk/SOH

SMOOTHX delivers a quantifiable step-change in machine performance and productivity.

Mazak's revolutionary combination of cutting-edge hardware and state-of-the-art software, working in tandem, enables SMOOTH TECHNOLOGY to deliver exceptional machining performance dramatically reducing cycle times with no compromise on accuracy or quality.

To find out more please visit: **www.mazakeu.co.uk/SMOOTH**

SMOOTH TECHNOLOGY

Yamazaki Mazak U.K. Ltd. **Badgeworth Drive, Worcester WR4 9NF**
T: +44 (0)1905 755755 **F:** +44 (0)1905 755542 **W:** www.mazakeu.co.uk

Productivity | Ergonomics | Connectivity | Intelligence | At your fingertips

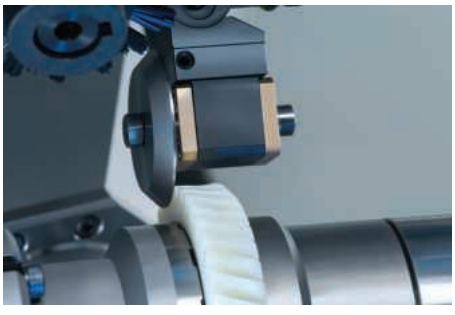
Armed to the teeth

The universal solution for the manufacture of a multitude of geared components

The gear is one of the earliest machine components in the history of mankind. It is unimaginable that transport as we know it would be what it is today without gears. For thousands of years, gears have served the purpose of movement and power transmission – first the power of flowing water, then that of steam and today numerous kinds of energy sources. Geared components play a central role and are used in a large variety of systems, for example in the powertrain, in steering systems and for on-board electronics, such as seat ergonomics. It is this variety of shapes and materials of gears that have the manufacturers asking how to economically produce these components at the required quality. The engineers from EMAG KOEPFER were facing this question too and have come up with the K 300 Hobbing Machine, a universal solution for gear production.

The wide range of workpieces that can be machined (geared) on the K 300 covers everything from pinion shafts to helical gears. Equally wide is the range of materials the machine can handle, from steel alloys and aluminium to brass, bronze and even plastics.

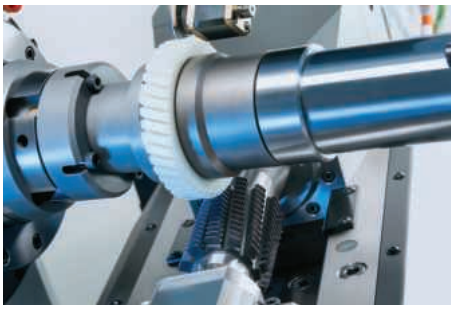
The construction of the K 300 is designed for the highest component quality with a machine base of polymer concrete. In conjunction with the closed-box design that has headstock and tailstock connected by a yoke and the whole enclosed in a box-frame, it provides the highest possible degree of rigidity and precision during the gear cutting process. The hobbing head, inclined by 45 degrees, offers optimal chip flow



conditions, which play their part in the quality of the component produced. This also eases access for the machine setter. The machine accommodates a variety of gear cutting technologies, such as high-performance wet and dry hobbing, the skiving and hard milling of cylindrical gearings, as well as the plunge and tangential hobbing of worm gears. It also allows for the cutting of straight bevel gears using either form milling cutters in a multi-step process or Conikron hobs. Even out-of-round gearings can be machined on the K 300.

Water-cooled direct drives on all process-relevant axes ensure a fast machining process and the best machining quality, as the play in mechanical transmission elements is eliminated. Additional tasks are handled by auxiliary NC-axes that carry out jobs such as deburring and brushing or use sensors that guarantee the gearing is aligned correctly with markings, bores, secondary gearings, cams or other features. The well thought-out design of the K 300 is rounded off by the position of the electrical cabinet,which is located behind the machine, and the optimal mass distribution of main spindle and tailstock. Both ensure excellent thermal stability and thus a stable process, even in large batch production.

The ergonomic construction allows easy access to all relevant machine components. For instance, the setter can, with the help of quick-clamping systems for main spindle, tailstock and hob, set up the machine on a brand new part in less than 20 minutes. For this process, all settings, from tailstock clamping force to the positions of automation equipment components, are



entered in the NC-program using the teach-in function. The K 300 features up to 15 NC-axes that help achieve short setup times. They are supplemented by the ultra-fast KOEPFER loading device with V-gripper that, in its standard execution, can handle workpieces of up to 10 kg.

The machine specification offers a wide range of technologies, including suction units for dry machining, oil-mist extractors for wet machining, a variety of deburring systems, vibration dampers for shaft machining, sensors for the automatic alignment of components or for skiving operations, and much more. The flexibility with which the K 300 can be used becomes even clearer when one takes a look at present applications. Whether you are machining large batches of transmission components or small batches of plastic gears, the K 300 can be equipped to suit your particular requirements.

Almost all gears can be hobbed with the flexible KOEPFER K 300 machine. Its vibration-resistant base of polymer concrete, its box-frame design and its thermo-symmetrical construction make for efficient processes.

EMAG UK Ltd
Tel: 01902 376090
Email: sales@emaguk.co.uk
www.emag.com

DMG MORI
Technology Days, Coventry
19th–21st May 2015

COOPERATION SUSTAINS INNOVATION

NLX SERIES | UNIVERSAL TURNING MACHINES

NLX 2500|700 –
The bestseller in universal turning.

made in EUROPE

CELOS® from DMG MORI

HIGHLIGHTS OF THE NLX SERIES

+ **Box ways on all axes** with optimal damping properties and dynamic stiffness
+ **Integrated coolant circulation** in the machine bed for improved thermal stability
+ **BMT® turret** (Built-in Motor Turret) for a similar milling performance to machining centres

SAMPLE APPLICATIONS

Hydraulic valve // Fluid power
Material: S45C
Dimensions: ø 120 × 100 mm
Machining time: 30 min. 35 sec.

Guide bushing // Automotive
Material: S45C
Dimensions: ø 80 × 100 mm
Machining time: 13 min. 29 sec.

24/7 SERVICE HOTLINE DMG MORI

+44 (0) 20 30 24 15 14
Support around the clock

For technical information and brochures, visit: www.dmgmori.com
or contact DMG MORI UK

DMG MORI

Toolmaker stays on TRAK with XYZ

With a business dating back to 1946 you would imagine that there was very little that fazed the toolmakers at Hove-based CB Powell. However, in a busy toolroom even the most adept toolmaker needs a helping hand occasionally and it is here that the XYZ ProtoTRAK control comes into its own.

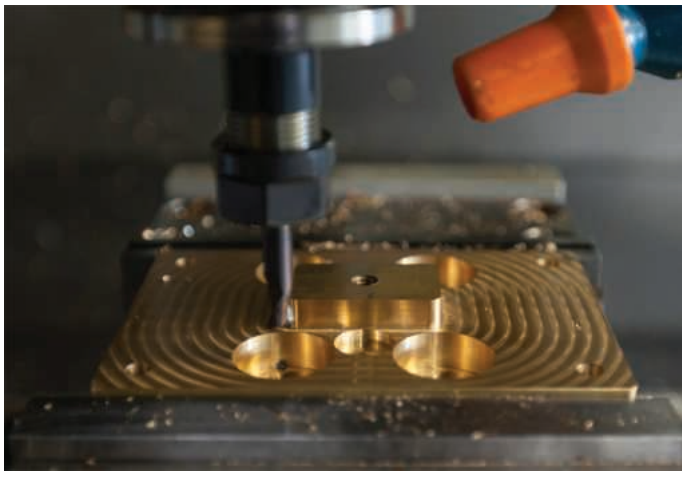
C B Powell's workload comes from strong connections with local OEMs, including those involved in the manufacture of pumps, health care equipment, printers, and track side switch components; a mix that creates a daily workload that is varied and generally based around one-off or low volume prototype work. As a result C B Powell's plant list is heavily reliant on toolroom type machine tools, with great emphasis on manual skills, the only concession to volume production being an XYZ ProtoTRAK LPM (Lean Production Machine), which was purchased to accommodate any prototype that developed into batch type work. The LPM isn't the only ProtoTRAK controlled machine on C B Powell's plant list though. Recognising that the ProtoTRAK control is ideal for non-CNC machinists and for one-off and prototype work, the business currently has six other XYZ machines with this control fitted.

"We have long been advocates of the ProtoTRAK control, having bought our first machine, which we still use on a daily basis, almost 20 years ago when ProtoTRAK was first introduced. With our background in toolmaking, CNC is something of a mystery to us and the simplicity of programming the

ProtoTRAK control, and of course the ability to use the machine by winding the handles, which is still part of a toolmakers day-to-day life, is a big plus for us. An example of this is Andy, one of our toolmakers, who had no experience of CNC at all and was initially worried about using the XYZ ProtoTRAK machines, so much so that we dubbed him 'Windy Miller'. However, with the TRAKing facility that comes with ProtoTRAK controlled machines, he is able to wind the handles to run the program and, as a consequence, he quickly gained confidence. He now programs the machines without any issues at all," says managing director Andy Powell.

With C B Powell's toolmakers sometimes working on up to six jobs in a day, it is easy to lose concentration and, with most jobs being a one-off, there is no room for error. It is here that the TRAKing facility comes into its own. When the operator presses the TRAKing softkey on the control, each axis of travel is controlled by turning the table- or saddle-mounted electronic handwheel. The x or y axis handwheel moves forward through the program in a clockwise direction, with counter-clockwise moves backward through the program. The operator can also select different speeds of TRAKing, with the y-axis handwheel offering slow progression through the program and using the x-axis handwheel providing a higher speed variation. The ProtoTRAK machines at C B Powell are a mix of 2- and 3-axis mills along with ProTURN lathes. The latest addition is a 3-axis XYZ SMX 3500 bed mill. The XYZ 3-axis bed mills feature a programmable z-axis, while maintaining the flexibility of the swivel head and manual quill found on its smaller knee mills. The XYZ SMX 3500 also benefits from a programmable 5 hp, 5000 revs/min, variable speed head along with an ISO 40 spindle nose, axis travels of 770 x 500 x 500 mm in x, y and z and a maximum table load of 600 kg.

The ProtoTRAK 2- or 3-axis CNC allows users to machine complex forms simply through use of canned cycles for a variety of machined features such as pockets of every conceivable shape, pockets with islands, thread milling, bolt hole patterns, drilling, tapping and boring. ProtoTRAK also features AGE profiling, which means no more calculations with the addition of the unique 'guess' key. If a dimension is missing from the drawing, it will calculate the position of a tangent or intersection point. ProtoTRAK is also capable of 3D surfacing with 'on board' DNC and the ability to handle virtually unlimited program size. In addition, programs can be transferred from one ProtoTRAK control to another.



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

The Y's and the therefores.

New Doosan 6" and 8" chuck Lynx lathes with integrated Y-axes.

Lynx single and sub-spindle lathes, equipped with integrated +/- 52.5mm Y-axis capability, are the latest big 'small' thing from Doosan. They're fast, productive and accurate and mean, therefore, that you can machine small production parts better than before.

If you're looking for a flexible and compact lathe - check-out this new Lynx range now - or your customers will want to know the reason why!

MILLS CNC

For more information on the new
Y-axis Lynx range call us on 01926 736736
or visit www.millscnc.co.uk

To Victor the spoils

Victor CNC provides turning capacity for Scottish subcontractor

Based in Airdrie, North Lanarkshire, RMK Engineering has recently acquired a VTurn 40 turning centre from Victor CNC to provide additional capacity for its growing subcontract business.

Down the road from Glasgow, this subcontract manufacturer has a history steeped in providing machining solutions to the oil and gas industry. So, when the machine shop needed a turning solution to extend capacity and also open the doors to turned parts opportunities beyond the 300 mm diameter of its existing lathes, Victor CNC delivered with its VTurn 40 CNC turning centre.

Commenting upon the acquisition, RMK Engineering's Bob McKechnie says: "The Victor machine has proved to be good value for money for our business and has given us the opportunity to take on a lot of larger work with the large capacity that we were looking for. Since buying the machine, it has enabled us to take on more customers because of the capacity it gives us."

The company can now produce parts in the region of 650 mm diameter with a length of up to 2.2 m.

"The machine has been absolutely perfect for us," continues Bob McKechnie. "Almost 95 percent of our work is in the oil & gas industry, so the materials we cut will vary from aluminium through to Inconel and Hastelloy. Not only is the machine rigid and robust, but from a service perspective the machine has been exceptional. I would have no hesitation in buying more machines from Victor, as and when we require, as the service has been excellent."

The Victor VTurn 40 was chosen as it is the ideal choice for machining difficult materials that demand heavy cutting. With a Fanuc 50HP spindle and a Z-axis power of 9.4 HP, the VTurn has a two-step gearbox to further enhance the cutting torque at low rpm. This delivers power on a robust platform that provides the optimum machining performance for companies like RMK Engineering.

With a machine platform that has been created for heavy duty machining, the VTurn 40 has a 45° single block slant bed for maximum structural rigidity, which also ensures the chips fall away from the work envelope when conducting heavy machining. To further bolster the robust platform, Victor has developed this machine with box slideways that are hardened to HRC 55 for heavy cutting applications to dampen vibration.

From the productivity standpoint, the VTurn 40 has a rapid feed rate of 20/20 m/min and a 10 tool turret as standard. This reduces non-cutting and setup times for the end user. Further enhancing the ease of use and setting up, the VTurn 40 has two sliding doors at the front to provide accessibility for large parts and subsequent loading via gantry cranes.

Victor CNC Ltd, based in Rochdale, Lancashire, is an associated subsidiary Company of Victor Taichung Machinery Works Co.Ltd. Victor CNC Ltd is the sole distributor of Victor CNC lathes and machining centres in the UK, Eire and selected countries within mainland Europe. In addition, spare parts are supplied throughout the whole of Europe. In the years since its inauguration, Victor CNC Ltd has seen continuous growth and development, which is reflected in its marked increased market share. Supply, installation and commissioning of machines, as well as technical support through service, spare parts etc, are all supplied direct from Victor CNC Ltd's own base.

Victor CNC
Tel: 01706 648485
Email: sales@victorcnc.com
www.victorcnc.com

The height of machining expertise

It's a startling fact that around one in ten ejector seats installed has actually been deployed in an emergency. You'd be hard pressed to imagine a situation where the reliability of mechanical parts, for the few seconds when they do their job, could be more critical.

Aerospace component manufacturer Clayton Precision Engineering Ltd depends on accurate and repeatable machining of high-quality, complex parts for ejector seats that simply can't afford to fail.

Founded 50 years ago in Twickenham, Clayton Precision's original owners relied mostly on local business for their livelihoods. It's unlikely, back in those relatively dark ages of manufacturing technology, that they could have imagined that one day they'd be making parts for the latest fighter jets.

Ten years ago, Jan van Jaarsveld bought the company and made the decision to concentrate on the aerospace industry. Today around 90 percent of its business comes from this sector, including a long-term contract to supply parts and assemblies for the world's largest manufacturer of ejector seats.

"The business is going from strength to strength," says Jan van Jaarsveld. "Three years ago Clayton merged with another specialist engineering company, R A Fores Ltd. This merger dictated a move into a second unit, more than doubling our floor area, which we began by filling with new Haas CNC equipment. We like the Haas machines as they're quick, accurate and reliable and the backup has been outstanding. Over the years, I've invested heavily in Haas; currently we have two Mini Mills, a VF-1 and seven VF-2SS Super Speed verticals all fitted with 4- or 5-axis rotary tables. The most recent VF-2SS was equipped with a 5-axis trunnion table."

"The new 5-axis machine has made a huge difference. It's currently producing L168 aluminium components for ejector seats. The trunnion's full simultaneous 5-axis motion has reduced the number of operations from eight to just two. It's cut the previous cycle time by 25 percent and the reduced number of setups has increased repeatable accuracy, maintaining conformity throughout the part run. It goes without saying that accuracy is vital when you're dealing with parts that save lives. Our inspection department maintains quality control. All testing equipment is calibrated to national standards and we operate a 'Total Quality Management Policy' with recorded inspection undertaken at every stage of the job."

Haas Automation's VF-2SS has 762 x 406 x 508 mm travels, comes standard with a 12,000-rpm spindle, a 24+1 side-mount tool changer that takes less than 1.6 seconds tool to tool. High-pitch ballscrews and high-torque servo-motors provide rapids of 35 m/min. Clayton Precision programs its Haas machines offline, using a combination of OneCNC and GibbsCAM. Programs are then transferred to the control via USB, although the company is considering installing an Ethernet network.

"Many of the large aerospace companies are sourcing a lot of parts from lower-cost regions," continues Jan van Jaarsfield. "We have to focus on producing higher-value, more complicated parts and assemblies, and make the processes more efficient. Our parts are complex and tolerances are very tight, but having a robust and reliable process means we can still be strong and competitive.

"Willingness to invest in the necessary technology is paramount," he stresses. "Without forward-looking commitment, 'working smart' would only be a goal around here, instead of a daily reality.

"In the end, if we can use the latest technology to increase our work efficiency, we will," he emphasises. "Similarly, if we can employ multi-axis equipment to reduce setups or use 12,000 rpm machines, that is exactly what we'll do. That's how we've built a competitive edge and how we've managed to grow our business 200 percent in the last three years," he adds, with a smile.

"Finding experienced CNC operators is getting harder and harder. We hire people we have faith in and train them ourselves. Haas machines are easy to teach and easy to learn as they're much better organised and more intuitive than others."

"We currently employ 28 staff, including two full time apprentices. Clayton has close connections with a new aerospace college in Feltham opening later this year, so we'll take on and train more as the business expands. Our objective is to increase our machining capacity as we increase our skilled staff.

Haas Automation Ltd
Tel: 01603 760539
Email: cnc@haas.co.uk
www.haas.co.uk

Productivity improvements are never over at Innova

There are a couple of common misconceptions amongst some UK precision component manufacturers concerning automation, specifically regarding its application and its limitations. The first is that automation is really only suitable for high-volume parts production and for part runs of the same shape and size. The second is that automation is expensive and that return on investment is long and can therefore be difficult to justify.

Innova Design & Build Ltd has debunked these myths. This Hampshire-based precision subcontract specialist, led by managing director, Hugh Watson, isn't your typical manufacturing SME.

Having previously invested in its first 5-axis machining centre seven years ago and through its more recent acquisition of a Mikron 5-axis machine with integrated work-piece pallet change capability in October 2013, the company has already demonstrated its progressive and positive attitude to investing in the latest advanced manufacturing technologies.

This drive to increase productivity, improve performance and to become, in Hugh Watson's own words, "the most efficient machining workshop in the UK", has now seen Innova invest in a new, innovative automation solution from GF Machining Solutions, comprising a Mikron HPM 450U 5-axis machining centre integrated with a system 3R WorkPartner 1+ robot.

The mainstay of the investment is the system 3R robot which is equipped and configured with 14 x Magnum pallets for larger parts and 110 x Macro pallets for smaller parts. The machine, robot and associated cell management software, were

installed at Innova's Emsworth facility in December 2014.

Innova manufactures complex, high-precision parts for the aerospace, marine, rail, space and electronics sectors. Parts are machined from a variety of materials, from aluminium through to plastics, and parts manufacture is characterised by short production runs of prototypes and one-offs through to small-to-medium batch sizes, with short cycle times. The emphasis throughout is on part quality, quick turnaround and short lead time fulfilment.

Hugh Watson says: "We invested in a Mikron 'Vario' 5-axis machine, equipped with a 7-station workpiece pallet changer and 220 position tool changer, in 2013.

"Since being installed the machine has been working around the clock and has helped us dramatically improve our productivity and make us more efficient."

However, as impressive as the Vario's performance was and is, Hugh Watson could see that Innova's machining processes and performance could be further improved by investing in a more 'sophisticated' automation solution:

"There are 168 hours in a week and from experience we know that a significant percentage of these hours can be 'wasted' performing non-profitable operations, for example job setups.

During the normal eight hour day shift, all efforts are directed at ensuring that the new HPM 450U and WorkPartner 1+ are able to run unattended overnight. On Friday afternoons the machine and the robot are set-up to run non-stop over the weekends.

The focus during the day therefore is on performing a range of preparatory tasks that include designing and making complex and

ingenious fixtures for 5-axis machining of the parts, creating, testing and storing the machining programmes complete with all machining data, that will be used to machine the parts, setting up the jobs on the robot's Magnum and Macro pallets and scanning them into the automation management database for quick retrieval and use, as well as planning the machining schedule.

The machine has a large-capacity 200 position tool changer and tools can be left and effectively stored in the magazine, ready for future use.

The Mikron HPM 450U is a versatile, high-performance 5-axis machine equipped with a 12,000/20,000rpm spindle, a direct-drive rotary tilting table (B-axis tilt = 120 ° /+ 45 °; C-axis = n x 360 ° and a 220-position automatic tool changer). It is compact with a small footprint and can be used for 5-side and full simultaneous 5-axis machining.

The system 3R WorkPartner 1+ robot is a compact, modular and flexible automation unit for changing pallets, and is ideal for both one-off and series production.

The robot provides reliable and rapid pallet storage and pallet change capability and can be configured to handle 'light' and/or 'heavy' pallet magazines. The automation solution is driven and controlled by powerful cell management software used to manage the automatic loading/unloading of parts into the machines, record the machining time of each job.

GF Machining Solutions Ltd
Tel: 02476 538666
Email: info.gfms.uk@georgfischer.com
www.gfms.uk@georgefischer.com

New turning centre for machining large workpieces

A new, twin-turret, CNC turning centre designated NZX 4000 has been introduced by DMG MORI for highly productive machining of long workpieces with large diameters, such as crankshafts for marine engines or oil pipeline components. The trapezoidal, deformation-resistant machine bed and wide, flat guideways in all axes are primarily responsible for the rigid structure.

The new NZX 4000 turning centre from DMG MORI

The top, 12-station, 11 / 7.5 kW turret features an optional, ± 70 mm Y-axis and a direct drive, allowing the turning centre to achieve a milling performance equivalent to that of an SK 40 machining centre. The X-axes of both turrets are equipped with Magnescale linear encoders to ensure high positioning accuracy and repeatability. It is an option in the other axes.

The beltless, gear-driven main spindle is rated at 37/30 kW (30 minutes/constant). There is a choice of three spindle bore diameters, 145 mm, 185 mm or 285 mm, suitable for a wide range of machining applications. Long boring bars up to one metre in length may be used and various steady rests are available in manual or NC versions. Maximum turning diameter is 660 mm and distance between centres can be either one, two or three metres. Rapid traverses in X and Z are 20 and 24 m/min respectively.

Control is provided by the DMG MORI ERGOline with CELOS on MAPPS from Mitsubishi. Industry 4.0-compliant, CELOS provides a uniform user interface for all new machines from DMG MORI and links with customers' ERP and production planning systems. Apps provide the user with integrated management, documentation and visualisation of order, process and machine data on a 21.5" multi-touch screen.

A 40 mm diameter, 2.5 metre long steel ballscrew being machined on an NZX 4000 in a cycle time of 14 minutes 10 seconds

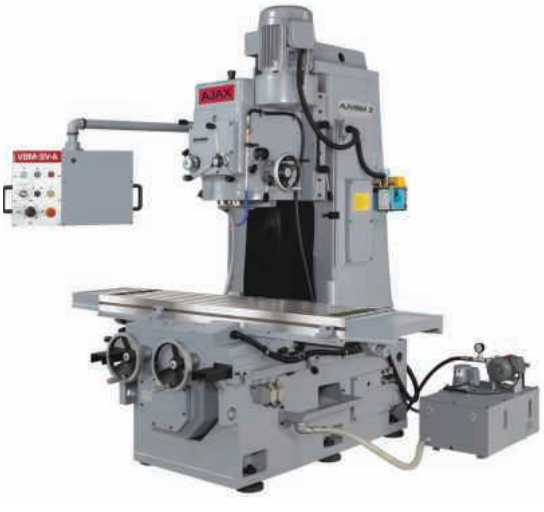
DMG MORI SEIKI UK Ltd
Tel: 0247 651 6120.
Email: steve.finn@dmgmori.com
www.dmgmori.com

New vertical milling range from Ajax

To meet customer requests for heavy duty milling machines for performing roughing-out cycles when creating datums for dies and moulds or hogging out, removing scale and harder surfaces prior to resetting for precision machining, Ajax Machine Tools International is introducing its AJVBM Series of vertical milling machines. The non-CNC machine range has travels up to 2,000 mm by 800 mm by 700 mm and up to 11 kW spindle and 3.5 kW feed motor power, with mechanical gearboxes.

The AJVBM Series of four machines can be specified with Heidenhain or Newall 2- or 3-axis digital read-out. Each machine is constructed on heavy duty ribbed castings with the added rigidity created from hardened and ground solid boxways and ISO 50 spindle taper.

The range starts with the AJVBM 3 having a 1,700 mm by 380 mm table and travels of 1,000 mm by 380 mm by 500 mm with up to 600 mm gap between the spindle and table.



The spindle drive is 5.5 kW giving a speed range 45 to 1,500 revs/min in 12 steps and the feed range is variable between 20 and 1,000 mm/min.

The largest machine, the AJVBM 8 weighs in at 11.8 tonnes with a 2,700 mm by 750 mm table with up to 770 mm between spindle and table. Travels are 2,000 mm by 800 mm by 700 mm. The 11 kW spindle has infinitely variable speed range between 45 and 1,500 revs/min and feed rates are variable from the 3.5 kW motor up to 1,000 mm/min.

