ENGINEERING subcontractor JANUARY 2015

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Did you know...

XYZs newly extended factory is 200 times larger than the first XYZ unit in Newton Abbot.

The XYZs offices now occupy more space than the entire first unit.

In 1984 a metre CNC Mill without a tool changer would cost more than £39,000. A Ford Escort was less than £4,500 and an average terraced house was £15,000. Today the equivalent metre machine with improved performance is £34,500 from XYZ.

XYZ receives four containers a week with machines ready for assembly and control fitting.

All ProtoTRAK machines are assembled and inspected at XYZ HQ in Devon.

XYZ have the capacity to assemble and deliver 100 machines per month.

XYZ carry £1 million pounds worth of spare parts in the 18,000 sq ft stores to service the 20,000+ machines working in the UK.

XYZ parts can be ordered at any time through the XYZ web shop.

XYZ sell four times as many ProtoTRAK controlled machines than any other machines, and over 75% of first time customers buy a 2nd machine within a year.

Most of XYZ's employees are long service personnel who have worked for the company for more than 15 years.

All of XYZs Area Sales Managers are apprentice trained, knowledgeable and can demonstrate a control in your premises. Call today to arrange yours.

Isle of Man College Apprentice Workshop.

Brian Young - Programme Manager.
Apprentice Training.
XYZ machines purchased to date:
XYZ ProtoTRAK Mills x 8, XYZ ProTURN Lathes x 6, XYZ Manual Lathes x 11, XYZ VMC x 1, XYZ Turning Centre x 1, XYZ Grinder x 1.

Quickits Ltd, Nottinghamshire.

Rob Smith - Managing Director.
Pump Valve Kits.
XYZ machines purchased to date:
XYZ ProTURN Lathes x 5, XYZ Turning Centres x 2, XYZ VMCs x 9.

PTG Engineering Ltd, Plymouth.

Martin Beer - Works Manager.
Tool Makers.
XYZ machines purchased to date:
XYZ ProtoTRAK Mills x 9, XYZ VMCs x 6, XYZ Turning Centre x 1.

C B Powell Engineering Ltd, Hove, East Sussex.

Andy Powell - Managing Director.
General sub-contract.
XYZ machines purchased to date:
XYZ ProtoTRAK Mills x 8, XYZ ProTURN Lathes x 2, XYZ VMC x 1.

Dyson Ltd, Malmesbury, Wiltshire.

Steve Tremlin - Head of Prototyping, UK.
Engineering Technology.
XYZ machines purchased to date:
XYZ ProtoTRAK Mills x 3, XYZ ProTURN Lathes x 4, XYZ VMCs x 1.

Glenborough Engineering Ltd, Leicester.

John Padkin - Manufacturing Manager.
Automotive and process industries.
XYZ machines purchased to date:
XYZ ProtoTRAK Mills x 5, XYZ Grinder x 1.

Edmar Engineering Ltd, Birmingham.

Richard Dale - General Manager.
General sub-contract machining.
XYZ machines purchased to date:
XYZ ProtoTRAK Mills x 7, XYZ ProTURN Lathes x 2.

Armac Martin Ltd, Birmingham.

Graham Jones - Works Manager.
Architectural Hardware.
XYZ machines purchased to date:
XYZ VMCs x 5, XYZ Turning Centres x 2.

North Wales Aeroforms Ltd, Queensferry.

Richard Doyle - Managing Director.
Aerospace (Airbus).
XYZ machines purchased to date:
XYZ ProtoTRAK Mill x 1, XYZ ProTURN Lathe x 1.

Wilson Tools and Engineering Ltd, Essex.

Darren Wilson - General Manager.
Automotive.
XYZ machines purchased to date:
XYZ ProtoTRAK Mills x 5, XYZ ProTURN Lathes x 2, XYZ Turning Centres x 2, XYZ VMCs x 3.

Helipebs Controls Ltd, Gloucester.

Victor Ricketts - Works Manager.
Oil and gas.
XYZ machines purchased to date:
XYZ ProtoTRAK Mill x 1, XYZ ProTURN Lathes x 2, XYZ Turning Centre x 1, XYZ VMC x 1.