Ajax Machine Tools International Ltd, is now recognised as one of Europe's leading suppliers of both Conventional and CNC Machine Tools. Apart from continuing to service a wide and diversified range of British based companies and institutions, it is also exporting to over forty countries worldwide.

Ajax has a huge range of machines which include small manual grinders, CNC lathes, machining centres, CNC & manual milling, Flat & slant bed lathes, drilling & boring machines.

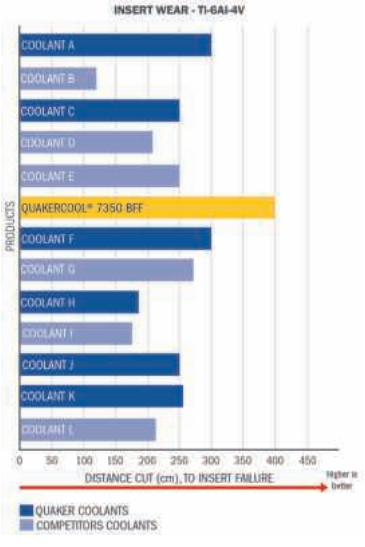
Ajax Machine Tools International Ltd
Tel: 01590 676000
Email: sales@ajax-mach.co.uk
www.ajax-mach.co.uk

FLEXICOOL Technology:

New state-of-the-art metalworking fluids for total performance

by Jon Plawchan, Global product manager and Roman Stiller, product manager Germany/Central Europe

What is FLEXICOOL™ Technology?
FLEXICOOL Technology is the backbone behind a new generation of emulsions for individual machining cells and stand-alone fluid tanks; multipurpose usage, trouble-free and ready for the future Health & Safety regulations. It is a new approach for formulating metalworking fluids: our initial goal was really to develop an innovative foundation for the future of machining and grinding fluids that perform with the absence of negatives across a diverse scope of legislation, applications, alloys, and water conditions.



What does that mean in terms of chemistry?
This meant challenging the status quo of the Metalworking industry's formulating legacy, which relied heavily on balancing dynamic fatty acid (lime soap) based chemistry, meta-stable macro-emulsions, as well as the traditional bio-stability chemistry approaches (bactericides such as formaldehyde releasers, boron, ethanol amines).

So how does it translate for customers, especially looking for "trouble-free" products?
This technology offers a simple value proposition (trouble-free / multi-purpose / ready for the future Health & Safety regulations) and has very good machining performances and lower consumption. We paid special attention during development to address all well-known operating issues of soluble cutting fluids (foam, soaps, dirty machines, mist, skin irritation, fines handling, tramp oil rejection, corrosion, staining etc. This allows us to fulfill the needs of the market successfully, while keeping the aftermarket service element to a minimum and the customer experience very positive. So yes, the FLEXICOOL Technology concept offers this "trouble-free" robust platform that customers are looking for, when run properly.

Is there any other value for large, international customers?
There is also some value towards promoting a globally approved technology (materials / legislative / manufacturing), and the targeted customer base may also find nominal value in the globality of the FLEXICOOL Technology platform, however primary value remains in the technology's application.

What business challenge are you hoping to solve with FLEXICOOL Technology?
Complexity and efficiency; the metalworking industry tends not to have products for all application / material combination, for example aluminum products do not have the price to performance ratio to be attractive to those who manufacture with cast iron, or steel, and therefore clients use multiple products versus one universal product. Additionally, the industry must differentiate between water conditions, requiring yet another layer of product segmentation. FLEXICOOL Technology addresses all these factors, whilst providing a "trouble-free" robust platform.

But FLEXICOOL Technology being an all-round product, does it perform in more demanding applications?
FLEXICOOL Technology has been designed with the most modern, state-of-the art chemistry from our global R&D team. We ran extensive tests in Quaker's machining centres on multiple materials and machining operations; even on difficult aluminum alloys, such as LM25 or A356 (7 % Si), reaming or tapping was not a problem, as long as the emulsion concentration was kept at the desired level. In our tests, surface roughness values after Mapal reaming were as low as 0.25µm (Ra), and all tapped holes were perfectly in spec. No build up edge (BUE) was observed, either on the reamer or on the tap.

Actually, FLEXICOOLTechnology has shown the best performance in titanium machining amongst the tested products, including both Quaker and competitors' products.

What are the key features and benefits to buying FLEXICOOL Technology?
Clients can now apply a single FLEXICOOL Technology product into multiple water conditions, on multiple materials (steel, stainless steel, cast iron, aluminum alloys, copper alloys, titanium), in multiple countries, in multiple small systems design, and multiple applications e.g. drilling / reaming / tapping / etc.), trouble-free.

Quaker Chemical UK
Tel: 01453 820800
Email: info@quakerchem.com
www.quakerchem.com

Inline concentration measurement

The performance and maintenance of lubricants were the topics at a recent lubricant forum, that took place in Fellbach near Stuttgart, Germany. Within the practical presentations, the participants got to know about the latest technical developments, new challenges and optimisation approaches. This included the inline concentration measurement of lubricants and cleaning agents, that ensures a product optimal and cost-efficient use.

In SensoTech's presentation "Online analysis for monitoring of emulsion & cleaner concentrations" the LiquiSonic® measuring method, applications in the process and benefits based on case studies of Volkswagen and other users were described

The LiquiSonic sensors are installed in the pipeline or vessel. Therefore, the data is measured directly in the process and laboratory analyses with delayed results will be reduced. The continuous monitoring increases the component quality and reduces processing and material costs. The concentration determination is based on sonic velocity measurement, which enables high-precision, maintenance-free and long-term stable measuring systems. The LiquiSonic controller processes the data online and transfers the results to control systems for process automation.

For over 20 years, SensoTech has been focused on the development, manufacturing and sales of inline analysis systems for process liquids. With worldwide installed, highly precise and innovative measuring systems for monitoring of concentrations, compositions and changes of chemicals as well as properties directly in the process, SensoTech has significantly contributed to the enhancement of this state-of-the-art technology.

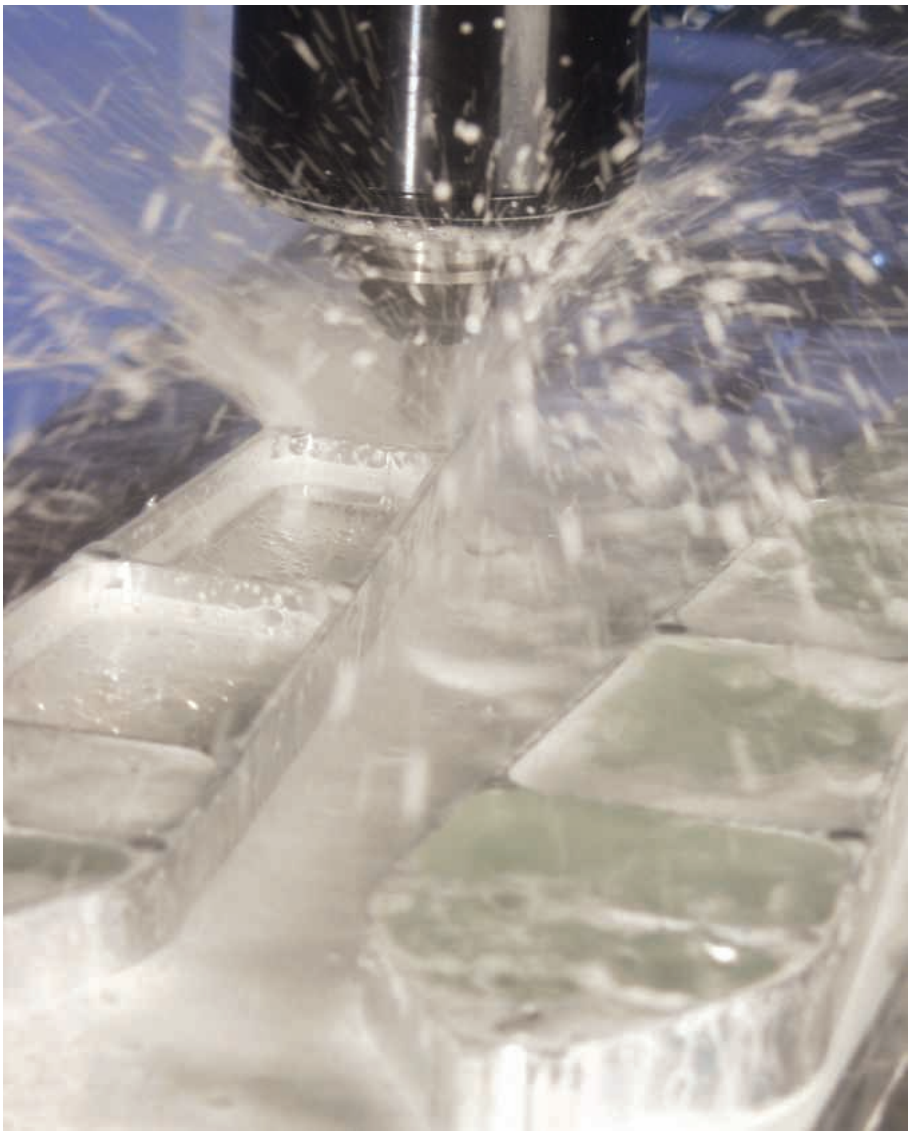
In addition to the measurement of concentration and density, the phase interface detection as well as the monitoring of chemical reactions like polymerisation and crystallisation are typical applications. SensoTech inline analysers set standards in the technological and qualitative valence, user friendliness and reproducibility of process values. Special calculation methods and sophisticated sensor technologies enable reliable and precise measuring

results even under the most difficult process conditions.

The knowledge and the experiences of the highly motivated and committed SensoTech staff are the result of many different applications supported by well-known customers from the chemical and pharmaceutical industry, food technology, semiconductor technology, automotive and metal industry as well as many other industries. In addition, these experiences also open up unimagined solution possibilities for new measuring challenges.

SensoTech GmbH
Tel: 0049 39203 514100
Email: info@sensotech.com
www.sensotech.com

Machining project shows correct coolant choice saves energy



A growing number of manufacturers are realising substantial financial and environmental benefits from the employment of sustainable business practices. Indeed, one aerospace manufacturer recently found a considerable margin for saving energy in CNC machining processes, with correct coolant selection. The OEM took advantage of a sustainable manufacturing initiative sponsored by the US Air Force and applied one of its flexible machining cells to the project. It aimed to discover just how much energy could be saved in machining a titanium 6AI-4V sample aircraft part designed with deep pockets, typical of the sector. The trial took place using a 10-year old horizontal machining centre.

Using a power meter, researchers measured the effects of various attempts to save energy during machining. They discovered that strategic choices relating to tools, coolant, programming and parameters can all combine to reduce energy use by 73 percent of what the plant's established processes would usually consume.

The Air Force funded the study to prepare suppliers for potentially higher energy costs in the future and among the main areas of focus was the effectiveness of through-tool coolant delivery.

Standard solid carbide end mills using only flood coolant were run against otherwise identical end mills that had been modified to deliver coolant through ports near the flute tips. Both methods used TRIM® MicroSol® 585 from Master Chemical which was selected against four competitor coolants following trials.

Cutting and non-cutting criteria

While tool life would be the determining factor, the chosen coolant had to address numerous secondary issues. For instance, it had to minimise mist and eliminate any sticky residue that might cause the titanium chips to adhere to the machine tool.

Each candidate fluid was run at 6 percent concentration, diluted in de-ionised water. After the machining tests were completed, laboratory tests were run to compare the fluids for these non-cutting functions along with health and safety concerns, bio-stability and sump life. Once TRIM MicroSol 585 was declared the superior option, research continued and through-tool delivery provided measurably superior tool life in multiple ways. Not only did nominal tool life improve, but the wear from flute-to-flute on the same tool was more consistent.

This consistency effectively extends the tool life advantage, because if a tool can be trusted to wear predictably, then it can be trusted to remain in-cut longer. The team's testing of through-tool coolant demonstrated tool life improvements of as much as 30 percent.

"Coolant is vital to tool life and selecting the correct chemistries will immensely improve tooling performance," says Monte Dhatt, global aerospace manager at Master Chemical. "Of course, a proper plant audit should be conducted before selecting the correct coolant for each individual application."

Through-tool coolant can be recommended for titanium when it helps with chip clearance issues. Insert-based systems that allow coolant to get very close to the cutting edge are preferred as they facilitate higher metal removal rates in face milling.

According to Master Chemical, coolant selection considerations should include the type of machine, the materials being cut, operations, cycle time, tooling type, quantity of machine tramp oil, water type (RO, DI, hardness), operator contact, foam and filtration.

"Through-tool operations typically encompass high pressure in the range of 1000–1500 psi," says Monte Dhatt. "With high pressure you want to use coolants that are low foaming and can break the foam quickly, otherwise spill-overs can occur."

"Modern machines are equipped with sensors that will stop the machine in mid-cycle when it senses a spill-over. This can be very costly as it can scrap a part in mid-cut. Typically, synthetic and semi-synthetic chemistries will provide the best foam control."

Energy savings and much more

The machining process that combined these improvements with others relating to cutting tools and programming techniques consumed 0.32 kW hr/in^3, a 73 percent reduction in energy from the way the plant machined parts before the sustainability research began. Now, as a result of these findings, various existing parts have been re-programmed for cycle time savings. Such savings provide for sustainability in a number of ways.

While the term usually implies lowering energy use, keeping a job commercially sustainable involves holding costs low enough that the part remains in production. These aims are not contradictory. The findings of the sustainability testing are particularly promising for the aerospace manufacturer, not only for energy reduction, but also for cost reduction and increased capacity resulting from cycle time improvements.

Although Master Chemical admits that before the study it did not consider energy savings specifically during its development process, the company always preaches the overall cost of correct coolant selection and coolant management.

"Under this philosophy, costs savings, including energy, are always something we can measure for customers," says Monte Dhatt. "Moving forward, this particular customer is now using TRIM MicroSol 585XT which is an upgrade to the original formula. Foam and sump life were improved to address minor shortfalls identified in the study. In fact, the success story allowed us to establish a corporate contract with the company and expand the use of TRIM MicroSol 585XT in many of its other facilities.

While it is particularly well suited to machining and grinding mixed metals, TRIM MicroSol 585XT has proven to be an exceptional coolant for cutting titanium alloys. Indeed, for another customer it eliminated a host of problems experienced with alternative fluids. These included bad smells, excessive carry-off, smoking and seal damage.

Approved by Airbus, Boeing, Pratt & Whitney (United Technologies), Bombardier and Safran, TRIM MicroSol 585XT is a high lubrication, semi-synthetic micro-emulsion coolant. It provides excellent coolant and mechanical lubricity. Fast wetting gets the fluid to the point-of-cut quickly and ensures workpiece and chips are coated thoroughly for superior corrosion protection.

Finally, it's worth addressing the issue of boron, which is typically included to assist with ferrous corrosion inhibition on parts and machine tools. Although TRIM MicroSol 585XT contains elemental boron, any boric acid has been fully reacted in the formula so there is no free boric acid which is an item of concern for some manufacturers.

Master Chemical Europe Ltd
Tel: 01449 726800
Email: info@masterchemical.co.uk
www.masterchemical.com

Q8 Brunel awarded aerospace approval

Following its recent introduction of the Q8 Brunel range, the company's latest revolution in water soluble machining and grinding fluids, Q8Oils has announced that Q8 Brunel XF 343 has fulfilled and passed the criteria for Snecma Safran 455-201-0-00-B aerospace approval.

Snecma Safran is one of the world's leading manufacturers of engines for civil and military aircraft applications; and a specialist designer and manufacturer of rocket engines for launch vehicle and satellites.

Commenting for Q8Oils, product manager for metal manufacturing, Stuart Duff says: "This is a significant achievement for Q8 Brunel XF 343 and complements the success we are delivering with the whole range of Q8 Brunel soluble metal working products."

Independent qualification testing of Q8 Brunel XF 343 was carried by the Bureau Veritas Laborotoires and included stress corrosion tests on titanium alloy, hot corrosion testing for aluminium and nickel alloys and loss of mass tests for aluminium

alloy. The approval from Snecma Safran extends the opportunities for the Q8 Brunel range beyond Europe and into North Africa, China, USA and Mexico. The approval also confirms the capability of Q8 Brunel XF 343 and opens other opportunities within the Global aerospace sector.

Q8 Brunel XF 343 is designed for milling, turning, drilling/deep-hole drilling, threading, reaming and broaching operations. It has been developed specifically for the aerospace sector for the machining of aerospace aluminium alloys including 7000 series, titanium alloys, Inconel and copper alloys.

Stuart Duff goes on to say that this new Q8 Brunel range is so advanced that it has the potential to reduce the operating costs for every customer:

"With the introduction of Q8 Brunel, we have reinvented the way that the industry approaches soluble metal working fluid chemistry by developing a completely new approach that focuses on three key customer requirements: product performance, environmental protection and operator health."

All Q8 Brunel grades comply with TRGS 611 and are suitable for use in hard and soft water where they display low foaming properties. They are ideal for high speed machining applications and the demanding fluid delivery pressures found on modern machine tools, and it is here where significant tool life improvements are achievable.

Q8Oils
Tel: 0113 236 5204
Email: naomi.palmer@Q8Oils.com
www.Q8Oils.co.uk

Chrome is the new black

Seco has created an important stepchange with the introduction of its new, next generation Duratomic® insert technology for all steel turning applications.

When a company designs a new product that's so revolutionary that it's not just well received by the market but, because of its productivity-enhancing features and characteristics, becomes the virtual industry standard overnight, there's a danger that complacency can set in and further product developments and refinements can be put on the back burner, and that over time the product's market-leading position can be lost.

But that's definitely not the case with Seco's Duratomic insert technology, a technology first introduced in 2007 and that rapidly became the number one choice for precision component manufacturers turning steel and stainless steels ever since.

Over the last eight years, extensive research and development into improving the performance attributes of Seco's Duratomic technology have taken place, resulting in the creation of three new Duratomic grades which were launched into the market simultaneously from April 2015.

The new grades TP0501, TP1501 and TP2501 are tougher and more wear resistant than their predecessors, and the improvements made, some of which are immediately visible to the naked eye and some which are not, will dramatically improve customers' productivity, process reliability and cost-efficiency.

Seco's recently introduced new, next generation Duratomic insert technology for all steel turning applications

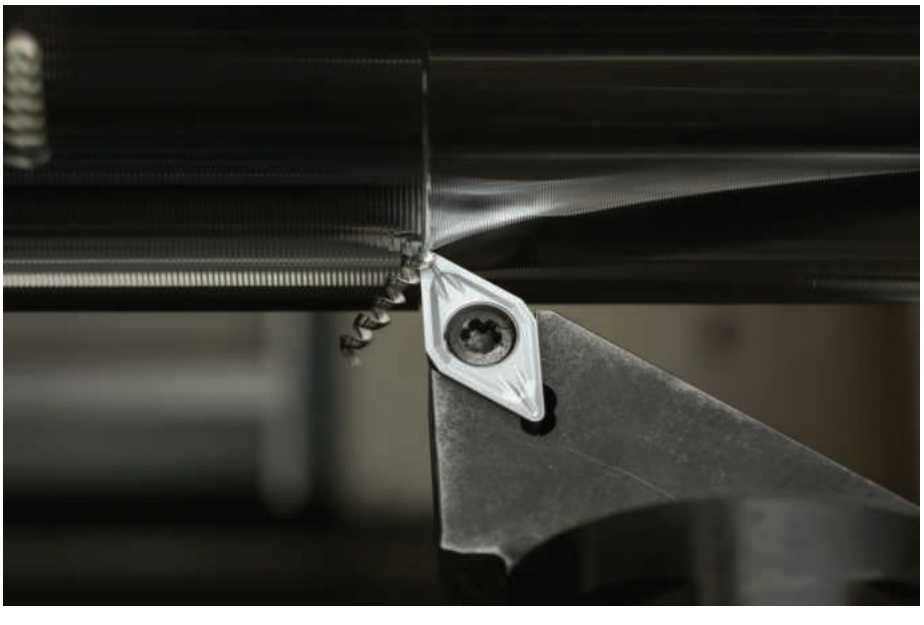
The right grades at work

A superficial glance at Seco's new Duratomic inserts won't reveal that much. Sure they all have a new bright chrome-coloured coating but the key issue for customers is to make sure they select the right grade (there are three in total) for the right application:

TP0501 has been designed for the high-speed machining of High Alloy steels (SMG P3; P5; P7) where stable cutting conditions exist. The grade delivers excellent cutting performance and low insert wear when machining at high speeds and feeds with or without coolant.

TP1501 has been designed for the machining of Low Alloy steels (SMG P2; P4; P6 and SMG K4), and delivers excellent cutting performance and low wear when machining with medium to low speeds and feeds.

TP2501 has been designed for the machining of a wide range of steels where unstable machining conditions exist, and where heavy-duty, interrupted cuts are the norm.



Duratomic under the microscope

Seco's R & D engineers are clever and smart, because, although using Aluminium Oxide (Al2O3) as an insert coating isn't that earth-shattering a development, controlling and reconfiguring the material's molecular structure is.

Back in 2007 the result of this painstaking work resulted in the creation of a new coating technology with improved mechanical properties, and increased thermal and chemical inertness.

Seco gave a brand name to this new coating technology. They called it Duratomic. Manufacturers involved in turning steel precision parts will no doubt be aware of Seco's Duratomic TP0500, TP1500, TP2500 and TP3500 grades. However, because product development and product

improvement are a way of life at Seco, it's no surprise that the company's commitment to continuous improvement has resulted in the availability of the next 'big' thing in turning technology.

The new Duratomic inserts have a lot of things going for them, including:

Used Edge Detection
Duratomic inserts' chrome-coloured exterior helps customers easily detect whether an insert's edge is worn or not and, as a consequence, whether the insert in question can still be used or will need to be replaced.

Because wear scars are immediately visible, there is less likelihood that customers will discard inserts because they believe the edges to be worn, and that, quite simply, means less waste and reduced operational costs. Conversely it also means that inserts with worn edges will be easily recognised too.

Comprehensive turning steel solution
With three new Duratomic grades being made available simultaneously, customers can be confident that there's a new Duratomic grade that's best suited to meet their steel turning requirements. Although the headline news about Duratomic is focused on the three new grades, it's worthwhile remembering what that means in reality.

Each of the new grades (TP0501, TP1501 and TP2501) is available in a range of different insert sizes, with different geometries and with different chip-breaker configurations.

In total that's over 1000 different Duratomic insert types now available for customers.

New grade design
When we talk about the three new Duratomic insert 'grades' it's important to remember that a grade comprises a number of elements which includes the insert coating, the insert substrate and insert-specific performance attributes.

From a coating perspective, the three new Duratomic inserts (TP0501, TP1501 and TP2501) each have different Aluminium Oxide (Al2O3), while Titanium Carbo-Nitride (Ti CN) combinations give each insert grade its particular (application-specific) performance characteristics and strengths.

With TP0501 the Aluminium Oxide layer is thicker than the Titanium Carbo-Nitride layer, whereas with TP1501 the opposite is the case. In TP2501 there is a balance in thickness between the Aluminium Oxide and Titanium Carbo-Nitride layers.

The new Duratomic grade chain means that Seco offers the complete steel turning solution whatever the application.

Edge reliability
New Duratomic inserts have tougher edges which are less prone to wear and increase process reliability. They also reduce the effects of 'chip hammering' and deliver a reliable solution when performing intermittent cutting operations.

Mike Fleming, Seco's sales & marketing manager enthuses: "The new Duratomic launch is the biggest in the company's history. By introducing a complete grade chain simultaneously we can confidently say to customers that whatever their steel turning requirements there's a new Duratomic grade that fits the bill.

"Since being introduced in 2007, over 100 million Duratomic inserts have been sold worldwide. We expect the new, next generation Duratomic inserts to be at least, if not more successful than their predecessors. Duratomic is big news for us and for customers. The launch, in April 2015, will see three new turning grades (for all steel turning applications) being introduced simultaneously into the global market and is the biggest product launch ever in Seco's history."

Seco Tools (UK) Ltd
Tel: 01789 764341
Email: mike.fleming@secotools.com
www.secotools.com

A real page turner

The third edition of Seco's customer magazine 'Making the Grade' with a special six page feature on the company's new next generation Duratomic insert technology launch, is out now.
This edition, focused on continuous improvement within Seco, contains specific features on 'MY PAGES', a new, powerful and simple to use digital portal designed to provide customers with fast and easy access to Seco's product information, cutting data and test reports.

The edition also includes: an update on the company's new Steadyline range of anti-vibration tool holders; a review of Seco's highly successful 'Inspiration through Innovation' Open House that took place last year, the format of which will be replicated for the 2015 event from September 23rd–24th 2015; an insightful article on LIFE (Little Improvements From Everyone), an innovative and comprehensive internal continuous improvement programme being introduced soon.

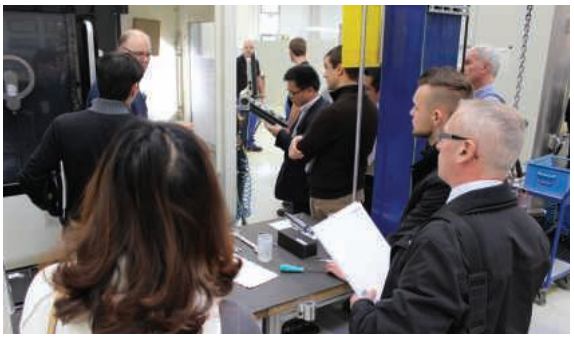
Pride of place in Making the Grade Volume 3 of course goes to Seco's new, next generation Duratomic insert technology, with a special six page feature celebrating its launch.