Sigma Precision Engineering Ltd, Plymouth.

Andy Copestick - Managing Director.
Sub-Contract Engineering.
XYZ machines purchased to date:
XYZ ProtoTRAK Mills x 3, XYZ ProTURN lathes x 4, XYZ VMC x 1.

D & D Engineering, Hull, North Humberside.

Mark Robinson - Managing Director.
Oil, gas, food and general engineering.
XYZ machines purchased to date:
XYZ ProtoTRAK Mills x 2, XYZ ProTURN Lathes x 2, XYZ Turning Centre x 1, XYZ VMCs x 5.

BSA Regal Ltd, Hampshire.

Chris Bennett - Director.
General subcontract.
XYZ machines purchased to date:
XYZ ProtoTRAK Mills x 4, XYZ ProTURN Lathes x 3, XYZ Turning Centres x 2, XYZ VMCs x 2.

A & C Rodger Engineering, East Kilbride.

Andrew Rodger - Engineering Director.
General sub contract machine shop.
XYZ machines purchased to date:
XYZ ProtoTRAK Mills x 3, XYZ ProTURN lathes x 1, XYZ VMCs x 2.

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Automotive.
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Helipebs Controls Ltd, Gloucester.

Victor Ricketts - Works Manager.
Oil and gas.
XYZ machines purchased to date:
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Sigma Precision Engineering Ltd, Plymouth.

Andy Copestick - Managing Director.
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D & D Engineering, Hull, North Humberside.

Mark Robinson - Managing Director.
Oil, gas, food and general engineering.
XYZ machines purchased to date:
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BSA Regal Ltd, Hampshire.

Chris Bennett - Director.
General subcontract.
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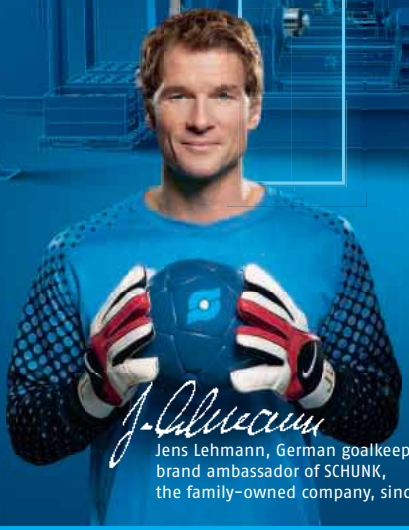

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CONTENTS

NEXT ISSUE JANUARY 2015

MEDICAL REPORT
5-AXIS MACHINING
CUTTING TOOLS
MEASUREMENT & INSPECTION
SAWING & CUTTING OFF

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Successful Open House caps best ever year for Hurco

Orders for 12 vertical machining centres and CNC lathes to the value of £980,000 were taken by Hurco Europe at its three-day open house in December 2014, during which it welcomed 70 engineers from 52 manufacturing companies to its showroom in High Wycombe.

Turnover in the financial year to 31st October 2014 was a record £21 million, representing a five percent increase on the previous two years. The number of machines sold in the last 12 months topped 300 for the third year in a row, including over 50 lathes, some 10 percent more than in 2012/13.

Hurco's managing director, David Waghorn comments: "Despite the larger proportion of lower cost turning machines delivered this year, the extra turnover resulted partly from selling seven of our biggest DCX-series bridge-type machining centres.

"Higher-value 5-axis machining centres also sold well, with the VMX42SRTi and VMX60SRTi B-axis models proving most popular, although our trunnion-type configurations are preferred for some applications.

"Another factor that raised turnover was a greater willingness by customers to enhance their machine specification with, for example, extra rotary axes, higher spindle speeds, full swarf management, through-tool coolant and probing for parts and tools. To ensure we keep pace with the higher level of after-sales support that an ever increasing installed base of machines generates, we recently recruited three more service engineers, all of whom started on 1st December 2014."

The proportion of new companies buying Hurco equipment was around 40 percent in 2013/14, similar to the two previous years, which is a good indicator of sustainable business growth. In addition to selling its US parent company's machine tools, for more than a decade Hurco has been sole agent in Britain and Ireland for high precision, 3/5-axis machining centres manufactured by Roeders, Germany. Four were sold from High Wycombe during 2013/14, hallmarks of the machines being linear motors in X, Y and Z, direct drives for the rotary axes, high spindle speeds and exceptional levels of profiling accuracy and surface finish.

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

MACH 2016 - Cutting into the future

MACH 2016 is taking shape, with over 17,000 square metres of space already allocated, some 15 percent up on the equivalent stage before MACH 2014. Following a ballot for space at the exhibition, which is set for the 11-15 April 2016 at the NEC, over 200 companies are on the floor plans with more coming in every day.

James Selka, the MTA's chief executive, says: "It's fantastic to have so many companies on board as far ahead as sixteen months before MACH 2016. It's a great opportunity to build on success and really broaden the exhibition's reach and scope."

There has been a significant increase in exhibition space taken from the likes of Mazak, Mills CNC, DMG Mori and the ETG Group and smaller companies are committing to the UK Manufacturing Zone.

The Zone we will see the inclusion of a number of household name Original Equipment Manufacturers (OEMs). Airbus is returning after a very successful 2014 and, at the recent press launch, exhibition organiser, the MTA announced that Siemens Offshore will also be exhibiting in the UK Manufacturing Zone.

James Selka said: "We're delighted that Siemens Offshore have joined us in the UK Manufacturing Zone. The Zone exists to bring together companies, both big and small, who form the UK's manufacturing supply chains and potential supply chains. With over 23,000 visitors from around the manufacturing world, MACH is the largest industrial exhibition in the UK and the best place to see the latest in manufacturing technology under one roof."

Juergen Maier, chief executive of Siemens in the UK and Ireland says: "Offshore wind is a huge area of growth for Siemens. We will be looking to engage with businesses of all sizes to explore how investments such as our Hull wind turbine facility can start to help develop a new era of renewable manufacturing in Britain.

The next few years will see huge investment arising from Offshore business and we hope MACH 2016 will be a catalyst to drive this."

MACH was established more than 100 years ago by the Manufacturing Technologies Association (MTA). It is the largest manufacturing technologies event in the UK, attracting in the region of 600 exhibitors and more than 23,000 visitors. Taking place 11-15 April 2016 at the NEC in Birmingham, the biennial exhibition brings together the latest developments and best innovations. MACH provides manufacturers of all sizes and sectors the chance to network with key clients and prospects as well as gain insight into their needs and future vision for supply chain manufacturing. For more information visit **www.machexhibition.com.**

The Manufacturing Technologies Association (MTA) is the UK trade association for the manufacturing technologies industry. The MTA represents the core of engineering based manufacturing and aims to promote the use and innovation of advanced technology in manufacturing. The MTA sits at the core of the engineering based manufacturing sector and as an association works tirelessly to ensure member companies are as commercially successful as possible.

The association's key activities include: representing engineering-based manufacturing and supporting the advanced engineering sector through lobbying, media contact and networking; providing relevant and specific industry intelligence; encouraging talent through funding and support for workplace training and education initiatives in schools, colleges and universities; delivering the UK's only major exhibition focused on manufacturing technologies, MACH (owned and organised by the MTA).

Membership of the MTA is open to companies involved with the manufacturing technologies sector and end users of such technology.

For further information about the MTA and its members, contact:

The Manufacturing Technologies Association (MTA)
Tel: 020 7298 6400
www.mta.org.uk

Fix your eyes on this

Fastener and fixing community looks forward to Fastener Fair Stuttgart 2015

FASTENER FAIR STUTTGART

The World's No.1

From 10 – 12 March 2015, Fastener Fair Stuttgart 2015, the 6th International Exhibition for the Fastener and Fixing Industry, will once again be the meeting place for an industry sector that plays a key role in industry production and construction. Without fastener and fixing technology, our world would quite literally fall apart.

Fastener Fair Stuttgart covers all aspects of the fastener and fixing industry and is primarily aimed at retailers and manufacturers. The show offers the following products and services: Industrial fasteners and fixings, construction fixings, assembly and installation systems, fastener manufacturing technology, storage, distribution and factory equipment as well as information services.