'Making the Grade' is available in hard copy and digital formats. It can be viewed online at **www.secotools.com/static/uk/TheGrade/2015_03/index.html** while hard copies are available from Nicki Adams at Seco Tools UK.

Cutwel & Benz shaping technology

Cutwel recently sent two members of its technical team to visit one of its major toolholding suppliers, Benz in Haslach, Germany. The visit was to the main Benz factory and provided valuable insight, knowledge and work experience within the metal and wood (composite) industries with some hands on training. At the conference, there were a total of over 40 global participants from all over the world including delegations from USA, Taiwan and China.

The experience will in turn help increase sales of Benz products via Cutwel within the UK and continue the growth that both companies have experienced in recent times. Cutwel has supplied angle heads by Benz for some time now. However, while topping up their knowledge on current products they also experienced new products to the Benz range, such as the Benz LinA broaching units for CNC lathes and machining centres. It is a simple yet highly effective system which works as a driven tooling unit and can be used on almost any CNC lathe or machining centre with live tooling.



The major benefits of the Benz LinA highlighted during the conference were the efficiency of one hit machining to reduce bottle necks and a highly economic way to machine different profiles. All this plus the cost-effectiveness of the system with its low cost investment and ability to save energy and resources makes this new system perfect for push type aggregates.

Numerous types of machining can be done to make torx, splines, gears, keyways, hexagons and sprockets. Benz also supplies an individual broaching tool which can be adapted to most CNC machining centres.

Neither tool requires any Z-axis programming, while reducing machine tool loads, preventing machine tool wear and preserving the machine tool bearings. No special programming is required.

You can gain efficiency through innovation with the Benz X-line Crown Technology, giving you: higher speed rpm, higher transfer torque; compact aggregates with less wear parts; increased system rigidity by using optimised application of bearings; longer durability of cutting edge; longer time between maintenance; rotary feed through: for pressure up to 100 bar and rpms up to 15.000 1/min. Useable for all methods of modern manufacturing and capable of unrestricted dry running.

The precision torque arm stop guarantees repeatability when tool changing and prevents misalignment. This gives extreme positional accuracy for the cutting tool, which in turn improves workpiece surface finish and increases tool life. Depending on the application, an additional 3 point support system can be built into the aggregate allowing for heavier machining operations. This also allows you to optimise the full power gear transmission system.

Cutwel Ltd
Tel: 01924 869 610
Email: sales@cutwel.net
Or visit www.cutwel.co.uk to buy online now.

No Time for ~~Imitation~~ Look Alikes!

Don't Settle for Less
Use ISCAR's Innovative Products

SUMOCHAM IQ

No Time for Downtime!

Double Margin
Drilling Heads for
Premium Surface Finish

Drilling Heads for
CFRP and **Titanium**
CFRP Laminates

Exchangeable
DCN Drilling Heads for
General Applications

Flat Bottom,
Self-centering Heads,
for ISO P/K Materials

Enhanced **Self-centering** Ability,
Premium Surface Quality
for ISO P/K Materials

Machining Intelligently

ISCAR HIGH Q LINES

Member IMC Group

ISCAR

www.iscar.com

New trochoidal milling strategies literature from ITC/WIDIA

As machine tools increasingly improve with stronger high-torque motors, multi-axis spindles and better rigidity plus the ever improving machining strategies of CAD/CAM systems, Industrial Tooling Corporation (ITC) has now responded by introducing high-speed trochoidal milling strategies and cutting tools from the WIDIA-Hanita solid-carbide end mill brand.

When applied correctly, Trochoidal milling minimises changes in the chip load and achieves high and constant feed rates by commonly employing a low radial depth of cut with high axial depth of cut. It can save significant time and money by achieving higher speeds and feeds while greatly reducing machining loads on the cutting tool.

WIDIA product manager, Mike Sperhake explians: "There's been an evolution of CAD/CAM solutions addressing the need of customers machining high-temp alloys. These CAM solutions can create machining programs that improve tool conditions. They will keep forces and chip thickness constant. As we design tools for machining high-temp materials, it was easy for us to design products for these improved conditions."

The first results were WIDIA's VariMill I solid-carbide end mills, followed by the VariMill II and VariMill II long series, which have proven particularly successful among ITC customers. These tools optimize modern advances in CAM software and machine tool dynamic applications without losing the capability to work in weaker environments.

"WIDIA's newest solution, the VariMill II ER, is a brilliant add-on for customers using the latest CAM programs," adds Mike Sperhake.

Like the VariMill II, the VariMill II ER end mills are engineered with five unequally spaced flutes. However, unlike with the existing VariMill product line, the eccentric relief (ER) available with this new tool's cutting edges provides greater edge strength and enables higher feed and metal-removal rates. The VariMill II ER end mill has a different taper core than the VariMill I and VariMill II. Stability is thus increased for a robust performance, while it has also been designed for centre cutting. VariMill II ER is also the first off-the-shelf tool to offer SAFE-LOCK™ by Haimer. This provides excellent stability, eliminates the 'pull-out' risk and makes the tool more stable and concentric, overall.

Advanced toolholding

The right chuck is also vital for trochoidal machining strategies to maximise tool life and ensure workpiece surface quality. With a more compact and stable design, featuring a 40 percent thicker front wall cross-section, WIDIA's HydroForce HT™ provides the increased rigidity necessary for improved cutting parameters and better results. Clamping force is up to three times better than regular hydraulic chucks whilst delivering improved vibration dampening. The run-out is three microns at 2XD overhang with a balance quality of G2.5 achieved at speeds up to 25,000 rpm.

More cost-effective than expensive thermo shrink-fitting operations and up to four times more clamping force when compared with collet chucks; HydroForce HT is a cost-effective universal chuck solution that simplifies inventory while maximizing tool life and machining results.

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

Workholding solutions in the pipe from Leader

Workholding specialist Leader Chuck Systems now offers an extensive range of oil country chucks from Polish workholding manufacturer, Bison-Bial. The Tamworth-based company is a distributor for the sale of Bison's extensive cost-effective product range, which includes pre-sales technical support, stocks of popular items and spare parts being held at Leader's dedicated logistics facility in Leamington Spa.

Industry-specific products like the oil country chucks designed and produced by Bison provide focused workholding solutions, and highlight how the company listens to its customers and develops robust and efficient answers to the manufacturing problems they face. These high quality oil country chucks are ideally suited to the oil, gas and petrochemical industry sectors for customers with demanding workholding applications. The extensive range of large through-hole chucks provides a solution for any manufacturer turning long, large diameter parts.

Like all chucks from Bison, the oil country chucks are made from forged steel or cast iron. And, all of the working surfaces are induction hardened and ground to ensure that the finished product is a rugged chuck that meets high sliding, stability, and durability parameters that customers have come to expect from the company.

All of the 3-jaw self-centring chucks can work individually or in pairs, mounted on opposite sides of the lathe spindle, ensuring the same vertical position of the jaws in both chucks. This allows the accurate turning of very long components such as pipes.

The cast iron bodied Type 3295 3-jaw self-centring chuck offers a large through-hole compared to the outside diameter of the chuck body. Chuck body sizes are 400, 500, 660 and 800 mm diameter with the ability to hold parts from 168 up to 566 mm diameter. Maximum operational speeds range from 500 rpm down to 200 rpm for the largest chuck.

Providing increased rigidity and greater wear resistance, the steel bodied Type 3597 provides higher gripping forces and can withstand increased machining forces. This allows the chuck to operate at between 2,500 rpm and 700 rpm for the 315 and 800 mm diameter chucks respectively, with the bore through ranging from 145 to 460 mm diameter.

Also employing a steel body, the extensive heavy-duty Type 3515 HD range supports through-hole, face and internal fixturing for all turning applications. Available in 400, 500, 630 and 800 mm diameter the chucks can hold parts between 25 and 800 mm diameter. The gripping force ranges from 6,200 daN for the smallest chuck up to 9,000 daN for the largest, and the maximum operating speed is 1,400 and 600 rpm respectively.

All of the heavy-duty 4-jaw independent chucks feature forged steel bodies and can work individually or in pairs, mounted on opposite sides of the lathe spindle, ensuring the same vertical position of the jaws in both chucks. This allows high gripping forces and the accurate turning of very long components such as pipes, flanges, valve bodies and long prismatic parts.

Available in an extensive range of sizes the Type 4317 HD can hold parts between 45 and 1250 mm diameter with a gripping force of up to 5,000 daN per jaw. Through-hole sizes go from 136 mm diameter for the 415 mm diameter model up to 530 mm diameter for the 1 m diameter version.

Type 4347 HD provides a high precision workholding solution for manufacturers that require increased gripping accuracy to generate tight tolerance parts. Available as 415, 500 or 710mm diameter models, the chucks can accurately hold parts between 45 and 710 mm diameter. While the 1000 or 1250 mm diameter Type 4307 HD has a gripping range between 50 and 1,250 mm diameter and a 200 mm diameter through-hole on both sizes.

Supplied as standard with hard master jaws all chucks can be specified with soft or hard top jaws. And, most models feature reversible jaws to accommodate internal and external chucking operations. Mountings are available for standard or special spindles.

Each chuck is thoroughly inspected before the product leaves the factory. With checks for gripping force and run-out to ensure accuracy in order to meet Bison's quality standards that exceed all DIN standards. Only then is the chuck given the Bison label of quality.

Leader Chuck Systems Ltd
Tel: 01827 700000
Email: mjones@leaderchuck.com
www.leaderchuck.com

Speed and precision

Power your way to maximum productivity with Chick System 5 bespoke workholding packages.

- Fully utilise your equipment's cutting envelope
- Faster set ups and change-overs
- Custom engineered to a wide range of CNC machines
- Fully interchangeable with other Chick workholding products
- Single and multiple workpiece solutions.

Chick workholding; more throughput, more competitiveness, more payback.

1st MTA. Maximising the returns on your machine tool investments.

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

Fax: 0800 783 0517 **www.1mta.com**

1st MTA MACHINE TOOL ACCESSORIES

SCHUNK takes to the road

SCHUNK, a leading manufacturer of clamping and gripping products, is taking to the road by conducting a 'road show' with its popular robot accessory product range. The road show will be staged at a variety of venues around the UK between the 18th and 21st of May.

The road show will include quick-change systems, rotary feed-through units, collision and overload protection devices, force sensors, compensation units, insertion units and handling units. The road show event has been devised to enable manufacturers and engineers to come along to discuss their fields of application in detail with our experienced product advisors without the time consuming visit to an exhibition.

The schedule for the 'road show' will see the SCHUNK team visit the Bristol Robotics Laboratory on the 18th May, the Daresbury Park Hotel in Warrington and the AMRC in Sheffield on the 19th May and then to Washington on the 20th. The tail end of the week will see the SCHUNK team demonstrate its product lines at the Holiday Inn Hotel in Milton Keynes on the 21st May with the show finishing at the Manufacturing Technology Centre (MTC) in Coventry on the Friday 22nd of May.

SCHUNK UK's managing director, Martin Kent says: "The purpose of this event is to take the latest technology to the end user and provide a convenient setting for the engineer. We appreciate that engineers are increasingly busy and can rarely afford time from the office or shop floor to visit a trade show that may be a long way from the office. By taking our robotic accessory range on the road, we are giving companies an opportunity to witness the latest technology on their doorstep. This series of events is open to anybody that has an interest in robotic applications and further details can be obtained either via our area sales managers or by calling our office on 01908 611127."

SCHUNK extends 'all-rounder' for stationary workholding

The SCHUNK KONTEC KSC centric vice is an all-rounder in the field of stationary workholding that has made a significant impact since its introduction. No matter if you are conventionally clamping, clamping at depth for 5-sided machining, holding moulded parts or even plates or saw cuts that are short, the SCHUNK KONTEC KSC is quickly adaptable. Now this revolutionary system has been extended with the introduction of the KONTEC KSC 125.

The new SCHUNK KONTEC KSC 125 demonstrates remarkably high precision and process reliability making it a must have for any machine shop. A pre-clamped and scope-free centre bearing (ball bearing) and a particularly adjusted slide ensure a repeat accuracy of +/-0.01 mm. This impeccable system allows precise machining of the first and second side of the clamping system.

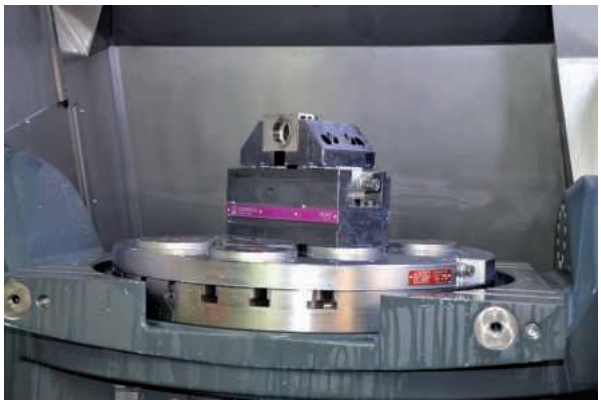
An integrated chip flow and a specially protected spindle ensure maximum process reliability for this impressive new system. The centric vice is also suitable for automated machine loading as it can be used in every pallet storage system as an affordable solution. In order to minimise setup times, the SCHUNK KONTEC KSC 125 can be combined with the SCHUNK VERO-S quick-change pallet system. The all-rounder is available with a jaw width of 125 with two base body lengths of 160 or 300 mm. These deliver a clamping force of 35 kN. The clamping width amounts up to 303 mm, depending on the system jaw and base body length.

SCHUNK, formed in 1945, is a family owned business. The worldwide "SCHUNK family" is committed to the complete satisfaction of customers, where integrity and respect are key words in the daily business of the company.

SCHUNK Intec Ltd has been operating in the UK market as a wholly owned subsidiary since 1998. The great demand for clamping and automation products, as well as the requirement for first hand advice and assistance directly to the UK market, led to the natural decision to integrate the company SCHUNK Intec Ltd directly in the UK market

SCHUNK Intec Ltd
Tel: 01908 611127
Email: info@gb.schunk.com
www.gb.schunk.com

New compact 5-axis vice from Roemheld



Roemheld has just launched a new 5-axis vice designed to complete its range of 5-axis clamping components. The new, mechanically operated MC125 series combines a compact design with large clamping strokes making it ideal for use in 5-axis clamping applications.

The compact design of the MC125 benefits from a sturdy hardened steel base and the adjusting spindle being arranged in the upper part of the housing. This ensures that a high rigidity of the workholding system is maintained resulting in high precision and accuracy of the manufactured components.

The compact design allows excellent accessibility of tools to the workpiece. Collision-free tool paths and 5-sided workpiece machining can be achieved with short, standard tools. There are three versions of the MC125 available for maximum flexibility alongside an extensive range of jaws.

With a jaw width of 125 mm, a clamping force of 35 kN and a clamping stroke of 100 mm, the MC125 series offers concentric clamping that is ideal for use with 5-axis machining centres. In addition, this 5-axis vice is also compatible with zero point mounting systems as there are three location threads for draw-in nipples on the bottom of the housing.

Roemheld can also offer new workholding innovations in the positioning and clamping of components, designed to provide substantial cost per part savings. Roemheld products can help drive competitiveness, by adding value to the manufacturing of engine parts, pressing of body parts and the assembly of motor vehicles.

Roemheld offers application solutions for a wide range of industries including automotive, aerospace, medical, plastics and rubber, food and packaging.

Roemheld is committed to researching and developing products designed to meet not only the demands and expectations of today's discerning buyer, but also emerging markets and applications. Through continued improvement of products and services, the Roemheld Group intends to remain an innovator at the forefront of technology providing 'All your workholding needs from a single source'.

Roemheld UK Ltd
Tel: 01462 459052
Email: sales@roemheld.co.uk
www.roemheld.co.uk

Trueborer is quick and accurate

Available from Thame Workholding, the UK cutting edge workholding specialist, Trueborer is a jaw boring-turning adjustable ring for power chucks that has been specifically designed to be used to bore, turn or grind jaws very accurately on power chucks under the same clamping pressure required to hold the workpiece.

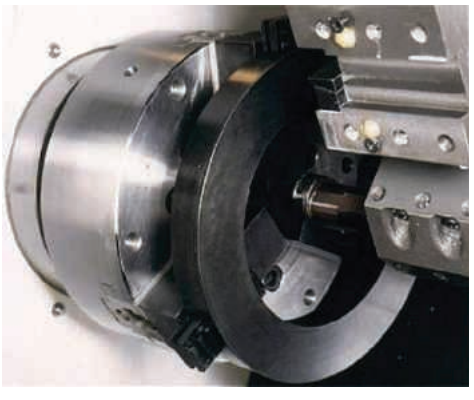
Designed for creating perfectly concentric bores on hard or soft jaws, Trueborer is infinitely adjustable within its specified clamping range. This allows fine adjustment for minimal skimming of jaws, which can also be through bored in one operation resulting in better T.I.R (total indicated run out) of any machined parts.

Sales director, Maurice Day says: "For any machine shop that has to regularly setup chucks for the production of accurate components the Trueborer offers a number of advantages. First, the fine adjustment saves jaw usage as only fine skims are required to achieve the accuracy required; secondly it reduces the time wasted looking for, or making, turning clamping rings and, finally, one Trueborer can be used on many chucks."

Trueborer is available in three sizes, ES16 covers chucks from 125 to 200 mm diameter at a clamping force of up to 8,000 daN, ES25 is for chucks between 250 and 315 mm diameter with a clamping force of 10,000 daN, while the largest ES42 is ideal for chucks from 400 to 600 mm diameter and supports clamping forces up to 13,000 daN.

"Any investment made in a highly accurate machine tool can be lost simply because the chuck-to-workpiece interface is not optimised. The Trueborer is the simplest and most cost-effective way of ensuring this and that the accuracy is maintained," Maurice Day concludes.

Originally established in 1946, Thame Workholding specialised in the manufacture of soft jaws. Over the years the company has developed and expanded its range of TEC branded chuck jaws into one of the most comprehensive in the world. These are produced at its extensive manufacturing facility in Buckinghamshire, along with bespoke manual, hydraulic and pneumatic fixtures. As a full-service workholding supplier, the company also provides pre- and post-sales support for its principals: Lang Technik, Samchully and Witte.



Thame Workholding
Tel: 01844 208050
Email: mauriceday@thameworkholding.com
www.thame-eng.com

Ondrives gears-up for quality with FARO

Chesterfield-based Ondrives Ltd is a precision manufacture of gears, gearboxes, bearing housings and a wide range of associated products. In addition to supplying a large UK customer base, the company's output is distributed worldwide through a network of agents.

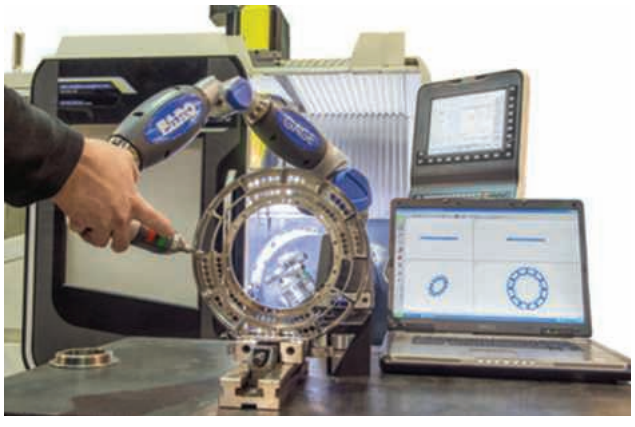
Ondrives supplies an all-inclusive range of standard, off-the-shelf products featured in its comprehensive gear product catalogue and also designs and manufactures 'specials' to customers' individual requirements. Through the use of the company's state-of-the-art design facilities and machine tools, Ondrives' skilled staff are able to design and produce parts ranging in size from just a few millimetres to components of one metre plus.

Over the past decade, the innovative business has undergone a period of intense development, resulting in it now supplying a significantly expanded range of unique, specialised products. By refining and designing a range of new, innovative products, such as gearboxes and the company's latest high-quality precision gears range, Ondrives has been able to remain at the technological forefront of the global gear industry and to continue to deliver the best possible products to its customers.

Ondrives' on-going policies of employing highly proficient engineers, regularly up-dating its staff's skill levels and making frequent strategic investments in the most up to date design, production and inspection technology, helps to ensure that premium quality products are delivered to an ever expanding customer base.

To help ensure the continued high quality of its output, Ondrives uses a range of advanced inspection aids in its final inspection department, including a state-of-the-art gear inspection machine, a large capacity CNC coordinate measuring machine and an optical measuring machine. In addition, all production personnel are supplied with the best available metrology equipment to allow regular in-process checks to be made. As part of Ondrives' pursuit of continuous improvements, the company recently purchased a FARO Gage measuring arm to help further increase its shop-floor measurement capabilities.

Through continuous investment and development, Ondrives has established an excellent global reputation. Much of this reputation has been built on the outstanding quality of our products. Our all-embracing inspection procedures and material traceability checks cover goods-inward, though all stages of production and on to final inspection.



"Prior to final inspection, our production operatives take responsibility for the quality of their own output and have access to a wide range of premium measuring instruments. To help expand the range of accurate measurements our operators are able to make whilst components are located in the machines tools, we recently purchased a FARO Gage measuring arm.

"Not only has our new FARO product improved the accuracy and repeatability of our on machine checks, it allows us to correct errors at source. The Gage's ease-of-use has considerably speeded-up our in-process inspection tasks and has resulted in reduced machine tool down-time and increased productivity.

"As the Gage is so user- friendly and intuitive, our operators who underwent the original product training have been able to explain its use to all other relevant colleagues. Now, each of our operators has become proficient in the Gage's use. Given its popularity with our operators and its highly portable nature, the Gage is now used throughout our facility.

"In addition to the inspection related use the FARO Gage was purchased for, since issuing it to the shop-floor we have found many other applications, such as performing dimensional checks on our jigs and fixtures and performing important build-up checks in our assembly area."

In the past, machine shop inspection required the removal of a component from a CNC machine to a temperature controlled inspection area for the dimensional inspection of the part. Throughout the world, many companies have ended this time-consuming and expensive routine by the use of portable CMMs, such as the FARO Gage. The portability of FARO's advanced 3D metrology tools enables efficient on-machine and in-process inspections. Consistent, accurate measuring routines can now be undertaken quickly, on the machine producing the parts.

In addition, measuring arms such as the FARO Gage can quickly capture a prototype part's, or firstoffs geometric features and compare them to nominal data in a CAD file, ensuring that they meet all engineering, design and specification requirements and adhere to first article documentation requirements.

The FARO Gage measuring arm, as purchased by Ondrives, is an accurate 3D gauge with a spherical working volume of 1.2 m (4 ft) and is an industry leader in portable CMMs. Ending industry's reliance on expensive and difficult to use fixed CMMs, the FARO Gage provides high accuracy levels, improved measurement consistency, reduced inspection times, and the ability to generates automatic reports. Designed specifically for use by shop floor personnel, the FARO Gage can be set up in seconds and allows shop-floor personnel to measure parts and assemblies easily, quickly, and accurately.

The flexible, multi-use nature of the Gage allows inspection areas that previously contained multiple measuring instruments to be decluttered through the use of a single tool. It can be used to replace a wide range of traditional measurement tools such as calipers, height gauges and micrometers, whilst its intuitive metrology software is able to quickly create custom routines for repeat part measurements.

FARO Technology UK Ltd
Tel: 024 76 217690
Email: uk@faroeurope.com
www.faro.com

LEITZ REFERENCE HP 7.7.5

The small CMM with huge potential

Offering an all-round solution for the quality room or production environment, Leitz Reference line high-accuracy coordinate measuring machines are the versatile and efficient option for a vast range of applications. The new Leitz Reference HP 7.7.5 features the proven technology of the line in a compact footprint – ideal for inspecting small parts with tight tolerances.

www.hexagonmetrology.co.uk

HEXAGON
METROLOGY

Double the scan rate

Upgraded ROMER Absolute Arm laser scanner speeds up inspection

Hexagon Metrology has announced the release of RS3, an upgrade package delivering a dramatic performance improvement for the ROMER Absolute Arm with integrated laser scanner. The new RS3 integrated laser scanner offers more detailed 3D point clouds with significant time savings

Available with all new ROMER Absolute Arm SI portable measurement systems or as an upgrade for existing customers, the RS3 doubles the scan rate of the previous RS2 integrated scanner, enabling users to inspect like-for-like parts in approximately half the time. Point cloud density has also increased, resulting in a maximum acquisition speed more than nine times that of the RS2 model, giving faster, more detailed scanning without compromising on accuracy. Users also benefit from the latest RDS proprietary software, featuring SMART technology which allows real-time monitoring of the arm and will reduce the mean time to repair.

Combining non-contact scanning and tactile probing, the ROMER Absolute Arm with integrated scanner is a multi-purpose portable measurement system suitable for point cloud inspection, product benchmarking, reverse engineering, rapid prototyping, virtual assembly and CNC milling applications. Scanner and probe measurements can be made seamlessly in one software session while the RS3 scanner guarantees the quality and ease-of-use that customers have come to expect since the launch of the ROMER Absolute Arm in 2010.

"The ROMER Absolute Arm with integrated scanner is already well-known for delivering excellent scan results even on tricky surfaces like carbon fibre and steel, but the performance improvement of the RS3 compared to the previous RS2 model is really quite extraordinary," says Stephan Amann, product line manager at Hexagon Metrology. "Existing systems can be upgraded very quickly without returning the arm to the factory, so customers will see immediate benefits in terms of speed and usability."