The target audience consists mainly of wholesalers, dealers, suppliers and manufacturers. For these industry professionals, the trade fair is a key marketplace to source products and solutions, to build new and maintain existing business partnerships, exchange expertise and learn about the latest industry trends.

Bigger than ever, Fastener Fair Stuttgart 2015 covers a net floor space of 18,000 square metres, in four exhibition halls of the Stuttgart Messe Trade Fair Centre. Some 800 exhibitors from 40 countries will present their latest technical developments as well as conventional systems from all areas of fastener and fixing technology. Major European exhibitor countries next to Germany are Italy, Great Britain, Turkey, the Netherlands and Spain. Asian exhibitors mainly come from Taiwan, China, India and South Korea.

A visitor brochure with useful information and an up-to-date exhibitor list will soon be published and can be ordered via the show website www.fastenerfair.com/stuttgart.

Fastener Fair Stuttgart 2015 will be held in halls 4, 6, 8 and C2 at the Stuttgart Messe Trade Fair Centre. Opening hours are from Tuesday, 10 March 2015 to Thursday, 12 March 2015, from 9am to 5.30pm. Tickets cost €25 when registering online and €35 on-site.

Companies that would still like to exhibit at Fastener Fair Stuttgart 2015 can request further information about participation through the exhibition website **www.fastenerfair.com/stuttgart**

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Life in the fast lane

Mercedes-AMG automobiles exude sporty styling, luxury, and above all impressive power. But some AMG owners, although quite satisfied with the luxury and style, crave even more power – lots more power. These Mercedes-AMG owners are increasingly turn to Weistec Engineering to take their cars to the next level of performance.

Co-owners Michael Weiss and Steve Atneyel started Weistec Engineering in Santa Ana, California to satisfy their own appetite for speed and that of other Mercedes-AMG owners.

"My background is mechanical engineering," explains technical director Michael Weiss. "Steve and I worked together in the performance aftermarket and really enjoy what we do. Although we worked on American cars, mostly Mustangs, we drove Mercedes for our personal vehicles. We saw a niche in the market for offering performance products for these cars, so we put our heads together, worked out a game plan, and came up with Weistec.

"We make and install performance products for Mercedes-AMG vehicles," he continues. "Supercharger upgrades, turbocharger upgrades, exhaust systems, transmissions, ECU tuning solutions, drivelines – everything that allows cars to develop more power and better drivability.

"More power means engines producing anywhere from 500 horsepower to well over 1000, depending on the platform, how much power the customer wants and whether racing or CARB legal (California Air Resources Board) is the priority."

Except for their racing products, Weistec components are 50-state emissions compliant.

Weistec engineers its products specifically for the E55 AMG model with the M113K engine, the SLS AMG model with the M159 engine, and the '63' model AMGs, like the CL63 AMG and E63 AMG, with M156 and M157 engines. All components are designed with the concept of carrying over the Mercedes style to their products, so they have the look, fit, and excellence of design and materials found in OEM parts.

For example, Weistec superchargers use high-quality castings that closely match the Mercedes style. They turn up to 18,000 rpm and produce more than 10 psi boost.

Their racing engine superchargers produce over 30 psi boost at more than 30,000 rpm. They are engineered for high performance and dependability, with components precision-machined to exacting tolerances on Weistec's Haas VM-3 CNC Mold Making VMC and ST-30 turning center. The superchargers fit the engines precisely, and work seamlessly with supporting Weistec components to efficiently get the power to the wheels. And Weistec's ECU tuning solutions get maximum performance from the supercharger system.

A Weistec supercharger fitted to an AMG 6.2 litre engine

"One of the main things that differentiate us from our competitors," points out Steve Atneyel, director of operations, "is that we have a very good system in terms of putting the hardware and the software together to get everything running right. That's how we get our products CARB legal. There is a lot of OEM integration, so we really have to think everything through. Some manufacturers just do hardware, and some just do software. We do both, and we put them together very well.

"I was a computer calibrator for ten years on Ford, Chrysler, and other American car models," adds Steve Atneyel, "but working on Mercedes was always a hobby. We'd do it on the side or after hours. I've always done the calibrations, but I also have a business degree. So, for the business, Mike is the designer, and I am the calibrator. Those two skills go together very well. It is a perfect synergy of getting everything working right."

The result is that in just four years, the company has forged a reputation for offering products and services that provide high performance without sacrificing reliability.

"We have multiple Mercedes world records, but our customers mostly want to see things like quarter-mile times, and 0-to-60 mph speeds," says Michael Weiss.

"We've beaten our own record twice in the quarter-mile, and right now the overall Mercedes world record stands at about 9.60 seconds and over 153 mph. That is using our 6.2* litre, M156 supercharged engine in a CLK63 AMG. It is naturally aspirated from the factory, and we add our supercharger and all the complementary parts to handle the power increase – the electronics, intercoolers, transmission, oil coolers, and things like that." It is zero-compromise performance," emphasises Steve Atneyel.

"We don't compromise the drivability, or the look, the quality or the luxury of the car when we install our products. We have a passion for what we do and it is as refined as the AMG Mercedes was when it came from the factory. That is hard to find in the industry today. There is a lot of compromise in the parts that some companies sell, and that is where our customers hold us in a different light. Zero compromise."

* Although the AMG version is a 6.2L V8 engine, Mercedes finds it appropriate to stay in touch with their roots and use the "6.3 V8" badge and "63" model designation as a nod to the famous Mercedes 300SEL 6.3L engine, used in the first S-Class.

Weistec depends on its Haas CNC machines to make their precision,

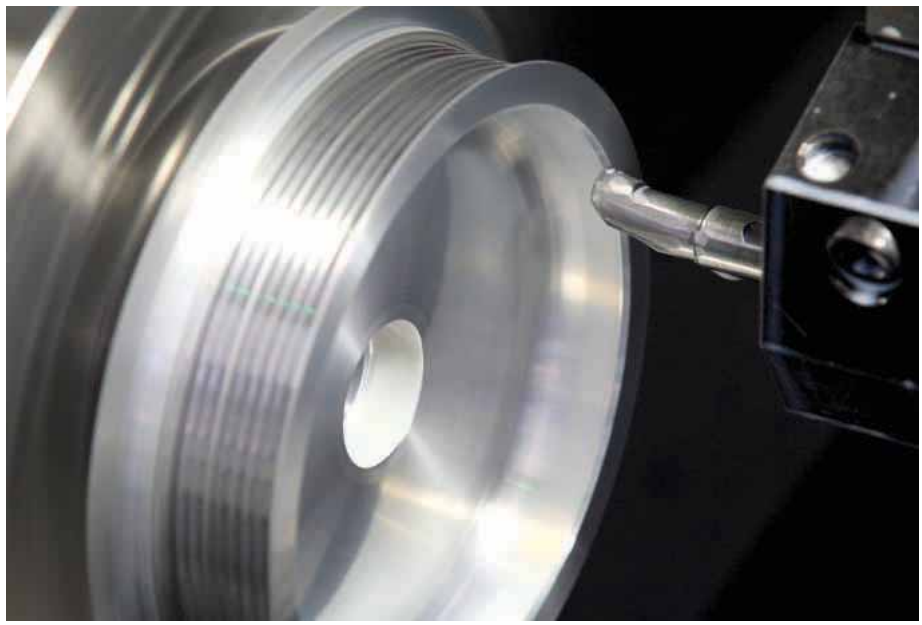
zero-compromise products, and meet their commitment to their customers.

"We discussed which machines to get for a week or more," Michael Weiss recalls, "as well as table size, spindle speed, every detail and Haas helped with that, too. We finally decided on the VM-3 mould making VMC and the ST-30 for turning. The VM-3 came standard with most of the options that we wanted, which cost less than adding the options we needed to another model we were considering. These are our first CNC machines, and we are very pleased with the machines and the service.

"We really like the parts catcher on the ST-30 delivering parts through the door to a tray without shutting down," he adds. "That saves a lot of time. The VM-3 has probing, programmable coolant nozzle, extra lighting, and a lot more. The machines we have are perfect for our operation. We really put the machines through a beating, and reliability has been excellent. They're not just cutting aluminum all day; we cut a lot of stainless, steels, and some Inconel™, with a high load. Many times, we push the tools to their limit."