As of 20 April 2015, all new units of the ROMER Absolute Arm with integrated scanner will be supplied with the RS3 scanner as standard. Customers who wish to upgrade an existing RS2 system to the RS3 integrated scanner should contact their local Hexagon Metrology service centre.

Hexagon Metrology offers a comprehensive range of products and services for all industrial metrology applications in sectors such as automotive, aerospace, energy and medical. We support our customers with actionable measurement information along the complete life cycle of a product, from development and design to production, assembly and final inspection.

With more than 20 production facilities and 70 Precision Centres for service and demonstrations, and a network of over 100 distribution partners on five continents, we empower our customers to fully control their manufacturing processes, enhancing the quality of products and increasing efficiency in manufacturing plants around the world.

Hexagon is a leading global provider of design, measurement and visualisation technologies that enable customers to design, measure and position objects, and process and present data.

Hexagon Metrology plc
Tel: 0870 4462667
Email: enquiry.uk@hexagonmetrology.com
www.hexagonmetrology.com

RENISHAW
apply innovation™

A new lease of life

Renishaw's one-stop retrofit service offers:

- Direct hardware and software support from Renishaw
- Unparalleled choice of 3 and 5-axis sensor systems
- Rapid exchange service on all system elements
- UKAS accredited calibration
- Renishaw scales, readers, thermal compensation and reference sphere

More capability, more throughput, more confidence.

For further information please visit www.renishaw.com/cmmretrofit

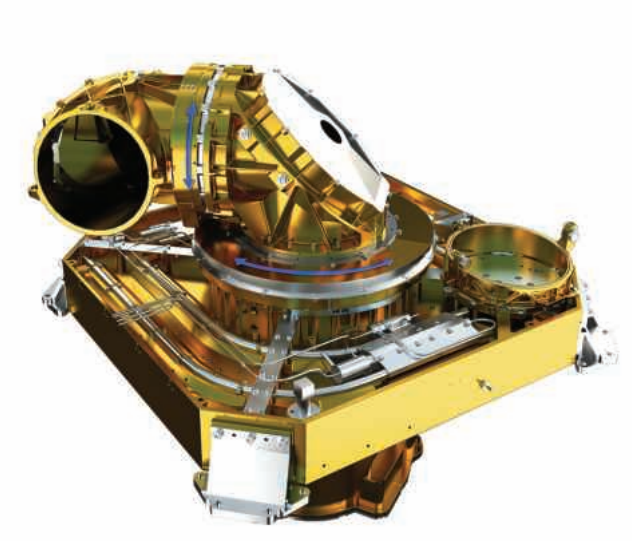
Renishaw plc New Mills, Wotton-under-Edge, Gloucestershire GL12 8JR United Kingdom
T +44 (0)1453 524524 F +44 (0)1453 524901 E uk@renishaw.com
www.renishaw.com

Renishaw's new pioneering encoder boldly goes into space

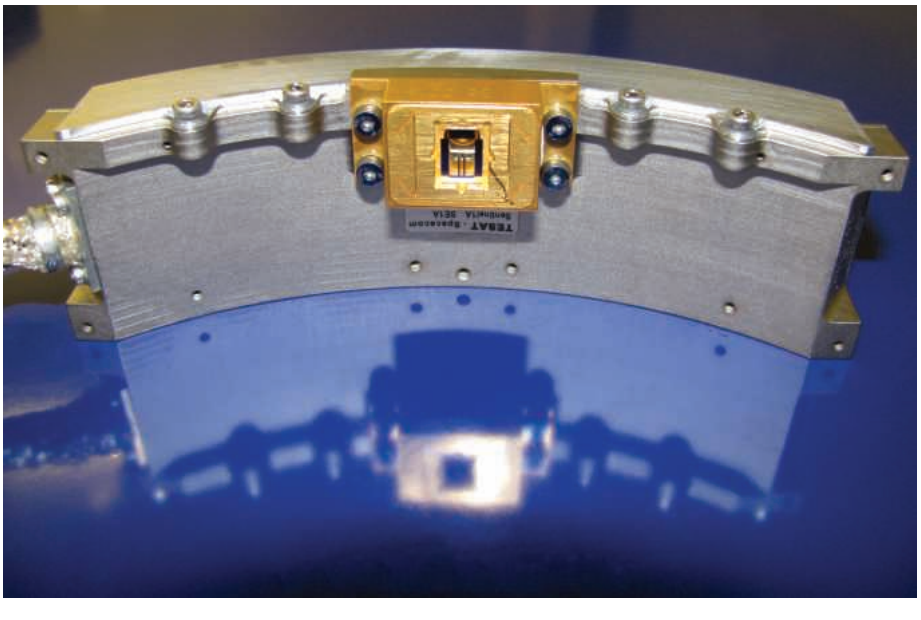
Renishaw, the global metrology specialist, has reached another milestone in the application of its technology by deploying products in space for the first time. The European Space Agency's Sentinel-1A satellite was launched from the European spaceport in Kourou, French Guiana, with Renishaw's new space-encoder technology installed on the advanced Optical Communications Payload (OCP) of the satellite; part of a revolutionary inter-satellite laser communication system. The OCP provides an optical Low Earth Orbit (LEO) to Geostationary Earth Orbit (GEO) communications link via a pair of Laser Communication Terminals (LCT) by space telecommunications company Tesat-Spacecom (Tesat) of Backnang, Germany. The GEO LCT is currently accommodated on Europe's AlphaSat.

Space is an exceptionally harsh environment that demands encoder performance far in excess of normal operational limits. Space-qualified components also need to be inordinately reliable as repair while in orbit is economically unfeasible and so the selection of qualified technology is an arduous process. As a world leader in precision engineering technologies, Renishaw succeeded in adapting to the ultimate challenges of space-borne applications by drawing on this significant expertise. Tesat required a new rotary (angle) encoder for the coarse pointing assembly (CPA) of its 2nd generation LCT, which is essentially a telescope with coherent receiver and transmitter hardware. The space-qualified encoder was developed in collaboration with Tesat and shares much of its core technology with Renishaw's proven TONiC™ encoder range. It is designed to withstand operating temperatures from 40 °C to +80 °C, bombardment by solar / cosmic radiation and high mechanical loads consistent with rocket launch. Radiation hardening, combined with Renishaw's extremely robust optical detection principle, has resulted in the encoder achieving qualification for an impressive 15 years' service in a Geostationary Earth Orbit (GEO) environment.

Renishaw and Tesat's advanced space-encoder is installed on both rotary axes of the CPA and will be integrated into the LCTs of a number of future space platforms including the Sentinels, the European Data Relay Satellites EDRS-A and EDRS-C. The encoder system consists of a stainless steel ring with ablated graduations on the periphery and a specially adapted readhead. INTRAC™ reference marks are directly embedded into the incremental channel and arranged so that the distance between any two marks is unique. This means that only a small rotation is required before the absolute position is known. Another advantage is that there is no contact between the rotary ring and static readhead, which eliminates friction and, hence, hysteresis error as well as potential wear or any need for lubrication. The system achieves a resolution of less than 0.5 µrad, with a short-range error of <0.5 µrad and long-range error of <5 µrad.



Renishaw's new pioneering encoder boldly goes into space



This development was funded on behalf of the German Aerospace Center (DLR) by the Federal Ministry of Economics and Technology based on legislation by the German Parliament in the framework of project 50YH0932 of TESAT with Renishaw as subcontractor.

Follow the link at:
http://www.esa.int/Our_Activities/Observing_the_Earth/Copernicus/Sentinel-1/Laser_link_offers_high-speed_delivery

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

World premier from Klingelnberg at Control 2015

Year in and year out, the world's leading trade show for quality assurance, Control in Stuttgart, provides the perfect backdrop for innovations. At this year's event Klingelnberg, a leading manufacturer of precision measuring centres, will unveil the P 16, a new solution for efficient measurement of small components. From 5th to 8th May, the system supplier will once again present a round of talks at its stand in Hall 1/1418, which will cover its entire range of products and services, from innovative technologies to first-class service.

Klingelnberg will present its entire range at Control 2015. The five big segments: "gear measurement," "shop-floor measurement," "dimension, form, and position measurement," "measured value analysis," and the segment covering Klingelnberg's wide range of services, will together share a total presentation space of 220 m^2.

With the help of the measuring machines on exhibit, visitors will get "hands on" experience and find out just what sets Klingelnberg technologies apart from the rest. A product novelty making its debut appearance this year is a new precision measuring centre designed for small workpieces. With the P 16, the highly successful P 26 now has a "younger sibling," which completes the product range for measuring the smallest workpieces.

Dr. Christof Gorgels, division manager for Measuring Instrument Construction, says: "With the P 16, we are offering a machine based on the tried and true qualities of the P series, but which comes in below the P 26 in terms of footprint."

"The compact precision measuring centre provides access to the world of Klingelnberg P machines at an attractive price." Because the P 16 is based on P series technology, all software application programs are compatible, of course.

The P 16 owes its compact size to an innovative modification. Thanks to a newly developed workpiece clamping system which is optimally adapted to accommodate small workpieces, there is no need for a counter support. This allowed Klingelnberg to design a relatively small machine. Georg Mies, head of measuring machine development at Klingelnberg, explains precisely how the new clamping system works: "The workpiece mounting of small components is often accomplished using a chuck. For this reason, we developed for the P 16 an innovative electrical clamping system that has been integrated into the workpiece axis. This clamping system is suitable both for circular and cylindrical components and for mounting short shafts."

With the new precision measuring centre, Klingelnberg is targeting areas in which the demands for precision in volume production are becoming increasingly stringent: "The P 16 is specifically tailored for the requirements of small components, particularly those required in the automotive, power tools, pumps, e-mobility and small drives market segments," says Georg Mies,

Founded in 1863, the family owned Klingelnberg company is one of the leading companies in the gear industry. Thanks to numerous innovations in the areas of calculation, production, and measuring technology, Klingelnberg has maintained a leading position in this sector. With its acquisition of Höfler Maschinenbau GmbH's core business in 2012, Klingelnberg has added machines for machining cylindrical gears to its range of products, reinforcing its position as a complete system provider.

Headquartered in Zürich, the machine manufacturing firm develops and manufactures today at its sites in Zürich, Hückeswagen and Ettlingen, and Győr, Hungary. The company also maintains a presence with sales and service offices and numerous marketing agents all over the world. Klingelnberg solutions can be found in the automotive, commercial vehicle, and aircraft industries, as well as in shipbuilding, the wind power industry and the general gearbox manufacturing industry. Applications range from vehicle drives to aircraft turbine engines and cement mill gear units, through to drive systems for ships and oil rigs.

With over 100 patent grants, the company continuously demonstrates its capacity for innovation. Above and beyond this, Klingelnberg's 14001 certification and participation in the VDMA's blue competence initiative underscore the company's sustainable, environmentally sound business practices.

Klingelnberg GmbH
Tel: 0049 2192 81370
Email: info@klingelnberg.com
www.klingelnberg.com
www.hofler.com

New temperature analysis software is spot on

AMETEK LAND has introduced a new innovation to its SPOT range of non-contact infrared thermometers which enables the simultaneous storage and analysis of data from up to 40 spot thermometers.

The new LAND SPOT Server Software builds on the features of the SPOT Viewer to enable users to be able to compare live and historical data from multiple thermometers. This has many benefits in terms of enabling the user to identify process trends, as well as facilitating greater efficiency and productivity and reducing the risk of downtime.

A spokesperson for AMETEK LAND says: "Our new SPOT Server Software is ideal for larger operations where advanced process control is required. It offers a number of user benefits around the capture, storage and analysis of data from multiple spot thermometers for management decision making and production efficiency."

The software has an overview window, where users can visualise data from up to 20 SPOT Thermometers on one single screen. The window provides an overview control for each SPOT thermometer, which allows for the display of target and ambient temperatures. It also enables the user to monitor the current instrument alarm status and configure instrument settings and access the SPOT integrated camera image.

Users can define custom criteria to enable the capture of important events and manage how and when to store data. Each thermometer can be configured independently, with the freedom to define the storage interval for a range of fields, including target temperature, ambient temperature and emissivity.

The new software gives the user the freedom to define exactly when and for how long to store every data value and analyse both live and historical data.

The Calibration function within SPOT Server Software enables users to check the calibration of their SPOT infrared thermometer, either as field or laboratory calibration.

Data can be stored to either Microsoft SQL or XML text file. Microsoft SQL provides a database archive that supports complex data queries and the possibility of plant data integration and reporting. Use of SQL provides opportunities for the integration of data and the ability to deal with complex data queries. Users can easily export data to an Excel file for offline analysis using standard commercial analysis tools.

The LAND SPOT range of infrared thermometers are widely used in the following industries: glass, iron and steel, hot rolling mills, heat treatment plants, induction heating and cement.

For a free 30 day trial of the SPOT Server Software, contact Land Instruments via the website **www.landinst.com**.

Land Instruments International is a business unit of AMETEK, Inc. a leading global manufacturer of electronic instruments and electromechanical devices.

AMETEK LAND designs and manufactures a range of instruments for industrial non-contact temperature measurement, combustion efficiency and environmental monitoring.

AMETEK LAND has been building precision measuring equipment since 1947. The company is a specialist in non-contact temperature measurement and combustion monitoring, with its products widely used across industries such as steel, glass making, power generation and cement production.

AMETEK LAND has over 60 years' experience in temperature measurement. Ongoing development creates products for new applications and the continuous improvement of an expanding product range.

Infrared temperature measurement product range includes: Fixed, on-line thermometers and systems for process control and product quality; Portable infrared thermometers for spot measurements; Process thermal imagers for asset management and process control; High resolution, infrared scanners for fast moving materials and calibration furnaces.

Quality is an integral part of the company philosophy, where all levels of management and employees are responsible for the quality of their work, to ensure complete customer satisfaction.

Quality, traceability and overall service remain the highest priority at LAND. The Quality Management System at AMETEK LAND Instruments International is approved to ISO 9001. With the recognition of accuracy as the foundation of good product design, the AMATEK LAND laboratory was the first, in 1970, to be accredited for the issue of calibration certificates for thermal measurements. Again in 2001 LAND were the first to meet the requirements of ISO 17025 and remains one of the world's leading calibration laboratories today.

AMETEK LAND
Tel: 01246 417691
Email: land.enquiry@ametek.co.uk
www.landinst.com
www.ametek.co.uk

Increase productivity with precise clamping force measurements

Hainbuch and Siemens enter into partnership

The Siemens Sinumerik CNC controllers have been getting the maximum productivity out of each machine for over 50 years. Now they have another partner on their side, Hainbuch Testit software. The clamping force measuring device increases productivity through precise clamping force measurements. It is available on a data carrier for installation on Siemens CNC controllers (Sinumerik 840 D sl plus PCU50). This means that a separate laptop is not needed anymore and manufacturing with "theoretical clamping forces" is also a thing of the past.

Thanks to Testit, the operator always knows which clamping forces exist and where, as well as the actual maintenance status of the clamping device. Given the safety standard DIN EN 1550, it is a "must have". The Testit clamping force gauge together with the Siemens CNC controller executes a target-actual comparison of the maintenance status of a clamping device. If the limit values are under-ranged, a warning message is output.

Trust is good, control is better

Based on his apprenticeship, a machine operator or programmer has been taught to work in such a manner that a workpiece does not get destructed. When programming the manufacturing steps he builds in a lot of safety measures to minimise this risk. However, in reality, effective measurement data regarding the holding forces of a clamping device as well as the clamping forces of the clamping cylinder itself can only be obtained as vague reference values. A machine operator who knows how dependent the holding forces of a clamping device derive from its current maintenance status are, or from the centrifugal force losses while turning with jaw chucks, is extremely sceptical of such makeshift calculations and hence builds in a high safety value. Machining of easily deformable components is also extremely critical. Usually only a very small margin of holding force is available. If an item is clamped too strongly, a sensitive component will be excessively deformed; applying too little clamping force results in an inefficient setup for rational machining.

Safe results - even with mandrels

The globalisation of markets requires an optimum of the machining process. Those who face stiff competition can no longer afford to manufacture just by "feeling." Measurement data is essential; it not only functions perfectly for outer diameters and during rotation but also precisely measures the holding force of mandrels for inner diameters.

Hainbuch UK Ltd.
Tel: 01543 478710
Email: sales@hainbuch.co.uk
www.hainbuch.co.uk

One device performs the work of two

The RSL 400 safety laser scanner from Leuze sets new standards in the safeguarding of large areas

With decades of experience in safety guarding, Leuze has succeeded in developing a device that uses clever functions to, in many cases, perform two tasks simultaneously.

The RSL 400 offers a large scanning angle of 270° and this is especially advantageous, for example in the case of mounting on corners or edges for front and side guarding, replacing, depending on the application, the need for a second laser scanner. The operating range of 8.25 m, two independently adjustable configurations and two safety-related switching output pairs (OSSDs) allow two different protection tasks to be performed simultaneously with just one device, while fully complying with ISO EN 13849 and the EU machinery directive.

Up to nine configurable I/Os are used to link to additional safety sensors and also offer additional control functions for individually adapting to the application or to your specific requirements.

The safety laser scanner also offers an enormous number of possible field pairs. Nevertheless, it is easier than ever to set independent configurations with the application-oriented one-step configuration.

The Ethernet TCP/IP interface makes it possible for simple and convenient configuration and diagnostics. The devices can also be controlled and configured wirelessly via Blutooth at distances up to 10 m.

A Quick Start Guide and online help provide support even during the first steps, with a large, clear-text display. The intelligent CU 400 connection units facilitate easy mounting of the safety laser scanners in just a few steps: simply mount the connection unit using standard tools, place

the laser scanner on the connection unit and you are finished.

Integration into the machine control is via an 8-pin, M12 connection (RSL 410). The large, clear-text display with integrated spirit level ensures simple alignment during mounting, even without PC connection.

The initial start-up configuration is completed with just five clicks and the simulation mode can be used to ensure that everything is correct, thanks to the Sensor Studio software. For a device upgrade or exchange, the safety laser scanner can be removed from the connection unit at any time with standard tools and replaced with another RSL 400 device added without realignment, readjustment and configuration; an important plus point for maintenance and servicing.

The RSL 400 family comprises 16 device types in four staggered operating ranges and function variants. The most appropriate scanner can therefore be selected at the best price performance ratio for your particular needs, where appropriate with a scanning area of 160 square metres, thanks to a scanning angle of 270° and an operating angle of 8.25 metres. Whether mobile or stationary, the RSL 400 family covers all conceivable applications.

The RSL 410/420 scanners are all-rounders for standard tasks. They are particularly suited for the safeguarding of large areas, thanks to its 160 m^2 area coverage. Selectable resolutions and individual start-up behaviour including contactor monitoring are needed. The device offers all this as well as reference boundary monitoring. The RSL 430 is ideal for stationary applications. Its 270 degree scanning angle, 8.25 m operating range as well as two independent protective functions and OSSD pairs with individual response time make the RSL 430 make it ideal for this type of application. It can be precisely adapted to the safety tasks with its switchover capable field pairs (10+10). Other features include nine signal outputs and the possibility of emergency-stop linkage.

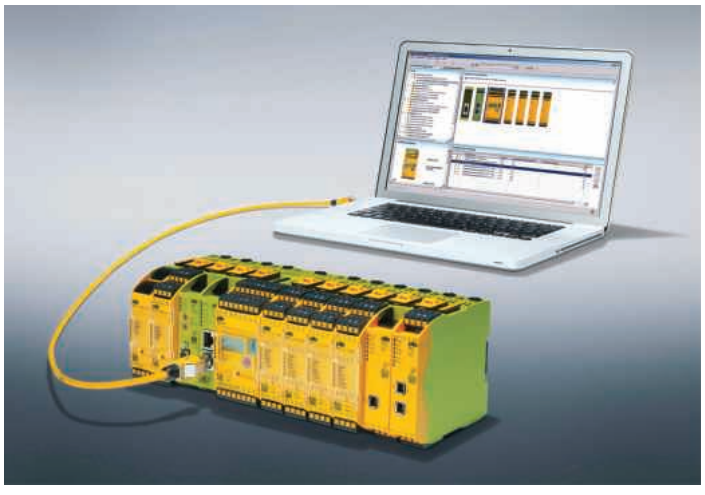
The RSL 440, available shortly, incorporates top notch functions for mobile operations. Even with just two safety laser scanners, you can achieve all-round protection with four independent functions. As well as a large scanning range, there is the possibility of emergency-stop linkage and configurable date output for supporting navigation. An internal time delay can be used to set STOP categories.

The Leuze electronic Sensor Studio allows you to easily and comfortably configure sensors. The parameters are depicted in an easy-to-understand and graphical form.

Applications include the guarding of machine tools, heavy equipment and assembly areas using robots.

Leuze electronic Ltd
Tel: 01480 408500
Email: info@leuze.co.uk
www.leuze.co.uk

Now with ProfiNET and Ethernet/IP network integration



Ever more flexible, the communication modules PROFINET and Ethernet/IP are now available for the configurable control system PNOZmulti 2. It can now be expanded on the left-hand side with these important communication modules.

The PNOZmulti 2 for safety and automation functions has two new communication modules for connection to Ethernet-based systems. With these modules, the base unit can be extended and easily connected to PROFINET or Ethernet/IP networks alongside EtherCAT, Modbus TCP, Powerlink, Profibus-DP and CANopen.

As an open, configurable control system, PNOZmulti 2 can be used flexibly across industry, independently of the higher-level operational control system. The new modules enable flexible communication between PNOZmulti 2 and other controllers such as Rockwell or Siemens PLCs.

Play it safe and use PNOZmulti 2, the worldwide safety standard for all machine types.

Pilz Automation Technology develops, manufactures and supplies process and automation control products for use wherever there is a requirement to ensure the safety of plant, personnel or the environment.

Included in the range are: safety relays; configurable safety controllers; programmable safety systems (safety PLCs) for use with or without the SafetyBUS p safe, open industrial fieldbus network; mechanically actuated and non-contact guard switches; safety light curtains; emergency stop switches; operator interfaces; plus control and monitoring relays for non-safety applications.

Future developments will see safety technology being integrated more closely with standard control, such as in servo drives or motion control systems. In addition, Pilz provides safety-related services, such as training, engineering and consultancy.

For almost 20 years Pilz has taken a leading role in educating the market with regard to safety legislation.

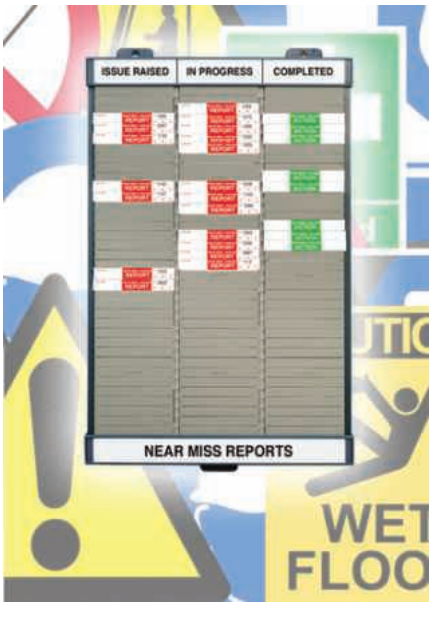
Pilz Automation Technology
Tel: 01536 460766
Email: sales@pilz.co.uk
www.pilz.co.uk

Display system gets the message across about workplace hazards

Providing information and communicating with staff and colleagues in the workplace is essential, particularly when hazards, incidents or near-misses occur which may impact on others. An effective, low-cost solution to 'getting the message across' is the Near Miss / Incident Reporting System available from T Cards Direct which is an easy way to manage and document health and safety issues.

Compliance and accountability is becoming increasingly important in the work place and this system provides a record and history with traceability from the time the incident occurred. The standard display board is available in a 3 column format with standard 50 or 30 cards deep and measures 409 mm wide and is supplied fully assembled, complete with headings and 200 Incident T Cards. There is also the option to have the system made to a bespoke format.

A Near Miss, Incident Station is sited at the entrance to a specific department. The risk or hazard is recorded on a T Card and then placed in the Near Miss Station for all to view. The information is then transferred onto a T-Card, inserted into the T-Card board and communicated to Line Managers who can decide the best form of action. As our staff are very pro-active, the issue is often dealt with at the time and recorded into the T Card, demonstrating continuous improvement and ownership of the department.



Whenever there is a T Card raised it enters the 'Issue Raised' column and is discussed with the best possible outcome agreed. Once attended too, the card is moved to the 'In Progress' section until closed off, when completed, feedback is given to the person that raised the issue (which encourages colleagues to raise further issues). The T-Card is then turned over to green which records the action taken to close off.

The Near Miss / Incident Reporting System is one of a range of display and information systems available from T Cards Direct who offer over 45 years of experience in providing effective and affordable information systems.

T Cards Direct,
Tel: 01732 871417
Email: philip@tcardsdirect.com
www.tcardsdirect.com

A 25 year partnership with Delcam

Elkington Brothers has completed 25 years as a customer for Delcam's CADCAM software. The Birmingham-based toolmaker installed its first system in 1989, having used traditional methods for the first fifty years following its founding in 1939.

"It was a big decision to move to computerised methods as the software alone cost tens of thousands of pounds and the computers and CNC machines were also much more expensive than they are now," recalls managing director, James Kelly: "Subsequent years have proved it was the right decision. I'm certain that, if we hadn't invested in CADCAM, we wouldn't be here now."

"There were far fewer systems to consider in those days but we still did a thorough evaluation. Delcam seemed to have a different focus, with its emphasis on tooling design and machining, while other systems were more appropriate for component design. The location in Birmingham was also an important factor as we knew we would need a lot of support in the early days."

Of course, Delcam's software has undergone huge developments since those days, with much of the improvement prompted by feedback from early customers like Elkington Brothers. "We have always had a strong partnership with Delcam," says James Kelly. "We used to ask `Why can't we do this?' or `Wouldn't it be better if we could do that?' and then see the changes appear in the software."

Elkington Brothers now has seven staff working on the software; three doing design with the PowerSHAPE CAD software, two programming with the PowerMILL CAM system and two switching between the two programs. Two of the group also use the PowerINSPECT inspection software for quality control on a Stiefelmayer CMM, with a third about to be trained.

The Delcam programs are used for the company's complete range of projects, including making many types of tooling, producing models and patterns, and building jigs and fixtures. While almost 90 percent of the work is for the automotive industry, including a lot of RIM tooling to produce sills, bumpers and spoilers, Elkington Brothers also has customers in the aerospace, agricultural and rail businesses.

"The software has gone from strength to strength over the time we have been a customer," says James Kelly. "We started out using a lot of typed commands, whereas now everything is done through the user interface. In addition, the developments in both software and hardware mean that calculation times are a fraction of what they used to be."

The faster calculation times have contributed to substantial time savings. A project like a tool for a headliner used to take twenty four weeks but this is now down to six weeks if everything goes to plan. The time savings enable Elkington Brothers to be competitive when quoting for work. The faster delivery also benefits the company's tooling customers because they can start making parts that much sooner.

The accuracy that is possible with the Delcam software is also much better. "Of course, we would never have sent out tooling that wasn't up to our standards," says James Kelly. "However, the software means we can reach the required quality much more quickly with very little hand finishing."

One thing that hasn't changed is the number of tools that are modified, either before any parts are produced or after initial samples have been made.

Even though James Kelly says that "the software is much easier to pick up now", he still insists that his staff attend update courses at Delcam on a regular basis. "We still use the helpline quite a bit," he said. "Many of the staff that we contact now are the same people that were there when we first bought the software. With all that experience, their knowledge is very impressive. It means that the support is second to none."

After a difficult time during the latest downturn, Elkington Brothers is now back on a strong growth path. The company has added two extra Hurco machines in the last eighteen months, both offering higher machining speeds and better surface finish. James Kelly is now looking at acquiring the company's first continuous 5-axis machine, after many years of operating 3+2 equipment.

Delcam Ltd
Tel: 0121 683 1081
Email: marketing@delcam.com
www.delcam.com

hyperMILL ShopViewer for greater safety and more clarity

OPEN MIND Technologies AG has released hyperMILL® ShopViewer, a proprietary visualisation solution for the workshop. It provides machine operators with a complete overview of the upcoming NC program right through to simulation and ensures that only safe, checked NC programs run on the machine.

Although the digital process chain from design through NC programming already exists in many companies, there is often a break in the chain when it comes to the production environment. The actual programs are forwarded to the controller via the network, but the associated information is not normally transferred. The machine operator can usually only take advantage of static aids like drawings, tool reports, screenshots and PDFs.

It is a different picture with a viewing system. Here, the system provides the specialist operating the machine with all of the information related to manufacturing data, as well as geometry and component structure. hyperMILL ShopViewer makes it possible to view and examine data from hyperMILL and hyperCAD®-S in more detail directly next to the machine. "The viewer typically allows the machine operator to view everything but not modify anything," says Wolfgang Weiss, product manager for CAD at OPEN MIND. hyperMILL ShopViewer was developed specifically to the requirements of hyperMILL users. The information visible on the hyperMILL ShopViewer workspace includes 3D model with the ability to measure features, CAM program, 3D clamping plans and tool data.

By providing this information, the machine operator can simulate the actual manufacturing process and gain a better understanding of the milling process in the machine. The hyperMILL operating concept allows users to work in their usual interface. This enables them to reach their goals quickly. "hyperMILL ShopViewer features an uncluttered interface, where the user can only see what he or she needs at any given time," says Wolfgang Weiss.

OPEN MIND Technologies AG is a leading developer of CAM/CAD software and postprocessors for designing and manufacturing complex moulds and parts. OPEN MIND offers an extensive selection of products ranging from 2D feature-oriented solutions for milling standard parts through to software for 5-axis simultaneous machining.

Open Mind Technologies
Tel: 01869 290003
Email: adrian.smith@openmind-tech.com
www.openmind-tech.com

Radan helps CNC World diversify into metal cutting

A machine tool distributor has diversified into cutting metal for customers who are working to capacity and need to fulfil another order, or if they're asked to cut a different material from normal and do not have a suitable machine for it.

CNC World is the UK's sole distributor of MultiCam lasers, water jets and plasmas. Having launched a partnership with the world's most powerful sheet metal CAD/CAM software, Radan, at the MACH exhibition in 2014, they now offer Radan, from Vero Software, as an option with all machines. It also drives the demonstration machines which they use for the new cutting service.

"When our machines weren't being used for demonstrations they were standing idle," says sales director Jason Rowe. "Customers receiving orders for cutting a different material have to subcontract it out, and we were often asked to recommend companies to undertake emergency cutting, so decided to start using our own machines for it."

They have also hired a programmer with extensive knowledge of Radan to ensure they provide customers with the best possible solution, including the most efficient nesting available, keeping material wastage to an absolute minimum.

The service has proved particularly useful for machining overspill when a manufacturer's shop floor is full to capacity, and when a customer needs to work with material they do not normally cut. He explains that as CNC World also supplies 3-, 4- and 5-axis routers driven by Radan's sister software, Alphacam,it is able to cut wood or plastic, which metal focused customers with lasers, plasmas and water jets cannot undertake.

"It means we can offer wood and plastic cutting for metal manufacturers, and metal cutting for woodworkers. For example, a woodworking company needed to cut a couple of pallets of stainless steel as part of a cabinet-making contract. We were able to do that for them."

The cutting service has also helped CNC World to secure a machine order. "We've recently been cutting components for a manufacturer which led to him winning a major contract. The additional work that is bringing in justified them investing in a new machine from us," says Jason Rowe. Having been offered partnerships by several software developers, CNC World undertook research amongst their customers. "Many were already using Radan and recommended it to us, so our decision was customer-driven and is the obvious choice. Radan is extremely powerful software that can be adapted to every customer's specific needs, whether it's for our new cutting service or their own machines, which is vital as everyone needs something different."

He says CNC World's major strength is that they have a machine for everything. "Normally a company would only deal in one type of cutting technology, but we have MultiCam waterjets, lasers, plasmas and routers and now, with Radan and Alphacam, the best software to fully optimise those machines."

They always offer Radprofile with the nesting module. "When used with Radprofile, Radnest can automatically produce common line cuts between adjacent parts to further increase material utilisation and reduce cycle times. Gaps between components are controlled by the kerf width created by a given material, thickness and cutting method for a specific machine. This data is stored within Radan, meaning that complete automation is possible.

"Radnest can mix different nesting techniques on the same sheet, including rigid kits, picking clusters, common cutting, or standard spaced, giving industry-leading results for manufacturing techniques used by customers with CNC World's modern machines."

He says waterjet and plasma is a major

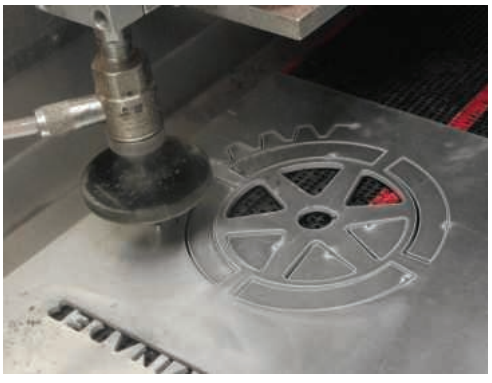
growth area in the UK, and their range includes 3- and 5-axis machines. "Full 5-axis water jets are extremely popular, and we're being asked for 5-axis plasmas a lot more nowadays, which come with the full range of hypertherm torches," says Jason Rowe

When cutting metal at CNC World's Norfolk headquarters, its 3000 Series waterjet is linked to a KMT Streamline SL-V

50 STD pump which sends water out at 60,000 psi. A steady flow of GMA garnet abrasives to the focusing tube allows uninterrupted production without downtime resulting in optimum efficiency and lowest production costs. CNC World also supply the full range of KMT intensifiers going up to 90,000 psi.

In the short time since the partnership with Radan began they have already shipped a number of machines incorporating Radan, and quotes are out on several more. "We also held an open day recently running machining demonstrations with Radan, and customers were most impressed,'' concludes Jason Rowe

Vero Software is a world leader in CAD CAM software with a proven track record of reliable product delivery. Vero develops and distributes software for aiding the design and manufacturing processes, providing solutions for the tooling, production engineering, sheet metal, metal fabrication, stone and woodworking industries. The company's world-renowned brands include Alphacam, Cabinet Vision, Edgecam, Machining STRATEGIST, PEPS, Radan, SMIRT, SURFCAM, VISI, and WorkNC, along



with the production control MRP system Javelin. Despite the diversity of application, these solutions have one thing in common: they all address the rising challenges of achieving manufacturing efficiencies and bring huge value to the operations where they are deployed.

Vero UK Ltd
Tel: 01189 756084
Email: stewart.bint@verosoftware.com
www.verosoftware.com
www.radan.com

ModuleWorks to show latest CADCAM developments at CIMT 2015

ModuleWorks, the leading supplier of CADCAM components for 5-axis machining and CNC simulation, will show the latest developments in CADCAM component technology at the 14th China International Machine Tool Show (CIMT) from April 20-25th (booth 317, Hall E5)

ModuleWorks is at the forefront of 5-axis machining and simulation technology, providing the toolpath generation and simulation technology that powers many of the most popular CAM systems available around the world today. ModuleWorks has more than 50 industry partners around the globe and partners in China include CAXA, one of the most popular locally authored CAD/CAM solutions.

At CIMT 2015, the ModuleWorks team will be showing the latest developments in CAD/CAM component technology including the highlights of the upcoming 2015.04 releases including many new innovations in toolpath generation and simulation.

ModuleWorks have been also collaborating with CNC control manufacturers to provide its simulation and verification technology directly on the CNC control and will be showing how G-Code CNC programs can be verified on the control in real time, helping ensure a safe and right first time environment.

Jens Beissel, marketing manager for ModuleWorks says, "China is a huge manufacturing economy with rapid growth

and many opportunities for CADCAM. We are very much looking forward to travelling to China and exhibiting at CIMT 2015 alongside many of our industry partners. This will be the first opportunity to show our latest release and may of the new features on show will be appearing in the main stream CADCAM systems in the coming months".

For more information and live demonstrations, please see the ModuleWorks team at CIMT

ModuleWorks is a software component provider for the CADCAM industry. ModuleWorks' expertise in 5-Axis machining and simulation is recognized throughout the CAM industry and its software components and development services are used by the majority of the leading CAM vendors. ModuleWorks 5-axis and simulation software has been used in the manufacture of complex parts for over a decade and they have many users in the global CADCAM market.

ModuleWorks GmbH
Tel: 0049 241 9900040
Email:info@moduleworks.com
www.moduleworks.com

New accessories for FlyMarker PRO

Small add-ons simplify the battery operated marking system

The German manufacturer of marking systems MARKATOR continuously aims to simplify the marking tasks of its customers and to optimise the marking results when marking tasks are complicated. Due to constant communication with the customers, in several cases of application, the development of new optional accessories is possible time and again. These optional accessories ensure durable marking tasks on several kinds of work pieces are made easier.

Currently there are three new positioning plates for the battery operated dot peen marking system FlyMarker PRO available. The positioning plate with 3 point touch has three point touch support with rubber coating instead of a flat positioning plate. Two of the point touch supports can be adjusted individually in x-direction. This accessory can be used if the access for the positioning of the hand-held marking system on the workpiece is limited. The three rubber coated point touch support prevents the work piece from slipping off due to vibration which occurs during the marking process. It also provides a stable operating position. If the access space is very small it is also possible to dismount one of the point touch supports. This positioning plate can also be modified when a special device is needed.

The easily upgradeable prism fence-system for round and flat parts does have its advantages, especially when the marking needs to be done on the face of a workpiece, with equal distances from the edge. Due to the end stop on the top edge of this positioning plate a safe positioning can be assured. With the help of the integrated prism, a precise alignment also on round workpieces is very easy. The prism is out of plastic and can be easily modified for specific work pieces.

The magnetic stop system for FlyMarker PRO can easily be adjusted on the standard positioning plate. It is especially suitable for deep markings on steel. The magnets on the base of the positioning plate fix the hand-held marking system firmly on the workpiece and prevent the workpiece from slipping off during the marking process. This optional holding device simplifies the process when markings need to be done without horizontal installation surface, for example on vertical surfaces or on the face of a flange.

Cost-effective solution for durable markings

With the new generation of the marking tools "BZ-Marker", an easy change of the marking pin is possible. Using pliers the marking pin can easily pulled out and changed. With this it is no longer necessary to send the marking tool to the manufacturer to change the marking pin. This saves both, time and money.

The BZ-Marker is a cost-effective marking tool for your CNC machining centre to generate a durable marking on many different kinds of materials.

It is possible to seat this marking tool into a collet or a Weldon toolholder and integrate it directly into the machine spindle of your CNC machining centre. The marking speed is aligned with the speed of your machining centre.

Due to the high quality guiding of the tool, uneven and raw surfaces can be marked with, for example, a serial number without any problems. A stepless adjustment, depending on the material hardness and the requested marking depth, is possible.

Compared with the marking process, using a milling tool in the CNC machining centre, the marking times can be reduced by 75 percent when using the BZ-Marker. The marking pin does also has a very long lifespan.

To generate the required markings, the marking tool will be pressed into the material and drawn through according to the programmed font. The material will be compressed on the position of the marking and will not be weakened or damaged. No noise will occur with this marking method.

Depending on the material and the required marking depth you can choose between the four different tool sizes S, M, L and XL.

MARKATOR
Manfred Borries GmbH
Tel: 0049 7144 857516
Email: uschi.gassmann@markator.de
www.markator.de

All-in-one marking system for OEM and mobile applications

A diode-pumped fibre laser operating in the infrared spectrum is the basis of the new TruMark 5010 laser marker, shown for the first time in the UK at the TRUMPF Open House. It combines laser, scanner, controls and internal focus position control in a single housing making it ideal for integration within manufacturing systems. And thanks to this all-in-one design the TruMark 5010 can also be specified as a mobile model.

As an OEM device, the TruMark 5010 combines excellent average power with brilliant beam quality to deliver cost effective results, even in demanding

marking tasks or on fine structures. With its standard field bus and Ethernet interfaces, space-saving design and air cooling, the product is easy to integrate, especially as there is no need for a separate power supply unit.

The TruMark 5010 can be used on a wide variety of substrates including metal, plastic or organic materials and it is particularly impressive at deep engraving and surface finishing. Typical users will be those involved in the automated manufacture of automotive, medical and electronic products.

As a portable device, the TruMark 5010 can be applied to the work piece, eliminating the need to move heavy and cumbersome components to the marking station; intelligent sensors ensure the entire process is conducted safely and accurately. A laser light cable guides the beam from the mobile frame that holds the laser, safety controls and suction system to the scanner unit at the work piece.

When the operator positions the TruMark 5010 Mobile Marker, a vacuum is created which hermetically seals any gap between

the machine and component. If the head is not positioned correctly, sensors prevent the laser emitting its beam. It also features an integrated vacuum unit which removes any vapours created in the process.

In both modes the TruMark 5010 marks identifying characters and images including barcodes, variable text and data matrix codes for traceability as well as logos and other embellishments.

TRUMPF Ltd
Tel: 0844 482 0188
Email. sales@uk.trumpf.com
www.uk.trumpf.com

Merger creates a new force in laser marking

Electrox has merged with leading US laser specialist TYKMA in a major deal that will enable the company to launch ambitious growth plans into North America.

Part of the 600 Group, Electrox has grown significantly in recent years, doubling turnover between 2009 and 2014, prompting the decision to look West.

"Our recent success has been primarily in the UK and Europe, so the natural target for further growth lies across the Atlantic," explains Electrox managing director Paul Mincher. "We therefore sought a complementary North American company that we could work with."

Ohio-based TYKMA offers a well-regarded range of laser marking solutions; crucially, its portfolio dovetails nicely into the Electrox suite of products.

"You might say that, on our own, Electrox had half of the alphabet. With TYKMA integrated into our operation, we can offer the full A-Z of laser marking needs, from entry level systems up to high-end multi-axis machines," he confirms.

600 Group has taken an 80 percent stake in the TYKMA business, with TYKMA reporting into the 600 Group. David Grimes CEO of TYKMA is the new merged group CEO. Paul Mincher will continue to head up European operations as managing director.

"The merger will create one of the most diverse and powerful companies in the laser marking systems industry," continues Paul Mincher. "Electrox is a company rich in history, experience and technology. TYKMA is a growing, market driven company with strong leadership. We will combine to create a powerful single business unit."

To support the merger, a new sales structure has been created, managed by Richard Reilly, group sales director of the newly merged group. UK and European sales will continue to be led by European sales director Peter Ramsden. Together, the companies will offer a wide range of laser marking systems and technologies to the manufacturing industry with one of the largest combined customer bases worldwide.

"We're very upbeat and optimistic about this deal," concludes Paul Mincher. "It strengthens what is already successful about Electrox and means that customers can benefit from enhanced choice in order to get the best out of their laser marking operations.

"Our global customers will experience an enhanced service, support and knowledge base with access to a diverse line of products. The new merged company will increase its focus on laser technology development."

Electrox was founded 40 years ago and is part of the world-renowned 600 Group PLC. The company manufactures a wide variety of fully-integrated laser marking solutions, which use an intense beam of light to permanently engrave or mark a material's surface. Its systems are fast, extremely easy to use and very cost effective, because there are no components to wear or run out.

Electrox lasers offer a wide range of applications including ablation and coating removal such as for automotive displays, coding for traceability and identification, authentication and labelling and for decorative design and personalisation.

The 600 Group PLC is a diversified engineering group with three principal areas of activity:

Machine Tools - the business has a strong reputation in the market for metal turning machines. Products range from small conventional machines for education markets, CNC workshop machines and CNC production machines. The manufacturing footprint is supported by selected outsourcing partners and machines are marketed through the Group's wholly owned international sales organisation.

Precision Engineered Components - machine spares are distributed to customers globally to help maintain the installed base of group machines which number in excess of 100,000. Additionally work holding products and taper roller bearings are sold via specialist distributors to OEMs including other machine builders.

Laser Marking - laser marking is a technologically superior alternative to inkjet marking. It requires no consumables and can operate on a continuous high speed basis when integrated into customers' production lines. The business has its own technology and proprietary software. Customer applications are diverse and range from telecommunications to pharmaceuticals. The requirement for increased product and component traceability is one of the market drivers.

Electrox
Tel 01462 472400
Email: sales.uk@electrox.com
www.electrox.com

Floyd hits the mark with new roll marking line

Marking components with production data or batch information whether it be letters, numbers or other symbols, it forms part of quality assurance cycle in many industry sectors. To service this demand for high quality marking on all material types, Floyd Automatic has now launched the new Hommel & Keller roll marking line.

Hommel & Keller marking tools can be used on all standard machining centres. For marking flat surfaces, all tools in the 431 and 432 Series are suitable. The spring return system allows these tools to be flexibly adapted to workpieces with different diameters and shapes.

Additionally, if a longitudinal or flat mark needs to be applied up to a shoulder, Hommel & Keller can offer two types of tool. The recommended tools allow the user to choose between a fixed marking roll or flexibly interchangeable alphanumerical segments for continuous serial numbers. It makes no difference whether the characters are to be arranged in a vertical or horizontal, linear or circular form. Even for markings within a groove, Floyd now has the solution.

The appropriate tool configuration is determined to suit the specific requirements. Since the Hommel & Keller line is easy to handle, users can create precise results effortlessly, quickly and cost effectively. Commenting upon the Hommel & Keller line, Reinhold Dreher, the company's customer account manager and application specialist says: "It is now well established that we can mark shanks with our tools. But our expertise does not end here, far from it. Sometimes, the markings need to be applied in difficult-to-reach areas, or a flat surface needs to be marked quickly and precisely. We would not be Hommel & Keller, if we did not have the right solutions for these instances."

Floyd Automatic Tooling's managing director, Richard Floyd says: "Our business has been built upon supplying solutions that are beyond the realms of our competitors. Once again, with the Hommel & Keller line we have brought a line of high end tooling, knurling and marking solutions to the UK that are beyond the scope of our competitors whilst delivering application specific solutions to the marketplace."

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

Automated 2 position rotary table workstation

FOBA M2000-R and M3000-R offer more throughputs for laser marking

FOBA Laser Marking and Engraving has added to its M-Series of compact workstations for industrial laser material processing with the M2000-R and M3000-R stations. The two high-throughput laser marking workstations come with 2 position rotary tables for the efficient and ergonomic processing of geometrically complex work pieces of varying sizes, as well as small and large batches of parts.

The automated laser class 1 rotary table workstations M2000-R and M3000-R come with a programmable Z-axis and a 2 position rotary table with either 670 mm (M2000-R) or 950 mm (M3000-R) diameter. Other axes as well as camera systems, exhaust units, interfaces for the integration of client processes and a customer interface directly on the rotary table can be added as an option. The turntable stations are perfect for marking smaller and larger parts of any kind precisely, fast and economically. The robust machine construction ensures a fail-safe processing with highest marking quality.

High throughputs with a two position rotary table

This way of part loading and unloading via a 2 position rotary table ensures that various applications can be executed more efficiently and without using additional beam safety light barriers. Parts are loaded and unloaded while another part is being laser marked. Loading times have hardly any influence on machine productivity. This lets machine utilisation and part throughput increase. This consistent prevention of costly non-productive times pays off, especially when high quantities are manufactured. These high-throughput laser workstations are especially suited for marking all kinds of serial parts such as day/night design parts for vehicle interiors, metal components, tools or medical products and devices such as implants or surgical instruments.

More ergonomics for maximum ease-of-use and smooth production flows

Designed for both standing and seated work, and highly adaptable to individual needs, the M-Series workstations provide maximum ease-of-use and meet all requirements for ergonomic working. In order to reduce work fatigue, the working height of the machine can be individually adjusted: stepless electrical height adjustment with lowest position at 1,844 mm and maximum position at 2,144 mm. The control panel, with monitor, keyboard and computer mouse, can be mounted on the left or right side of the machine, so the machines can be configured for left or right handed people alike. To ensure optimal accessibility, major control elements and status displays are directly integrated into the front of the machine; where also loading and unloading take place. Sensors for part detection and status LEDs ensure ease-of-use and make both loading status and processing progress for both table positions manageable at any time. Light barriers at the place of loading and unloading for maximum safety at work and the wear-free double bulkhead (no seals) ensures more efficiency and permanent laser safety.

Precision and process reliability for the highest marking quality and efficient production

Product marks applied to the wrong position, to the wrong workpiece or to defective workpieces can be very expensive to businesses. Low quality and poor contrast marks also lead to production waste, decreasing productivity. In order to avoid such costly production waste from the outset, and to ensure flawless laser marking in precisely defined positions, the marking workstations in the M-Series are equipped with high-precision calibration. In addition, customers can automatically detect the position of work pieces to be processed with the patented IMP (Intelligent Mark Positioning) camera system. IMP adjusts the mark accordingly, and the mark result can be verified in terms of quality and position in accordance with the marking process. All laser marks are executed precisely and with repeat accuracy, waste is drastically reduced, productivity and efficiency are increased.

In parallel, the rigid polymer concrete machine frame ensures process reliability. As a result of float-mounting the polymer concrete slab on the machine frame, all M-Series workstations are insensitive to variations in temperature and external vibrations.

FOBA
ALLTEC GmbH
Tel: 0049 38823550
Email: dfrancksen@foba.de
www.fobalaser.com

Direct part marking with lasers

Component traceability is an increasingly important requirement in manufacturing industry for both quality control and anti-forgery purposes. Direct part marking by using a laser can satisfy this requirement and provide additional benefits at the same time.

The laser mark is indelible, providing full traceability for the life of the part. It cannot be falsified, and offers a high security tamper-proof process for marking and protecting your parts.

No force is applied to the part, so even delicate components can be marked without damage or distortion. Fixturing is simplified or even eliminated in some cases, as the part does not require clamping. Finally, there is no tooling to wear out.

The laser is one of the most environmentally friendly marking technologies. Unlike inkjet printing, the laser process uses no solvents or aggressive chemicals, nor any consumable items. Pollution to the environment is reduced, and savings in consumable and disposal costs and also downtime for cleanup operations can be realised. Laser marking provides clear and concise results of high quality and reproducibility. Scrap costs associated with poor quality marking from other technologies are virtually eliminated. The very fine laser beam enables high resolution images and also very small character height (less than 1mm), useful where space on the component is limited.

As all the information to be marked is under programmable control, the data can be changed from part to part on the fly. For example, serial numbers can be automatically incremented, date and time stamps created, batch and shift numbers updated. This data can take the form of alpha-numeric text, or machine readable formats such as barcodes and 2D datamatrix codes. Artwork and logos can be imported directly as CAD files.

Many laser marker installations take the form off stand-alone systems, but the technology also lends itself to automation. The high speed and short cycle time ensures the marking process is not a bottleneck in the production line, and the hardware and software interfaces are designed for ease of integration with the manufacturing system.

Laser Lines Ltd
Tel: 01295 672 500
Email: info@laserlines.co.uk
www.laserlines.co.uk

'All-in-one' marking gun

E-mark is an 'all-in-one' marking gun. Its built-in marking head, programming keypad and battery make it a unique marking system that is the subject of an international patent application.

100 percent portable and self-powered
Well-balanced, weighing in at less than 3 kg and featuring an ergonomic grip, e-mark is comfortable to hold and operate. It comes complete with a powerful 18 V Li-ion battery that can hold its charge for up to four hours under normal use (500 markings) and an extra battery so that users never run out of power. In addition, e-mark comes with a special case for convenient storage and transport between job sites. All these features and accessories, and yet e-mark is the smallest battery-powered marking gun on the market.

Accurate marking
Featuring a 60 mm x 25 mm marking window and a tungsten carbide stylus, e-mark quickly indents alphanumeric text, logos and Data Matrix codes directly onto substrates ranging from plastic to the toughest metals. The optional front-end support makes it possible to mark areas that were previously inaccessible. Marking large parts that cannot be moved (whether in workshops or on worksites) has never been simpler than with e-mark.

Intuitive and easy-to-use
The e-mark software features clear, icon-driven menus and the top-mounted keypad makes entering characters easy and fast. Simply hold the gun on both sides with both hands and press the keys with your thumbs. The marking window measures 60 mm x 25 mm. The screen is configured so that the marking displayed is at the same scale as the marking to be indented and provide a better visual preview of the programming line. E-mark also features a software interface for managing files from a PC. Adjusting the stylus/part distance for flawless marking results takes no time at all thanks to the ultrafast-locking adjustment knob.

Designed for industrial applications

The e-mark marking gun features a cast aluminium body for the best weight/strength ratio and a membrane keypad that withstands the harshest environments. Lastly, it has no bothersome cables that can present shock or trip hazards.

UK agent:
Universal Marking Systems Ltd
Tel: 020 8898 4884
Email: info@ums.co.uk
www.ums.co.uk
www.sic-marking.com

Efficient control of waterjet systems

STM's CNC technology impressively shows how easy operation can be combined with performance, safety and cost-efficiency

Waterjet systems from STM are in high demand, due to a large extent to the unusual CNC control. Users are offered a separate terminal in the form of an office computer on which the operator can control the complete manufacturing process with the familiar Windows® surface.

This not only makes production processes faster but also safer and more reasonably priced. Unlike with the usual industrial PC, the office terminal ensures that the system can be kept up to day in terms of drivers, software and virus protection without problems and the usual expenses. This solution additionally prevents operating errors because users never have to leave the familiar Windows screen.

With this technology, STM ensures trouble-free operation of its waterjet systems for more than 10 years, generally without any hardware replacements. STM customers can automatically enjoy these advantages because the CNC control is included in the delivery scope of all STM systems as standard. The waterjet specialist once again emphasises its claim to maximise functionality and economic efficiency with a technology standard that is thought out down to the last detail.

The STM CNC control works in parallel with a classic HP office computer and thus creates the basis for good quality at a reasonable price. It is also possible to use customer Windows PCs. The learning curve is minimal in all cases thanks to the universally familiar user interfaces and the PC can be integrated in the existing system by the company IT department without any problems. Company software can additionally be installed at any time. The CNC hardware always stays safe and

completely separate from PC and user and ata is transferred in the background. This means that the PC merely serves for visual checks of the CNC processes. The problems associated with industry PCs are thus history.

With this simple but ingenious solution, users of STM systems can effortlessly keep up with technical standards for many years after the purchase without the need for expensive hardware replacements.

The application engineers at STM and Maximator JET need only a few days to be able to say if and how waterjet cutting can be integrated meaningfully into the individual manufacturing process on the basis of using needs assessments, cost-benefit calculations or business plans. Interested parties can also order test cutting and operate test machines without obligation at any time. Second-hand systems and financing models mean that procuring a machine is still possible even if the room for financial manoeuvre is tight.

For more than 25 years, STM has developed future-proof production solutions, primarily for the steel, aluminium, metal, plastic, stone and glass industries, which are most notable for their efficiency, ease-of-use and resistance to wear. STM also places great emphasis on innovative full service. In so doing, it ensures that its individual manufacturing processes are continually matched to the current requirements of its customers. STM cooperates with the German, Schweinfurt-based company, Maximator JET GmbH in the fields of development and sales. In return, Maximator JET relies on STM systems for their reliability and quality.

Maximator JET GmbH is a Europe-wide active innovator in the high performance segment of the waterjet cutting industry. Since 1999, the Schweinfurt company has focused on developing and realising highly specialised waterjet cutting systems for all kinds of special applications. The company stands for pioneering production solutions and unlimited individualisation options. For this purpose, as well as based on the unprecedented quality and reliability,

Maximator JET works exclusively with systems from STM series. Alongside its in-house manufactured 2D and 3D cutting systems, its product range also includes standard systems made by the Austrian system partner, high pressure pumps of up to 6,200 bar, high pressure components, equipment and a correspondingly comprehensive support and maintenance service

For further information, visit **www.stm.at** and **www.maximator-jet.de** or contact:

UK Agent:
Peter Hawkins Ltd
Tel: 01332 864747
Email: peter@phawkins.co.uk
www.phawkins.co.uk

OMAX® JetMachining® Centers provide premium high-precision abrasive waterjet cutting.

THE POWER OF ABRASION.

Just as erosive forces create intricate rock patterns, advanced abrasive waterjet technology enables OMAX JetMachining Centers to cut complex workpieces from virtually any material with the utmost precision and speed. **Experience the power of OMAX.**

ADVANCED ABRASIVE WATERJET SYSTEMS | +1.253.872.2300 | WWW.OMAX.COM

OMAX®

Reedway Precision expands with new waterjet technology

Reedway Precision Ltd has recently taken delivery of a new Water Jet Sweden system as part of its continued expansion programme. The system will allow the Hampshire-based firm to focus on new and expanding markets in the automotive, aerospace, marine and energy sectors.

Reedway realised the opportunity for future growth in precision waterjet cutting and chose the Swedish system for its reliability and its repeatability to produce precise components. Recognising the competitive edge gained by the ability to produce finished parts, often without secondary machining processes, Reedway can slash lead times and reduce costs to their clients. This is on top of the ability to offer more of a single stop solution.

Based on their in-depth knowledge of the waterjet industry they chose the ultra precise NCP 40 machine, from Water Jet Sweden; coupled with the support from WJS UK it has allowed the company to break in to some exciting new markets, including some of the leading global automotive and aerospace OEM's.

Rob Simmons, managing director of Reedway Precision says: "The support in manufacturing pre-production parts to the highest definition and accuracy before delivery of the machine was a testament to the experience of WJS UK and the precision of the Water Jet Sweden system. We had been unable to have parts manufactured through normal sub contract channels without the need for secondary machining. Being able to secure contracts before the machine had even arrived was a great boost to this arm of our business"

The company understood the benefit of increased production from a 4 m x 2 m table with twin independent cutting heads. With the added option of Water Jet Sweden's Fine Abrasive Water Jet (FAWJ) technology it has ensured maximum production goes through the machine day and night. One key differentiator in the market was Water Jet Sweden's ability to offer a well developed and proven "lights out" package allowing unmanned operation with remote monitoring of the key process characteristics.

Rob Simmons is enthusiastic about the working partnership with WJS UK and the value that the consultative approach added, arriving together at a system configuration that while not being a "special" build machine, was specifically configured from standard components to specifically fit his business.

An example is the Microcut solution, added as an option on station two, giving Reedway the ability to machine micro parts to capitalise on growing market sectors. Having the ability to cut micro parts, without any heat affected zone, to tolerances better than 0.05 mm places them in a prime position to service their existing client base, as well as attracting new contracts from other industries.

In fact it allowed them to win a contract with a leading aerospace company for the retrofit of new passenger jets. The airline searched the world for a company to be able to produce the precise components with intricate detail for their first class cabins and after successful test cutting, at WJS's UK demo facility, Reedway were asked to produce hundreds of parts using the Microjet technology. Microjet technology can produce detail with radius down to 0.15 mm.

The intuitive software provided by Water Jet Sweden makes the programming of such an advanced system very simple. Together with the training provided on-site by WJS UK personnel, Reedway engineers were in full production within a week of the machine arriving on site.

The new equipment should allow Reedway to employ further staff and WJS UK director Chris Baker says: "The new investment will help this exciting business continue to grow".

''It's been a pleasure to deal with the owner Rob Simmons who has the ambition and foresight to see the potential of the Water Jet Sweden technology and the benefits it will bring to his business. This will be the most advanced machine supplied to the South Coast and we look forward to assisting them with expanding their capability and serving their client base."

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

Bystronic

Best choice.

Get the fleximum

Waterjet cutting has never been so multifaceted. **ByJet Flex** combines 2D and 3D technology on one machine platform. And does so for work surfaces of up to 10 × 3 meters.

Laser | Bending | Waterjet
waterjetcuttingnews.com

The 3rd dimension of waterjet cutting

Waterjet cutting has never been so versatile. Bystronic is expanding the spectrum of applications of the ByJet Flex with a new 3D cutting head. Now users can upgrade the machine platform from 2D to 3D technology at any time.

Processing beveled edges up to an angle of 45 degrees and straight edges with a high level of productivity. In the future, in the field of waterjet cutting, there will simply be no way around 3D technology, because its range of applications is growing. However, not every company already has an order situation that allows a pure 3D cutting system to be operated economically in day-to-day business.

With the ByJet Flex machine platform, Bystronic offers an innovative solution. With immediate effect, the variable 2D platform can be upgraded with a modular 3D cutting head. This opens up new business fields for 3D cutting, but simultaneously allows competitiveness in the 2D cutting business to be maintained.

The ByJet Flex unites 2D and 3D technology on a single machine platform

Everything on one platform

Thanks to this freedom, users can gradually build up orders for 3D cutting. Whenever the use of a 3D cutting head is required, the ByJet Flex can be converted. The variable machine concept of the ByJet Flex enables a quick conversion during day-to-day business. The waterjet cutting system can be equipped with up to two 3D cutting heads that work in parallel. This not only increases the range of applications, but also the productivity of the ByJet Flex. When order levels are low, it is also possible to equip just a single 3D cutting head. Moreover, this cutting head can be used for several machines of the same type. The exchange of cutting heads can be carried out effortlessly by the users.

Integrated 3D technology

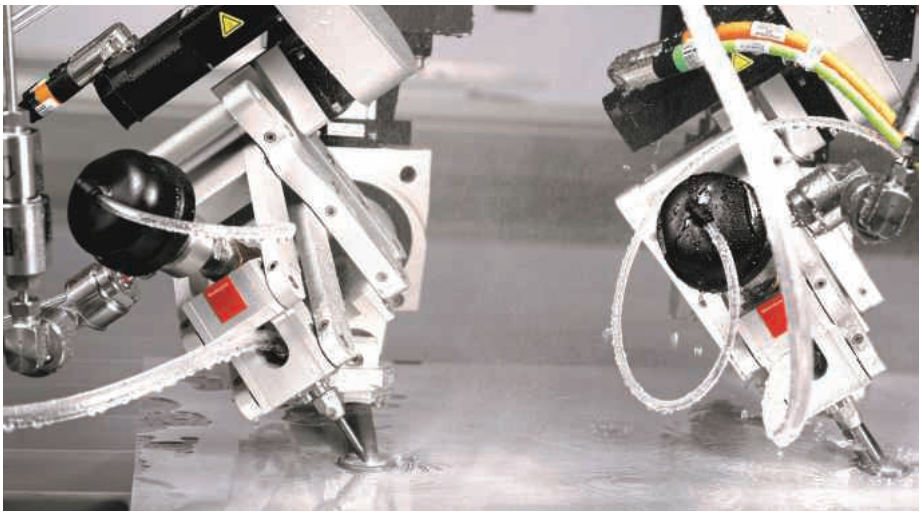
ByMotion ensures the reliable integration of 3D technology on the ByJet Flex. The control package, which was developed by Bystronic, regulates all the cutting applications on the machine platform and hence simplifies fast switching between 2D and 3D applications during day-to-day business. When the cutting head is exchanged, ByMotion automatically recognises the newly equipped 3D cutting head and, amongst other things, adjusts the cutting area margins to the angle of the 3D cutting head.

ByMotion also supports the user with automatically calibrating height sensing. The precise positioning of the cutting head in relation to the surface of the workpiece is crucial for successful 3D cutting. If a cutting head at a 45 degree angle is positioned too high above the workpiece, the cut part will be too large. ByMotion prevents this from happening.

Continuous height sensing

The 3D cutting head operates with continuous height sensing. This enables the cutting head to follow the surface of the workpiece, in order to maintain a constant distance between the cutting nozzle and the workpiece. Thus, deviations that could occur due to a bent metal sheet or by material lying unevenly on the cutting grid are corrected automatically. In addition, the height sensing prevents collisions of the 3D cutting head, for example with protruding cut parts. If the protective sensing ring comes into contact with protruding cut parts, the ByJet Flex stops the cutting head.

Depending on the order situation, it is also possible to replace just one 2D cutting head with a 3D cutting head. This maintains the possibility to process 2D applications



Bystronic expands the spectrum of applications for the ByJet Flex with a new 3D cutting head

Unique 3D kinematics

The special kinematics of the 3D cutting head enable precise pivoting motions around the A and B axes. When pivoting, the cutting head revolves only around the focal

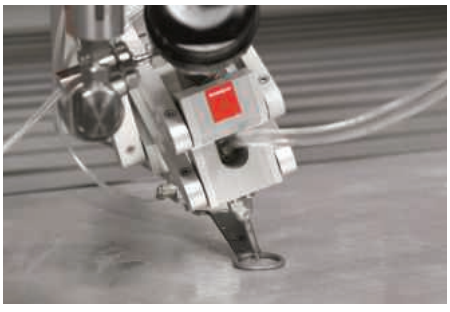
point of the cutting nozzle. This enables a precise cutting process without loss of time or speed. And eliminates the need for complex deflection and corrective maneuvers in the linear axes.

Bevel Manager for 3D cutting plans
In order to make the cutting preparation process simple and error-free, users generate the cutting plans for 3D applications on the ByJet Flex using the Bevel Manager. The software module is precisely tailored to the new 3D cutting head and is integrated into BySoft 7 as an add-on module.

For more information visit:
www.3dcutting.bystronic.com

Bystronic is a worldwide active supplier of high-quality solutions for the economical processing of sheet metal, other sheet materials and tubes. Customers profit from application-oriented systems and services for laser and waterjet cutting processes as well as bending. Bystronic stands for reliability, high-performance innovation, an outstanding price-performance ratio and user-friendly operation. The focus is on the automation of the complete material and data flow of the cutting and bending process chain. As a partner, Bystronic offers security, continuity and transparency, and is represented regionally by competent employees who speak the customer's local native language.

The simple operator guidance enables the user to achieve precision with just a few operating steps



The new 3D cutting head operates with continuous height sensing

The cutting head revolves only around the focal point of the cutting nozzle. This enables a precise cutting process

Bystronic UK Ltd
Tel: 0844 848 5850
Email: david.larcombe@bystronic.com
www.bystronic.com

WEC Group celebrates a Flow hat-trick

In less than 2 years, WEC Group has established a thriving waterjet business at its Blackburn facility, resulting in the installation of a third Flow waterjet in March of this year. This system chosen by WEC is the Mach3 Series 7.3 m x 2.0 m with Dynamic Waterjet & 6500 bar pump. This will complement the existing systems which share the same cutting speed capability.

With over 30 years in business, WEC Group is one of the largest engineering and fabrication companies in the UK and has recently been awarded with AS 9100 Aerospace Accreditation. With around 600 staff and with 500,000 sq. ft. manufacturing floor space, WEC Group is well placed to meet any engineering requirement and provides services across a broad range of industries such as nuclear, aerospace, oil & gas, defence, rail and marine.

The company installed its first Flow 6500 bar Dynamic Waterjet at its new WECjet Ltd facility in August 2013 with the second machine following shortly afterwards. Group commercial director, Wayne Wild had always planned for a multi-machine waterjet facility, but the speed of progress was actually faster than even he had expected.

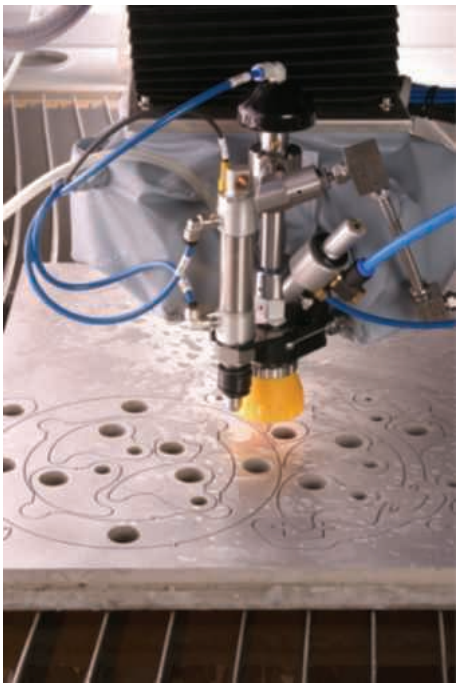
The new Mach3 Series not only has a larger cutting area to accommodate standard 6m plates, but also has safety zones that allow loading and unloading of smaller plates. One nested plate can be cutting whilst the other zone is unloaded then reloaded with the next job. This has resulted in a more flexible solution but more importantly has increased production capability which benefits their customers in terms of part price and delivery time.

The combination of Dynamic Waterjet with 6500 bar pump gives not only very precise geometry but very fast cutting speeds This technology is complementary to the company's vast laser cutting capability and also helps with the machining division within WEC.

Another feature delivered with the new system is the FlowXpert 2015 software. Now solid models provided by customers in 3D formats such as STEP files can be processed without the need for editing faces or having to output 2D DXF. This powerful software also uses Flow's Smartstream models to put the waterjet cutting technology onto the part. The cutting technology is easy to apply for any material and thickness and of course will compensate for taper and jetlag. .

The decision to continue with 6500 bar Dynamic Waterjet technology was based upon Flow's technology and production capability. Not only are the parts from the Dynamic Waterjet the best in terms of quality and accuracy, but also the production rates produced by the 6500 bar HyperPressure technology are much higher than 4000 bar systems.

Gareth Taylor, assistant general manager of WEC Group Laser & Waterjet Division



points out that the addition of the Flow Waterjet to their company provides it with more production capability and has allowed it to win new business for this and other divisions within WEC Group. According to Gareth Taylor, the Flow Dynamic Waterjet complements the existing portfolio of machines and confirms the Group's position as a market leader for engineering and fabrication in the UK.

WEC Group operates within ISO 9001:2008 requirements, is AS 9100 aerospace accredited for laser cutting and waterjet Cutting, works to ASME 8 Coded Welding standards and has achieved full compliance with BS/EN 1090-1 CE Marking, demonstrating the ability to consistently deliver high quality products conforming to customer demands and applicable statutory and regulatory requirements. This endorses WEC Group's commitment to the quality of work, products, systems, procedures and service.

Flow UK Ltd
Tel: 01455 895300
Email: info-uk@flowcorp.com
www.flowwaterjet.com

WEC Group
Tel: 01254 773718
Email: info@wecl.co.uk
www.wecl.co.uk

New filtration solution for waterjet cutting systems

Thanks to a new flocculant, the WTS Eco water treatment system from WOMA enables waterjet cutting system operators to discharge wastewater into the sewage for the first time in an eco-friendly way that comlies with statutory regulations. The WTS Eco can be easily retrofitted into existing filtration systems at any time.

In the waterjet cutting of metal, stone or plastic, solids and suspended matter can be found in the wastewater along with oil added for the cutting process. Solids can be removed easily by means of an extractor or other techniques. This has not previously been possible with oil and suspended matter dissolved in the water. They could not be filtered out and the wastewater failed in many cases to comply with the threshold values set by health & safety authorities, in the case of Germany by the Water Resources Act. With the aid of the WOMA WTS Eco water treatment system, even fine dirt and suspended matter can be removed before the wastewater is discharged into the sewage.

The system is fitted after the extractor and the sedimentation tank, both of which only filter solids from the water. The WOMA WTS Eco adds a flocculant that binds residual suspended matter and even the smallest droplets of oil. They are then entirely caught by the system's upstream sand filter.

Extending pump service life

With the chemical stabiliser IWT LongLife, WOMA lengthens the service life of ultra-high pressure pumps and thereby improves the process reliability of production workflows. The dosage unit for the additive can be retrofitted at any time.

If waterjet cutting systems break down before the end of their specified service life, the water quality is usually to blame. If the water is too hard, for example, this can lead to deposits and premature wear and tear caused by crystallisation. Worn-out parts lead to corrosion in the system.

WOMA's IWT LongLife water additive offers protection and wear and tear of the pump and nozzles is reduced, lengthening the system's service life by keeping outages to a minimum.

Before the water is fed to the pump, a dosage unit adds a chemical stabiliser to the water intake drop by drop. When in the water, the additive prevents crystallisation of dissolved solids such as silicon, calcium and magnesium, even under high pressure and at rising temperatures.

WOMA GmbH Tel: 0049 2065 3040
Email: info@woma.de www.woma.de

Job shop explains the benefits of waterjet machining

With customers looking for faster turnarounds and shorter deadlines, and sales projections looking positive, Waterjet West Inc. has upgraded its shop to add a third abrasive waterjet system.

A waterjet-only job shop in San Diego's North County, Waterjet West was running its two OMAX 55100 JetMachining Centers at near full capacity, creating customised parts for diverse industries such as aerospace, medical, architectural, and energy. The inherent benefits of abrasive waterjet machining, coupled with its high versatility, allow Waterjet West to provide just-in-time manufacturing, reverse engineering solutions and overall quick turnaround cutting services. This flexibility has allowed the company to expand their customer base, even during times of economic fluctuation.

"If I spent the same amount of money to purchase a laser instead of a waterjet, I would be cutting strictly sheet metal and thinner gauge material," says Scott Cormany, owner of Waterjet West. "With waterjet, there is room to expand."

After restructuring his shop and upgrading the power, he added an OMAX 60120 bridge-style JetMachining Center, complete with the advanced Tilt-A-Jet taper elimination cutting head. The 60120 is capable of cutting 5' x 10' sheets with ease and the Tilt-A-Jet automatically adjusts to eliminate taper from the parts, resulting in precision edges that often require no secondary finishing. With faster cutting and shorter production cycles, they are able to better meet the shorter deadlines of their clients.

With over 30 years of engineering experience and knowing about manufacturing processes, Scott Cormany is able to connect with clients and better understand their needs and goals from the beginning. Often times this requires blueprint evaluation and reverse engineering of a part, which the OMAX system is ideally configured to handle. The OMAX Intelli-MAX Software Suite comes with tools to simplify the process, as he notes:

"With reverse engineering, we've essentially been able to take blueprints, sketches, and mylars, scan them and input them into the OMAX software, where we trace over the original blueprint and use the scaling features to cut a prototype."

This comes in useful when recreating older-style aircraft spare components, for which only mylar drawings exist.

The aerospace industry is also one that can take advantage of net blank shapes, for which abrasive waterjet machining is an excellent match. With a net blank shape, the overall manufacturing time is greatly reduced, with a corresponding significant lowering in cost per part. With integrated nesting tools in the OMAX software, it is possible to closely nest shapes to minimise scrap waste in expensive materials such as titanium. Since there is no heat affected zone with waterjet cutting, parts can be placed very close to one another, and in some cases can even share a common line, further reducing waste.

"With conventional machining techniques such as milling, a customer wouldn't get as much yield from the plate," states Scott Cormany. "It would take up their valuable machine time which basically translates into capacity for them. So by spending $ 60 to get a part cut out by us, they save two hours on the mill, and those mill operation times are much more expensive than waterjet times."

With a third machine ready to pick up additional work, and a tapering of their existing client base, he examined other industries that could benefit from their abrasive waterjet services. Underground utilities provided an interesting application whose requirements were perfect for abrasive waterjet.

"Underground utilities and related industries were not markets we knew much about. So we began to explore how we might be able to help with our services."

As above ground structures become saturated, many communities are shifting to trenchless technology, which address growing concerns over environment, costs, and safety regulations while minimising surface and subsurface disruptions. To keep the different conduits separated, the utility contractors utilise sturdy spacers to use as they feed the lines through. Scott Cormany is able to quickly and efficiently cut custom job-specific high density polyethylene (HDPE) spacers that work perfectly for these utilities, helping keep them on schedule.

Another market ripe for abrasive waterjet cutting is with hydraulic, pneumatic, and electrical actuators. Factories, plants, and utility companies all utilise these actuators, and very often these are custom built. This means they require custom parts when they break down and the abrasive waterjet is the perfect solution, with its ability to quickly machine parts in almost any material up to several inches thick.

A Government-mandated change following the massive San Bruno pipeline

explosion required actuator valves to be installed to automatically shut down the flow when a pressure differential was detected. Waterjet West was given a job for custom-made flanges for a natural gas pipeline that needed to be installed immediately in order for the project to continue.

"We were contacted to make the flanges for the extension with only one day lead-time," says Scott Cormany. "We were able to quickly respond with minimal delay and have the finished parts on their dock the next day."

Prototyping is another field where rapid turnaround is essential. When he collaborated with the orthopedic industry, he produced a yoke design for a knee brace support by cutting small quantity samples. The cutting flexibility of the OMAX abrasive waterjet allowed him to economically work through the trial and error process in developing a successful prototype.

"If someone were to go the conventional route to develop the yoke, which is to build a punch die and spend a lot of money getting the product to the prototype stage, it may not work during the test phase. With our OMAX, they get the versatility of the waterjet. We are able to take the design and make product parts within hours instead of weeks. The customer is able to test their prototype and make modifications, and then we can recut based on those modifications."

With market conditions able to change on a dime, having a versatile and flexible machine tools like the OMAX line is essential.

"The OMAX products have proven themselves time and time again," says Scott Cormany, "and we are able to adjust our market focus and use our expanded capacity to win new customers and expand our depth with existing customers."

As it continues to offer waterjet solutions for a variety of industry projects, Waterjet West continues to establish a knowledgeable, appreciative, and captive audience.

UK Distributor:
Aquajet Machining Systems Ltd
Tel: 01244 409199
Email: peter.lucas@omax.com
www.omax.com

Jet Edge precision waterjets now available in the UK

Longstanding Jet Edge mobile waterjet equipment dealer adds Jet Edge precision waterjet cutting systems to its extensive product line

Jet Edge Inc, a leading manufacturer of precision and mobile ultra-high pressure waterjet systems, has announced that its longstanding UK mobile waterjet dealer Aquablast Ltd has added Jet Edge precision waterjets to its extensive product line.

Based in Beccles, Suffolk, with service centres in the Mediterranean and the Arabian Gulf, Aquablast has represented Jet Edge waterjets for more than 20 years and has extensive knowledge of ultra-high pressure waterjet technology and its countless applications. In addition to representing Jet Edge, Aquablast also manufactures its own line of waterjetting equipment and carries a wide range of mobile waterjet systems and support products. The company also offers mobile waterjet cutting and surface preparation services and safety training.

With the addition of Jet Edge's precision waterjet cutting products, Aquablast is now authorised to sell and service Jet Edge's full product line in the UK, including Jet Edge's CE-marked 5-axis and 3-axis waterjet motion systems, its hydraulic intensifier and direct drive pumps, and portable cutting systems and water blasting equipment.

Jet Edge offers the widest range of waterjet pumps in the industry, from 36-280hp, in 36KSI (2500 bar), 60KSI (4000 bar) and 90KSI (6200 bar) models, electric and diesel.

"We are thrilled to have Aquablast representing our entire product line, including our precision shape cutting systems and mobile systems," says David Anderson, Jet Edge international sales manager. "They have extensive experience with our hydraulic intensifier pump technology and are very knowledgeable about our capabilities. Their 30 years of experience in the waterjet industry, along with their applications expertise, will be a tremendous benefit to UK manufacturers who are adding the waterjet process to their manufacturing capabilities."

Jet Edge Inc
Tel: 001 763 497 8700
Email: sales@jetedge.com
www.jetedge.com

Aquablast Ltd
Tel: 01502 714143
Email: sales@aquablast.co.uk
www.aquablast.co.uk

Jet Edge honoured a second time

Waterjet systems manufacurer Jet Edge Inc has been honoured with a second I-94 West Chamber of Commerce Manufacturing Excellence Award. Awarded to a business or organisation which delivers excellence in service to and/or operational practices within the manufacturing or industrial services sector, the award recognises Jet Edge's sound business practices, utilisation of industry systems and leadership in its field when compared to industry benchmarks. Jet Edge received the Chamber's inaugural Manufacturing Excellence Award in 2012.

Jaimie Larson of Jet Edge and award sponsor Jeff Mueller of 21st Century Bank. (Photo courtesy I-94 West Chamber of Commerce)

"We are extremely honoured to be recognised by I-94 West Chamber for a second time," says Jude Lague, Jet Edge president. "It is quite a compliment to be honored by our local business community and to be recognised alongside some of our community's finest leaders and businesses."

Beakbane covers protect waterjet cutter

Cheshire-based Aquacut was established in the 1990s and pioneered the use of waterjet cutting in the building sector.

Building, construction and architectural work still accounts for 90 percent of its work, as managing director Stuart Middleton explains: "The majority of what it does is cutting porcelain and ceramic tiles, which can be as simple as trimming them to size or it can involve cutting them into complex shapes. We also cut all sorts of stone, for example limestone, sandstone, marble, granite, and slate, as well as metals, glass, composite materials, rubber, plastics and even paper."

The cutting process involves generating a high-pressure jet of water, which picks up fine abrasive garnet sand and is projected out of a focusing tube onto the workpiece at around three times the speed of sound. This cuts all kinds of materials quickly, cleanly and with almost no thermal input.

The cutting head moves along a gantry, driven by a rack and pinion and running on rails and bearings.

However, as Stuart Middleton explains: "Before the jet breaks through the material that you are cutting there will be a lot of splash-back. This is a combination of three things: the water, the highly abrasive garnet sand and the very fine powder that has been abraded from the workpiece."

This mixture can get into the drives and bearings of the machines and acts as a grinding paste which can destroy the mechanical components.

"The bearings are quite expensive and it can cost £300 to change a set of bearings, so you don't want to be grinding them away. It isn't just the cost of the bearings themselves, it is the downtime too.

"And if you have a catastrophic bearing failure when you are cutting, you might even ruin the job you are cutting, and for some of these materials that could work out expensive. So there are a number of benefits if you can avoid the problem."

That is when he called in Beakbane to come up with a solution. After measuring up the machine, examining the old covers and looking at the working environment, Beakbane proposed a set of polyurethane-coated polyester folding fabric concertina covers which would withstand the wet environment and prevent any abrasive dust or slurry from getting into the drive mechanism.

Beakbane then designed and manufactured a bespoke set of covers and fitted them to the machine.

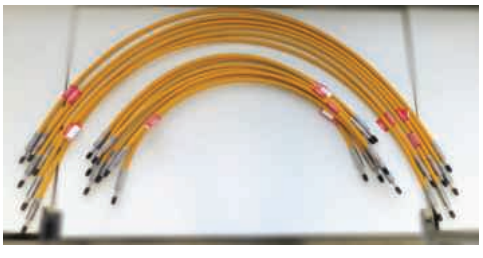
Beakbane Ltd
Tel: 01562 820561
www.beakbane.co.uk

A flexible alternative to rigid high pressure tubing

Most waterjet cutting systems use rigid stainless steel tubing for routing high pressure water from the pump to the cutting head. This consists of a lot of pipe sections and connectors and normally is not flexible. It can be if a semirigid steel material is used, but such a construction needs a lot of space. As an alternative, KMT Waterjet Systems offers steel-reinforced high pressure hoses which, compared to steel piping, allow for a higher degree of flexibility when setting up high pressure lines.

Very often the use of flexible high pressure hoses, which can be installed up to a maximum pressure of 4,000 bar, facilitates the high pressure water supply for waterjet cutting systems. The installation is less complex compared to a rigid tubing and leaves a certain degree of flexibility of the hoses even when they are set under pressure.

The fields of application for high pressure hoses are numerous as they show their advantages wherever the rigid construction



of the steel tubing meets its limits. For instance, a cutting head can be installed flexibly in the rather inaccessible interior of a continuously working production line. In such a case, there may not be the space for a semirigid "whip" made of stainless steel.

If the piping system is constantly vibrating due to the machine design or the application, the flexible hoses can act as a vibration damper thus making the complete system more stable.

The prototype of a cutting system can be supplied with high pressure water easily without the need of laboriously installing the final high pressure tubing. That is especially useful for robot applications, as the motion sequences of the robot arms can be tested using the easy-to-install flexible hoses.

Due to their features and characteristics, high pressure hoses are particularly suitable for applications at comparable low pressure ranges. Often, these are pure water cutting applications for the processing of insulation material, soft construction material, foam material or paper.

KMT offers high pressure hoses made of a specially bonded multilayer stainless steel mesh which includes ferrule terminals of 316 stainless steel (V4A). The interior of the hoses is lined with a resistant core of polyoxymethylene, and the wear-resistant polyamide cladding is easily cleanable. The hoses come in standard lengths of two to five metres, however, special lengths are possible on request.

KMT Waterjet Systems
Tel: 01384 408892
Email: wolfgang.emrich@kmt-waterjet.com
www.kmt-waterjet.com

Overwhelming success

Confirmation that TRUMPF UK is on course to register another record sales year came at the end of a very successful Open House week for the Luton-based company. The event welcomed more than 250 people from the OEM and subcontracting sectors, many of whom were first time visitors.

TRUMPF was also delighted to receive orders for machines from each of its technology groups and have the opportunity to introduce its new TruServices Centre; a £160,000 hub that supports customers throughout the life cycle of their machines and beyond.

TRUMPF Open House featured a number of notable firsts. The star attraction was the world's first public showing of the new TruLaser 3030 fiber laser machine with BrightLine fiber technology. This technology makes it possible to cut both thick and thin materials on a solid-state laser machine with equal quality and cost-efficiency, giving manufacturers far greater flexibility than ever before.

Also new to the UK was the compact TruPunch 2000 punching and profiling machine and the TruMark 5010, available as a mobile laser marker or for easy integration into the production line.

One of the highest value orders received during Open House was from the Midlands subcontractor, Lasershape. The company is growing its fleet of TRUMPF 2D flatbed laser cutting machines with the addition of a TruLaser 5030 fiber, its fourth installation of this highly productive fibre-guided machine.

BrightLine fiber, which continued to be such an important feature at Open House, also made a significant contribution to the company's 2014/2015 sales performance.

Last year, TRUMPF marked its 40th year in operation with its highest ever turnover. With three months left in its current financial year TRUMPF is set to top that record breaking figure by around 5 percent to close at £47 m.

TruLaser 3030 fiber with Brightline fiber technology

The new Tru-Laser 3030 with Brightline fiber technology is the perfect solution for job shops that are looking for a mid-range machine that can process a lot of thin sheets and mild steel but also has the flexibility to process a wider range of thicknesses, materials and even highly reflective metals. The basis of this new addition is the TruLaser 3030 fiber flat-bed laser machine, part of the TruLaser 3000 Series; itself, the most successful machine range in the UK. At its heart is the TruDisk laser which is guided through a fibre to the cutting head.

What gives this machine its distinct edge, however, is the addition of the patented BrightLine fiber technology. Essentially this enables a flying change between maximum rates for thin sheets and best laser cut quality in thick materials during daily operation. The result is unprecedented manufacturing flexibility which is proving to be a game changer for many job shops. At the thin end of the scale, sheets can be cut with even more productivity than before while also saving energy compared to the previous generation machines. Conversely, the machine is equally efficient at cutting mild steel up to 25 mm thick and stainless steel up to 20 mm, without any compromise on quality. Indeed the edge quality is much better than that provided by a conventional solid-state or CO_2 laser. The clean cutting edge also makes it easier to extract parts from the scrap skeleton which underpins

process reliability, a very important factor for automatic unloading.

The TruLaser 3030 fiber with BrightLine fiber not only processes thin and thick sheet with equal quality but is also ideal for cutting non-ferrous metals such as copper and brass, all at the speed of 140 m/min simultaneously.

Entry-level punching machine with cost-effective automation

The TruPunch 2000 was demonstrated for the first time in the UK at the TRUMPF Open House. High axis speeds of up to 108 m/min, short setup times and maximum stroke rate of 900 per minute when punching and 1,600 when marking makes the TruPunch 2000 the most productive and flexible machine in its class. This is a basic and affordable machine based on a time-tested concept for proven parts accuracy.This new addition to the TruPunch range is designed to make it cost-effective for any manufacturer to enter the world of automated production. The combination of high performance and low investment cost means the machine is even economical when operated at low capacity.

The TruPunch 2000 can be supplied as a stand-alone or automated machine or one whose automation is added as opportunities arise. The machine itself has a small footprint and, as automation comes in the form of SheetMaster Compact, the automated version can be comfortably accommodated even when production space is at a premium.

Brush tables with loading and unloading aids ensurecareful materials' handling and the large selection of TRUMPF tools available with the machine enables a wide variety of parts to be produced. This is largely thanks to 360° tool rotation and when this is ability is combined with TRUMPF MultiTool, the possibilities are significantly increased. The on-demand drive feature means that the punching head hydraulics always work at an optimum power level. Not only does this limit power consumption but also means that less noise is generated during non-productive times. Additional gains in process reliability and efficient material utilisation are made possible by skeleton-free processing without the need for repositioning and in only one clamping operation.

Simple, cost-effective bending

The TruBend 3000 Series press brakes from TRUMPF allow cost-effective bending even with low throughput. This is thanks to the comparatively low investment cost of the machines and also their high productivity through easy setup, fast axis-speeds, and fast tool change; automatic crowning ensures consistent angles.

The latest addition to the range is the TruBend 3066 with a press force of 600kN and 2 m bending length. It is supplied as standard with a two-axis back gauge but can also be specified with a four or five-axis back gauge. This makes it possible to position sheet metal securely, even where complex part geometries are involved. The operating concept is simple and intuitive. The machine's operator can sketch components and program them graphically at a large display with modern multi-touch control. The exact bending parameters are calculated by the control circuits, based on TRUMPF technology data. 3D visualisation further simplifies the work and examines the design for potential collisions. If suitable bending programs already exist, they can be imported either via a USB interface or a network connection. Even third-party tools can be used without an adaptor. The customer can select from a number of different tool clamping concepts. Manual clamping is standard for which the upper and lower tools are secured with Allen screws. The quick clamp option reduces setup times, as the upper tools are rapidly clamped with a lever. The fastest option for setup is automatic hydraulic clamping. In addition, all the clamping systems automatically centre the tools which can be inserted vertically. Both these features reduce clamping times.

The BendGuard optoelectronic safetysystem uses a light field to monitor the area beneath the upper tool. If there is an interruption, a hand breaking the light field for example, the machine automatically stops. The operator can therefore make full use of the machine's full speed, without risk. The BendGuard is positioned on the sides of

the machine, at the end of the press beam. In preparation for inserting the tools from the side, the BendGuard can be simply swung to the rear so that it does not interfere with the process. The position of the BendGuard can be easily adjusted in increments to accommodate different tool heights. As well as being compact, the TruBend 3000 Series press brakes consume less energy thanks to their advanced drive technology. This is complemented by automatic shutdown of the hydraulics during extended downtimes. The machines are also quick to install as they are delivered completely assembled.

TRUMPF Ltd
Tel: 0844 4820188
Email: sales@uk.trumpf.com
www.uk.trumpf.com

Flatbed laser cutting system

2015 sees the launch of a new model in the Hyperion range of CNC laser machines from Tec Systems Limited. The flatbed laser cutting system is aimed at laser processing of flat sheet metal alloys, and offers a number of benefits in speed and efficiency over other systems on the market. Tec Systems intends that the sheet metal cutter will provide an advanced alternative to traditional laser cutting machines which use CO_2 laser sources. The Hyperion laser cutter is offered with a high power solid state laser achieving several advantages over rival traditional machines. Using a solid state laser, the power of the laser beam is delivered to the workpiece via a flexible fibre optic, avoiding the need for multiple mirrors and beam guides which are used on the CO_2 laser system. The design of the Hyperion range including a fibre laser with no internal moving parts achieves exceptional reliability with lower running costs.

Flatbed laser cutting system

Fitted with up to 3 kW of fibre laser power, the new cutting system is more efficient, requiring less cooling water and lower power consumption to achieve the same cutting speed on sheet metals, in particular it is able to cope well with cutting reflective materials like aluminium and copper without the risk of damaging the laser with back-reflections. For high definition cutting in thinner materials (less than 4 mm) the fibre laser shows a distinct improvement in process speed and cut quality. The heat affected zone is reduced and fine features can be cut without distortion, the system is capable of cutting up to 8 mm thickness of material.

The system is manually loaded by an operator, and parts up to two metres wide and one metre deep can be profiled on the cutting bed, which also features a Z axis to cope with different thicknesses of sheet, a capacitive height-sensing cutting head ensures that the cut quality is consistent even if the material is not flat. An automatic power-operated door is raised at the end of the cutting cycle, allowing the operator to promptly unload the system.

A 3-axis CNC controller drives the machine and is capable of importing DXF or any standard format of CAD files to allow the easy preparation of cutting paths. Servo motors and high precision ballscrews are used throughout for a combination of speed, accuracy and reliability with the split axis design resulting in a very compact footprint.

Tec Systems pioneer UK's most powerful laser system

Automation and Laser specialists Tec Systems are leading the way with the recent supply of a 20 kW laser solution to The Manufacturing Technology Centre (The MTC) in Antsy, West Midlands. UK based Tec Systems were selected from a competitive field of international providers to achieve this forward looking project.

The high profile venture is part of a significant investment by the MTC. Tec's managing director Tony Jones says: "This is a good news story for UK manufacturing. Tec have developed a system which will ensure that British manufacturing is at the forefront of assembly, fabrication and joining technologies." This project demonstrates that the UK can apply research excellence and new technology to enable commercial production to achieve global competitiveness. Tec supplies high end automation and laser solutions for many industry sectors including aerospace and automotive companies. Industry led MTC includes Rolls-Royce, Airbus, and Aero Engine Controls as members. Tec chairman Clayton Sampson reports "Tec's investment in new facilities 3 years ago and its high calibre personnel enables us to achieve this ground breaking project."

Tec's laser cell includes a 20 kW Ytterbium fibre laser with a 4-way beam switch, an active cell guarding structure, a 6-axis robot, two multi axis servo driven manipulators and a range of laser heads and optics to cover a wide range of applications. The cell processes complex 3D components up to 5000 kg and 3 m in diameter. Data monitoring and capture capabilities are built into the cell to allow projects the MTC undertakes for clients to be fully recorded and documented.

Tec Systems Ltd
Tel: 01509 815186
Email: sales@t-e-c-systems.com
www.t-e-c-systems.com

KMF adds more punch to European operation

KMF (Precision Sheet Metal) has expanded the capacity of its facility in Trenčianske Stankovce, Slovakia with the addition of a Trumpf Trupunch 3000 punching machine. The new machine with its 1000 hits/minute punch rate will be used to enhance the service already provided to customers across mainland Europe, particularly those companies that have the need to outsource larger volume production. "This new machine will also enhance the offering we can make to customers due to its tapping and forming capability," says Radim Vaculín, business manager, KMF (Precision Sheet Metal) s.r.o.

The Trumpf Trupunch 3000 doubles the punching capacity for KMF in Slovakia and the new machine also brings with it additional advantages, such as the elimination of repositioning on large format sheets and skeleton free processing which will enhance efficiency and help to reduce manufacturing costs. Because of the increased efficiency of the Trupunch 3000 KMF can reduce lead times through the elimination of manual operations and it also gives customers increased process security by increasing capacity for punching at the Slovakia factory.

"With this investment we are making a clear statement to our existing and potential customers that KMF is willing to make the investment, when it is needed, to enhance the service and support that we provide to customers. This is fully in line with the investment policy at KMF's main manufacturing plant in Newcastle under Lyme," says Radim Vaculín.

Located at the heart of Europe, KMF's Slovakia facility focusses on generating additional business from customers across mainland Europe, and provides KMF with a competitive advantage in its quest to provide sheet metal solutions and integration services to a growing number of customers outside of the UK. It was established in 2012 in response to a growing demand for precision sheet metal from outside of the UK.

KMF are committed to providing world class customer service and solutions in the field of fully integrated bespoke metal work and precision sheet metal fabrication. With sales of over £30 million, 350 committed employees and 110,000 sq ft of manufacturing facilities. KMF customers can be assured of a professional response, production flexibility and total quality commitment at a truly competitive cost.

KMF (Precision Sheet Metal) Ltd
Tel: 01782 569060
Email: g.higgins@kmf.co.uk
www.kmf.co.uk

New entry level fibre laser cutting system

LVD Company nv has expanded its fibre laser cutting systems product line with the introduction of the Lynx FL, a cost efficient fiber laser cutting system. The Lynx FL will debut at CIMT in Beijing, China from April 20th-25th, Stand W2 – 253.

Engineered for cost-efficient laser processing
Lynx offers users the ability to enter the world of fiber laser cutting with the flexibility to process a wide variety of material types and thicknesses all within a modest and cost effective budget.

Versatile material capabilities
Powered by a high efficiency IPG (2 kW) fiber laser source, Lynx provides dynamic, accurate thin sheet processing of traditional sheet metal materials such as mild steel, stainless steel and aluminium with the added versatility to efficiently process metals such as copper and brass. Increased beam absorption of the 1 µm wave length laser beam by the material provides processing speeds up to three times faster than CO_2 laser sources in thin sheet metal.

Automated shuttle change system
A compact design, Lynx maximises uptime with an integrated shuttle table system that allows one table to be loaded while the machine is cutting on the other table. Table change time is only 35 seconds.

Integrated control and drive system
Lynx features an integrated Siemens IU CNC control and drive package guaranteeing the highest accuracy and repeatability even at high speeds.

Cutting head
The new Precitec "Light-Cutter" guarantees high cutting speed with excellent cutting quality. It incorporates an easy and fast protective glass cartridge change, temperature and constant distance control and a crash-protection system.

The LVD Group is a leading manufacturer of a comprehensive range of sheet metal/plate working machine tools and software solutions, including laser cutting systems, punch presses, press brakes, guillotine shears and mid-level automation systems, integrated and supported by its CADMAN® PC-based Windows® compatible software.

LVD-Pullmax Ltd
Tel: 01295 676800
Email: sales@lvduk.com
www.lvdgroup.com

Starrett band saws designed to cut deeper

The recently introduced range of band saw machines from the L.S. Starrett Company offer UK manufacturing companies a cost-effective method of efficiently cutting ferrous and non-ferrous stock raw material. Based on decades of experience designing and producing saw blades, all of Starrett's knowledge and expertise has been applied to the design and build of the semi-automatic machines to provide class-leading material cutting performance.

Ideally suited to a wide range of industry sectors the Starrett S4230 and S4240 semi-automatic machines feature state-of-the-art technology that has been specifically adapted to increase the capabilities of the band sawing machines. As technical support team leader, Graham Munro, explains: "Within many manufacturing businesses the band saw often suffers from mistreatment, and is seen as the 'ugly step-sister'. With this in mind we have designed and built the Starrett machines for ease-of-use, they are very robust with reliability levels twice the industry norm, to help stand up to any harsh treatment."

Both the S4230 and S4240 are semi-automatic band saws that feature cast iron bows for vibration damping and longevity, a minimal footprint and controlled hydraulic blade feed. The S4230 supports productive cutting and is able to cut mitred corners on both the negative (-45°) and positive sides (60°). Fitted with a 1.5 kW motor it can cut material up to 300 mm diameter or 270 mm square. The 2.25 kW motor on the S4240 combined with a rigid structure creates a semi-automatic band saw that is ideal for intensive use and for cutting harder materials up to 300 mm diameter or square. It can also cut mitred corners at angles of between -45° and 75°, making it ideal for intricate work. Both these semi-automatic band saws are equipped with features designed to make their operation as simple as possible, such as Dynamometric blade tensioning. This easy to use feature allows the saw operator to correctly tension the saw blade without any tools. A manual handle is wound to apply tension to the band, with a graduated gauge providing accurate feedback when the correct level of tension is reached for the blade width fitted to the machine.

Another state-of-the-art feature is band saw breakage detection. A micro switch is activated if the blade accidentally breaks and releases the tension from the blade making the saw very safe to use. "We have paid attention to the diameter of the band wheels, they are designed to minimise blade fatigue. However, we know blades can still break which is why we include safety focused features like breakage detection," says Graham Munro.

Of course avoiding breakage is the better option, which is why the S4230 and S4240 feature variable-frequency drive speed controls. Coupled to a worm-drive gearbox to smoothly transfer power through 90° in the minimum amount of space, the variable-frequency drive allows accurate speed selection to cover a wide range of material types and applications. Blade speeds can be infinitely varied between 20 and 85 m/min with a digital readout making selecting the correct cutting conditions for the raw material very straightforward using Starrett 27 mm wide saw blades.

Securely holding the material to be cut is an important consideration and Starrett fit a class-leading hydraulic vice that provides up to 30 kg/cm^2 holding force. However, the system is equipped with a pressure regulator valve that allows the manual reduction of clamping force of the vice jaws. This allows tubes, profiles and thin-walled sections to be firmly held without deformation of material due the pressure applied by the vice.

Designed to increase productivity the clamping part of the vice can be moved by means of two slides, manually released by a single handle that allows the material to be cut clamped either side of the blade. This removes the need to turn the raw material around manually.

The L. S. Starrett Company Ltd
Tel: 01835 863501
Email: jcove@starrett.co.uk
www.starrett.co.uk

Advancing titanium

Acquisition of automatic Danobat Vertical Plate Saw boosts productivity and reduces metal cutting running costs

With a customer base that includes Airbus, BAE Systems, Boeing, Bombardier, Lockheed Martin, and Sikorsky, it's unsurprising that RTI International Metals Ltd is the leading supplier of specialty metals to the aerospace industry.
Part of a worldwide international group of companies, the UK company employs 50 employees with a multi-million pound turnover.

At its UK facility near Tamworth, Staffordshire, the company has recently taken delivery of a Danobat Vertical Plate Saw, supplied by Kettering based Prosaw Limited, to process titanium plate for use in the aerospace industry.

Specially designed to efficiently cut the more difficult materials such as titanium, the Danobat Vertical Plate Saw is equipped with an automatic gripper system to position the plate to be cut to the desired width, whilst the fully automated CNC control allows the operator to enter a batch to process an entire plate in an automatic cycle. Senior manufacturing engineer, Amar Iqbal says: "We are very pleased with the performance of the Danobat system. It has significantly increased our capacity since we took delivery just over six months ago and it completely eliminated our backlog within the first three months of use, which has of course had a hugely beneficial impact on our delivery schedules."

As part of the decision process RTI investigated several bandsaw machine manufacturers from Europe but chose the Danobat machine from Prosaw as they were able to deliver a complete solution for the processing of RTI's products combined with a high level of technical expertise before, during and after the installation.

Amar Iqbal continues: "Prior to taking delivery of the Danobat machine, we were reliant on a single non-automatic saw. Now, due to the completely automatic operation of the Danobat machine it is possible for us to run both saws with the same staffing level as before."

"Additionally, our original manual saw utilises a vapour blade lubricating system which can raise Health and Safety issues, in contrast to the Danobat machine which uses a 'flood coolant system' that not only eliminates those issues, but adds significantly to the blade life, helping to reduce the cost of consumables by up to one third."

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

Two bandsaws do the work of four, saving space and overheads

A pair of KASTO carbide-specification bandsaws cutting nickel alloys will pay for themselves in 40 weeks

Howco, one of the largest independent suppliers of low alloy steel, Duplex and other stainless steels and nickel based alloys to the global oil and gas industry, has installed two additional bandsaws to increase throughput at its largest UK site in Sheffield. The machines, which are designed for cutting with carbide blades, were built by German manufacturer, KASTO and were supplied through its Milton Keynes subsidiary.

Howco Sheffield supplies raw material in a range of sizes up to approximately 1,300 mm diameter/square. It also has one of the industry's best-equipped machine shops in which it manufactures components to customer requirements. These components are used extensively in subsea wellheads, topsides, downhole and surface drilling, evaluation, completion, production and intervention.

A sharp upturn in business recently resulted in turnover increasing by 36 percent. It was consequently necessary to expand the number of bandsaws on site, which stood at 28 including a KASTO HBA 1060/1260 installed in the mid-1990s.

Howco's european operations director, Andrew Marwood, asked warehouse manager, Peter Connelly to research the market for the most cost-effective way to increase sawing capacity. It was needed not only to accommodate the upturn in business but also to support a reduction in lead-time for the supply of material and components to customers in the oil and gas industry.

Highly productive bandsaws were required, especially as processed material often visits them three times, initially for cutting test pieces before and after heat treatment and again for sawing the required batch, which can be anything from one-off to several hundreds. Mr. Connelly set about an exhaustive review of machines on the market, eventually deciding on two KASTOtec AC5 bandsaws.

The machines are equipped with the German manufacturer's optional, factory-fitted 'carbide package', which includes patented blade back-off on both sides of the cut during the upstroke to protect the carbide tips from damage and to improve blade life. A lower speed, high torque gearbox is fitted to optimise sawing productivity with carbide blades. Other design features of the machine are focused on reducing vibrations, particularly of the bandsaw blade.

Howco uses carbide blades extensively as they are particularly suitable for cutting nickel alloys, which tend to close on the blade during the cut, generating a lot of heat. Tungsten carbide teeth withstand the elevated temperatures well in addition to cutting the material efficiently.

Peter Connelly says: "The fully enclosed KASTOtecs are top-end saws that are safe to use, quiet and extract maximum productivity from Wikus and Lenox carbide bandsaw blades.

"We would have needed four bandsaws from the other suppliers we considered to cut the same amount of material, which would have taken up more space in our machine shop.

"The KASTO carbide bandsaws cut all of our materials between 40 and 50 percent faster than our other saws on site and compared with alternative new saws we considered.

"Specifically, they cut 500 mm diameter nickel alloy ingots 50 percent faster than other comparable bandsaws, giving us an extra 192 hours per week of ingot sawing capacity up to 530 mm diameter."

Glynn Colley, operations manager adds: "The KASTOtecs are also very reliable, especially with the blade deviation function switched on.

"For this reason, we use the saws almost exclusively for cutting our higher value metals like nickel alloys. A single, 500 mm diameter by six metre long bar can cost over £100,000, so security of operation is important.

"The increased capacity will allow us to meet projected demand both for ingot conversion and for sawing nickel alloy to produce forged and heat treated components.

"The latest KASTO saws are so productive and require so little supervision once set that we have calculated they will pay for

themselves in 40 weeks, working 16 hours a day, five days a week."

One factor in the calculation of this amortisation period is the short rest piece length of 35 mm on the KASTOtecs, which compares favourably with 80 mm on other saws. For each tonne of Inconel 718 processed, the monetary saving in reduced wastage is more than £137.50, which can add up to more than £100,000 during the course of a year.

Another financial benefit of the KASTO bandsaws comes from the significantly lower cost per cut than on other models in the machine shop.

For example, the cost of sawing a six-metre bar of 126 mm diameter Incoloy 925 into 53 mm lengths is 59 percent lower

on a KASTOtec AC5 compared with another make of saw operating with a bimetal blade on the Sheffield site. The reduction is partly down to the sheer speed of cutting (62 cm2/min), but other factors are taken into account as well, including the price of the machine, blade cost and longevity, staff wages and other overheads.

A number of factors contribute to efficient cutting on the KASTOtecs. Reduced vibration is the most important, helped by optimised blade guidance on either side of the point of cutting. More copious and better targeted coolant delivery to the blade and guides also promotes stable cutting performance.

A further contributory feature is automatic adjustment of blade downfeed within the program to suit the material being sawn. If the stock is round, the infeed rate is lower as the blade enters but increases progressively as the blade penetrates the material, which acts as a support to dampen oscillations. The feed rate is lowered again as the blade exits the material and support relies increasingly on the guides once more.

With less vibration comes lower noise. When Howco was visited, a hand-held meter recorded the sound pressure at the point of

cutting on one of the KASTOtecs and on another make of bandsaw cutting identical material. The latter reading was 60 dBA and the former substantially quieter at 52 dBA.

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

ABRACS launches new jigsaw blades range

One of the UK's leading suppliers of abrasives and accessories, ABRACS has launched a new range of jigsaw blades following extensive market research into the most popular types and sizes. The new range, which is now available from stock, covers the top 20 products and virtually all cutting applications and materials.

ABRACS continually assesses its product range and, following requests from customers, has introduced the jigsaw blades range as a natural extension to its existing portfolio of cutting products sold across the UK and in foreign markets including Western Europe and the Middle East.

ABRACS managing director Rob Jeffery says: "There are literally hundreds of different jigsaw blades available, but our new range is a comprehensive and focused selection of the top 20 products which we think will perfectly complement our existing range.

"Our reputation for quality at the right price continues to grow, and our customers are keen to carry a wider range of ABRACS products with the same manufacturing and marketing pedigree they have come to trust. This latest product launch is one of several we have planned for 2015."

The range is available in colour display packs of five pieces. For further information, and to order, visit **www.abracs.com**.

ABRACS supplies abrasives and accessories to wholesale distribution channels serving industry sectors ranging from DIY, painting and decorating and construction, to automotive, marine, aerospace and metal fabrication. Established in 1989, the £5 m turnover business has a 25-strong workforce based at its headquarters in York.

ABRACS's extensive cross section of product groups means the company can cater for almost any market needing abrasives and they have a loyal customer base which includes: Engineering and welding suppliers, fastener and fixing suppliers, van sales, agricultural, automotive and refinishing, paint supplies, off shore/marine and many more.

ABRACS has recognition and approval from various governing bodies including the

Organisation for the Safety of Abrasives (OSA), Link Up and ISO accreditation, and is proud to be an active member of the British Abrasives Federation (BAF)

ABRACS Ltd
Tel: 01904 789 997
Email: enquiries@abracs.com
www.abracs.com

"One stop source" celebrates in style

Weldability-Sif celebrates 90 years and opens new Technology & Training Centre

Weldability Sif, the UK-based "one stop source" for all welding products, has unveiled a state-of-the-art £1.7m Technology & Training Centre in Letchworth Garden City that will help to reduce a growing skills gap in the UK manufacturing industry.

The new centre was opened in March as part of the celebrations of Weldability Sif entering its 90th year of business. The Weldability Sif Technology & Training Centre houses a large product demonstration and selection showroom, plus a cutting-edge welder training facility that includes a highly impressive eLearning suite and fully-immersive virtual welding studio that provides a complete 'Virtual Learning Environment' to allow students to gain an understanding of the practicalities of the trade before entering a live workshop. Twelve fully-equipped welding bays form part of a welding process centre that will allow industrial users to conduct development trials and carry out welder training & testing.

Adrian Hawkins, Weldability Sif chairman, addressed attendees of the opening event and paid tribute to the strength of the Sif brand in surviving two wars, three recessions and eight changes in UK government. He added that although it had been quite a journey, "We won't stop there. In our flagship, state-of-the-art Technology & Training Centre, we will continue to further develop our courses, simulators, and training products, as well as offer one of the finest welder-training and coding sites in the UK, providing much-needed facilities to the Greater London area."

Sir Oliver Heald MP QC officially opened the centre, and prior to unveiling the launch plaque praised Adrian Hawkins for his commitment to and success in building an industry leading business and his work in championing the re-industrialisation of the engineering sector.

Guests then enjoyed a tour of the facility and were universally impressed, with one experienced welder left expressing his amazement, stating "I have never seen anything like this before, it is fantastic."

As well as opening the new Technology & Training Centre, Weldability Sif also support a charitable foundation that co-funds the implementation of foundation level welding skills across the UK, and have already established 25 'Welding Studio' centres at colleges and training organisations across the UK. Having now established a model, backed by charitable donations, the Foundation has so far helped to train over 5,000 learners in an attempt to lower the average age of welders from 57.

The Weldability-Sif Technology & Training Centre offers local businesses a 'bay for a day' service, allowing welding bays to be rented on a daily, weekly or monthly basis. The technical staff at Weldability Sif can offer businesses support with the development of weld procedure specifications, welder testing & coding and compliance with the recently introduced BS EN 1090.

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

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

New SifWeld industrial welding package

The new SifWeld MTS series offers an electronically controlled MIG/MAG/MMA industrial welding package featuring IGBT technology. With clear digital displays, low splatter, polarity reversal (for FCAW) and

integral 4-roll wire feed system able to accommodate up to 15 kg of wire spools, the uniys are designed for use in heavy-duty fabrication applications such as structural steel and marine/shipyard tasks.

There are three versions available: MTS 250, MTS 300 and MTS 400

The MTS 250 incorporates a full-length carrying handle, making it easy to move between working locations. A robust trolley is also available which can accommodate a full size gas cylinder and also incorporates a

storage compartment for common spare parts to be stored.

The ergonomic design of the MTS 300 incorporates an integrated torch holder for easy storage of the torch when not in use. As well as the robust trolley and storage compartment, it incorporates a wire feed mounting bracket that allows the feed unit ti rotate a full 360°, whilst ensuring that the interconnecting cable is secured via the attachment bracket in order to keep the cables securely in place.

As well as the benefits already described, the MTS 400 features MIG, MMA and Smart-TIG functionality and comes with a 400 v, 3 ph 32 a input supply and provides 400 A DC output at 100 percent duty cycle.

New SifWeld TS200DC inverter welding unit

Weldability Sif has introduced the new SifWeld TS200DC, a professional microprocessor-controlled inverter welding power source for TIG & MMA applications.

The SifWeld TS200DC's use of IGBT

technology means that it is feature rich while remaining compact and lightweight. It incorporates a user-friendly control panel with logical layout for operation in MMA or TIG modes, and is suitable for DC+ MMA, DC- MMA and DC TIG welding.

The machine's high frequency ignition and pulse function make it ideal for sheet metal and fine precision work and it is suitable for use in industries including general fabrication, sheet metal work, stainless steel fabrication, process engineering and repair & maintenance.

The machine has a 230 v 1 ph 16 a input supply, and supplies 200 a DC output at 25 percent duty cycle. It features a pre & post purge, up & down slope, as well as a dual current, DC pulse and 2/4 latching.

In TIG mode, the user can control the following functions: the main welding current; the pre & post gas flow; 2 & 4 stroke switch latching; in 4 stroke switch switching, the start and final current; current pulse control, over background current, frequency and width; arc initiation type; gas purge. In MMA mode, the main welding current, hot start and arc force can be controlled.

New SifDry range of electrode drying equipment

Weldability Sif has launched their new SifDry range, which includes an electrode quiver, portable electrode oven and stationary drying oven.

The SifDry Electrode Quiver is available in either 110 v or 230 v 1 ph models and holds one 5 kg pack of electrodes. Features include a carry handle and stand, heating indicator light and fused element. Easy to load and carry, it is ideal for site use and will maintain temperatures between 80 and 120°C.

These are the same temperatures that the SifDry Portable Electrode Oven produces. Ideal for localised site storage, the unit holds two 5 kg packs of electrodes and features a rod lifter for easy loading and unloading. It requires a 230 v 1 ph input supply and has a heating range from 60-300°C.

The SifDry Stationary Drying Oven needs more power, through a 415 v 3 ph input supply, which allows it to unleash the full force of the most powerful electrode oven in the range: the user can take its temperature up to 400°C via a digital thermostat control. Holding up to 100 kg of electrodes, the oven comes with sliding shelves for easy access and is castor mounted for great manoeuvrability. These make it ideal for workshop and central site positioning.

Weldability-Sif
Tel: 01462 482200
Email: steve@weldability-sif.com
www.weldability-sif.com

New ESAB high definition welding helmet

ESAB Welding & Cutting Products introduces the Aristo® Tech HD welding helmet, its first auto-darkening helmet with an optical class of 1/1/1/1, which indicates the highest optical performance possible according to the rigorous EN 379 Standard. Professional welders will immediately notice greater clarity of the weld and increased definition of the weld pool, which helps them achieve more accurate results while reducing eye strain, especially when welding for long periods.

The Aristo Tech HD features an advanced LCD lens with a 100 x 62 mm (3.9" x 2.4") viewing area, 12 mm (0.5") larger than the previous lens, for wider visibility and better spatial awareness. ESAB's new X-TIG mode provides superior performance when TIG welding down to 5 amps. In the X-TIG mode, the helmet uses electromagnetic arc sensors that automatically react to the magnetic field of the arc. This eliminates interference from sunlight or other electrical/electronic equipment, as well as ensures that the helmet darkens when the sensors are blocked, such as when welding pipe or in awkward positions.

A grind mode is activated at the lowest sensitivity, so operators don't have to shift between the helmet and a face shield and safety glasses when grinding. The grind mode also works well for plasma and oxy-fuel cutting. The helmet's digital lens technology gives the welder full control to adjust shade (5 to 13), sensitivity and delay settings with precision for any application or process. The Aristo Tech HD weighs 515 g (18 oz.) and features a unique matte carbon rubberised finish (the most robust finish available) that is highly resistant to cuts and scratches.

Understanding optical class

The European Norm (EN) 379 Standard is a standard recognised worldwide to provide welders with a rating system by which they can evaluate auto-darkening filters (ADFs). The standard sets performance requirements for optical quality and evaluates them on a scale of 1 to 3, with 1 being the highest. The four factors that determine quality are: Optical quality, a 1 rating indicates a clear image with little to no distortion caused by the lens warping the image; diffusion of light, a 1 rating indicates a clean image without hazing caused by impurities in the lens; variation in luminous transmittance, a 1 rating indicates uniform darkness across the entire surface of the lens; angle of dependence of luminous transmittance, a 1 rating indicates uniform darkness when viewing the lens at an angle.

With its 1/1/1/1/ rating, welders can be assured that the Aristo Tech HD helmet offers the sharpest, clearest and most consistent view of the weld puddle. Its angular dependence compensation (ADC) technology ensures a consistent shade level even when viewing the lens at an angle, which is often the case when welding out of position.

The Aristo Tech HD helmet is available with several options, including a Powered Air Purifying Respirator (PAPR) unit and/or hard hat, magnifying lenses and hearing protection. ESAB's PAPR delivers the maximum fresh air flow and offers protection against welding fume particles.

ESAB Welding & Cutting Products is a recognised leader in the welding and cutting industry. From time-honoured processes in welding and cutting to revolutionary technologies in mechanised cutting and automation, ESAB's welding consumables, equipment, and accessories bring solutions to customers around the globe.

ESAB's reach extends to almost every nation in the world, with more than 8,700 employees and manufacturing facilities across four continents

ESAB is committed to the international marketplace. A broad global presence is critical to their growth and to understanding and responding to the needs of customers, as well as to developing the strong relationships necessary to long-term success.

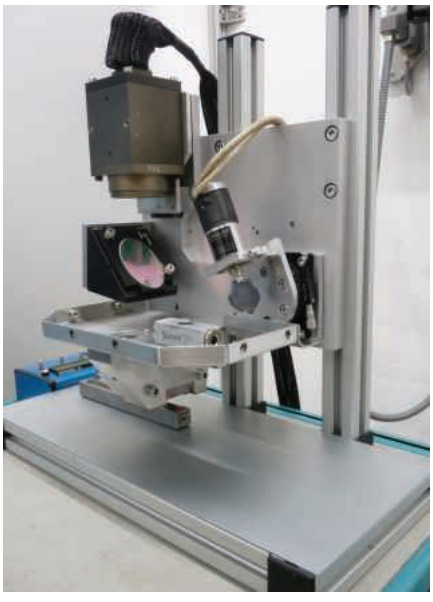
The company is also committed to protecting and enhancing the health and safety of the people they work with and the environments where they work. ESAB also strive to continuously improve their environmental, social, and economic performance.

ESAB Group (UK) Ltd.
Tel: 0800 389 3152
Email: info@esab.co.uk
www.esab.co.uk

High power deposition welding

Instead of completely exchanging expensive components after wear and tear, these can be repaired using deposition welding. Up to now, a gas metal arc welding (GMAW) process has usually been used for deposition welding, with an average feed rate of five kilos per hour. Since the dilution level is around 30 percent, several layers must be deposited, one on the other, until the protective covering is pure enough. Scientists at the Laser Zentrum Hannover e.V. (LZH) have now, as part of the HoDopp project, developed a laser-supported, light arc process, which achieves this in a single layer.

In the conventional process, the light arc burns between the wire electrode and the workpiece, and fuses both. For large area and multi-layer coatings, the process can take up to 24 hours per square metre. On the other hand, in the process used by the LZH, a light arc burns between two wires and melts them simultaneously. The deposition rate can thus be increased to around 7.5 kg per hour. The laser beam, which is used in addition to this, assures



layer adherence, and improves the form of the seam.

Due to the support by the laser beam, the layer is deposited with a low penetration depth, and the dilution rate is thus under five percent. A further advantage of the process is low heat input. Component deformation is notably lower than with deposition welding using conventional GMAW, and the deposition rate can be increased by around 50 percent. Since one layer replaces two or three conventionally deposited layers, time and material can be saved for inhomogeneous materials, by half to two-thirds. Thus, productivity and simultaneously the quality of the welding process can be drastically increased.

The HoDopp project, 'High-power laser cladding using the twin-wire technique without light-arc transmission and with laser-assisted weld-penetration control', was financed by the Federal Ministry of Education and Research (BMBF). The project was completed at the end of 2014.

Laser Zentrum Hannover e.V.
Tel: 0049 511 2788238
Email: presse@lzh.de
www.lzh.de

Croft Filters latest investment increases customer offering

Specialist manufacturer, Croft Filters, has invested in a new Nd:YAG laser welding machine to increase production line efficiency and further enhance its customer offering.

The machine, which is capable of both spot and seam functions, designed with the precision of the micro-welding industry in mind, will provide Croft with a previously unattainable level of accuracy and consistency when welding.

Croft will utilise the laser beam welding technology to join filter components that have smaller seams or low thermal distortion, and therefore require a higher welding speed and precise control during the process.

In addition, the machine will enable Croft Filters to focus on the product aesthetics and durability, providing long-term benefits for Croft's customers, such as increased maintenance cycles.

Neil Burns, director at Croft Filters, says: "It is important that we are consistently updating our services in line with customer needs and demands.

"Introducing the new Nd:YAG Laser machine to our production line will not only benefit our customers in terms of providing more intricate products, but also gives Croft the technology it needs to maintain a high quality and future proofed service."

Warrington-based company, Croft Filters, is a leading manufacturer of bespoke filters. Founded by entrepreneur brothers Mark and Neil Burns in 1986, the company has 27 years of experience designing and manufacturing high quality filters to myriad industry sectors in the UK and overseas.

Working with a wide range of materials, Croft Filter's skilled team of experts offer first class consultancy on any aspect of mesh filters, filter elements and filter housings to help meet customers' individual filtration requirements.

The company is committed to investment in people, offering ongoing training to its experienced team. Croft Filters is the sister company of Croft Additive Manufacturing, providing state-of-the-art metal additive manufacturing opportunities to a range of industries in the UK and overseas.
For further information visit **www.filters.co.uk** or send a tweet to **@Croft Filters**.

Croft Filters
Tel: 01925 766 265
Email: sales@filters.co.uk
www.filters.co.uk

Mobile storage cages with adjustable shelves

Reducing handling time, providing convenience and security wherever work-in-progress or finished goods need storing, are among the important benefits of the new STAK-RED mobile storage cages with adjustable shelves.

Available from storage specialists Stakrak Limited, STAK-RED mobile security cages provide a secure and practical alternative to fixed storage areas with the important advantage of being able to be easily moved to suit the increasing demand for flexible manufacturing situations.

Designed in response to customer's requests, these robust, yet mobile cages feature double-hinged, lockable doors which fold back fully 270° to provide easy access. They are fully fabricated from mild steel and are supplied with two adjustable shelves as standard, in either steel or plywood which can be adjusted in 100 mm increments

They are available from stock in external sizes of 1800 mm H x 1300 mm W x 670 mm D with alternative depths offered of 770 mm and 870 mm, providing a maximum storage capacity per bay of approximately 500 kg with 100 kg UDL per shelf. With a shelf size of W 1300 mm x D 870 mm, these are the largest mobile storage cages on the market.

Stakrak Ltd Tel: 01293 538822
Email: sales@stakrak.co.uk www.stakrak.co.uk

Cutwel launches new catalogue

Cutwel Ltd has launched an amazing new 1,000 page colour catalogue with average price reductions of 11 percent.
This is the 5th edition of the Cutwel master catalogue and includes over 20,000 new products from the previous edition, meaning Cutwel can supply tooling to cover most applications.

The layout of the new user friendly catalogue reflects the new website which was launched in 2014, and a fully interactive digital copy is also available with easy navigation and links to order products online, view technical data and watch product demonstration videos.

New additions to the catalogue include broaching, knurling and driven tooling and Cutwel have also extended many of their current tooling ranges including milling cutters, measuring tools and lathe tools.

There is also an entire section dedicated to Hawk 3D Proto, the 3D printing division of Cutwel, featuring a fantastic range of 3D printers and 3D printing consumables. Further information is also available on the state of the art 3D printing showroom where you can request live product demonstrations.
To request a free copy of the new catalogue please contact:

Cutwel Ltd Tel: 01904 869 610
Email: sales@cutwel.net www.cutwel.co.uk

Lifting and handling aids for all niche applications

Niche workplaces require niche equipment and Pallet Trucks UK is ready to deliver. With a huge selection of premium quality equipment designed to service a range of different markets, it's the go-to site for a pallet truck that fits the job description, to a tee.

As well as helping employees carry out tasks faster and more efficiently, the right pallet truck for the job is also an essential part of complying with safety regulations. Pallet Trucks UK is helping British businesses keep their workplaces safe, productive and injury free with its comprehensive range of pallet trucks for every application.

Pallet Truck Shop Tel: 0845 519 2700 www.pallettrucksuk.co.uk

Biggest single press brake In the UK

Long press braking and laser cutting specialist Folsana has launched its latest CNC Press Brakes range from 100 tonnes up to 1,600 tonnes with a maximum overall bending length of 12,200 mm. Not having the restraints that come with tandem press brakes, Folsana claims that is is capable of folding plates larger and thicker than any other UK subcontractor. Its modern machines are capable of bending high tensile materials including Hardox® & Armox® , incorporating the latest CNC technology, allowing them to manufacture even the most complex sheet and plate components to customer specifications.

All Folsana press brakes are complemented by bespoke lifting and handling equipment, ensuring materials and products are processed with the appropriate care and efficiency.

Folsana Pressed Sections Ltd Tel: 01204 393355 Email: sales@folsana.co.uk

CRM functionality integrated within PSL Datatrack

CRM functionality and a dedicated Task Management module are the latest additions to the PSL Datatrack production management and business administration system for engineering subcontractors. CRM (Customer Relationship Management) can cover many areas depending on the type or style of a business. The flexible CRM and task management functionality in PSL Datatrack are focused on the needs of a subcontract manufacturing business to maximise administration efficiency and lay the foundations for improvements in all customer-focused administration.

PSL Datatrack is a modular production management system with the CRM and task management module offering many advantages over web-based CRM systems which can often be too complex and labour intensive or include features that are not relevant for a subcontract business.

PSL Datatrack Tel: 08456 345931 Email: sales@psldatatrack.com

LEGENDARY PERFORMANCE

New from WNT

-XU Chipbreaker

Designed for perfect chip breaking and a wide range of applications. Ideal for finishing, and from medium machining to light roughing. The -XU chip breaker sets new standards in machining performance.

APPROVED DRAGONSKIN GRADE • LEGENDARY PERFORMANCE •

DRAGONSKIN

HCX1115 and HCX1125 grades for steel machining

TOTAL TOOLING = QUALITY x SERVICE ^{2}

WNT United Kingdom Ltd. • Sheffield Business Park • Sheffield S9 1XU • Tel. 0800 073 2 073 • wnt-uk@wnt.com • www.wnt.com