"The ST-30 does most of our parts, because we make so many pulleys and round parts," Steve Atneyel points out, "but many of these get a final op on the VM-3, so we use multiple fixturing in the mill. Our head machinist has a reputation for thinking outside the box, and finds a way to make a common fixture to support several similar parts.Normally, the table has low-quantity, multiple fixtures mounted on it. We are a high-quality manufacturer, so sometimes we need thirty of something cut, anodised and on the shelf quickly."

A Haas ST-30 turning centre makes precision parts for Weistec's racing supercharger, which produces 30 psi boost at up to 30,000 rpm



Weistec makes and install performance products for Mercedes-AMG vehicles, including supercharger upgrades, turbocharger upgrades, exhaust systems, transmissions, ECU tuning solutions, drivelines – everything that allows cars to develop more power and better drivability

Weistec employs high technology wherever possible. It often makes rapid prototypes on its in-house 3D printer, before using the machining centre to make a test part. Larger, more complicated 3D models are sent out for rapid prototyping. Using the 3D prototypes to verify placement and design concepts reduces costs. It permits an inexpensive model to be made and tested, with the flexibility to allow quick changes before requiring more expensive machining time and materials.

In addition to the usual QC measuring instruments, the Weistec Quality Assurance Department is equipped with a Faro portable 3D measurement arm with both laser optical scanner and touch probes. A computer-generated scan can produce measurements as close as five ten-thousandths of an inch (0.0005"). Scanned images can be rotated and manipulated on screen to display how a component will appear when it is installed in the vehicle.

Weistec also scans the engine compartment without the engine installed, and uses the images to check for interference. Scanned images of the engine with new components installed are "fitted" into the scan of the engine compartment to locate areas where the designs may need adjustment. This "reverse engineering" is necessary, because Mercedes does not make models or design information available to the aftermarket. Using this technology provides faster measurements, and helps ensure the parts fit and work together freely.

Weistec Engineering has earned an international reputation for quality. Most of its vehicle modifications and parts sales are to foreign customers, who tend to be young, successful, and have a passion for perfection, style, and performance. But lately, there is another demand for Weistec expertise.

"People see the quality in our products, and approach us to design or make parts for them, so we also do a lot of private-label work," says Steve Atneyel. "It is our quality, our fitment and a lot of our design, but their label. Our company will also expand in that direction, because other suppliers can see that we are totally committed to making our products perfect.

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www.haas.co.uk

Let's talk torque!

Motorsport Industry Association calls for greater dialogue in manufacturing

British industry should engage with the UK's world-beating motorsport supply chain to help build a robust and sustainable platform for growth. That's the view of Chris Aylett, CEO of the Motorsport Industry Association (MIA), who is calling for greater dialogue between the UK's diverse manufacturing sectors in the wake of a report issued this week by the CBI.

The CBI's 'Pulling Together: Strengthening the UK's Supply Chains' outlines how a lack of investment in research and development, along with a growing skills gap, has weakened the supply chains which act as a foundation for the UK manufacturing sector. It argues that, without investment to raise capacity, the industrial and economic recovery could stall.

Chris Aylett comments: "Many issues raised in the CBI report will be familiar to everyone working in manufacturing. The members of the MIA support, wholeheartedly, the call for a step change in the way in which government and industry work together to overcome the investment and skills gap.

"However, investment alone is not enough; we also must ensure there is far more, proactive collaboration and knowledge-sharing across the whole manufacturing sector. At the MIA, we actively facilitate cross-sector events to help grow new business and share insights across the motorsport, defence, automotive, aerospace and marine supply chains.

Hundreds of UK companies have recently benefitted from lessons learnt by the UK motorsport industry involving rapid response, continuous R&D investment, specialist prototyping and the commercialisation of lightweight technologies."

In the past decade, the UK motorsport industry (currently 4,300 companies) has more than doubled in size, and now boasts an annual turnover of more than £9 bn. Their average spend on R&D is an impressive 25 percent of sales turnover, while nearly 90 percent export their products or services.

Chris Aylett concludes: "We will shortly launch a report into the motorsport supply chain, in conjunction with the UKTI and BIS, which will outline our industry business plan to bolster the sector's continuing growth.

"We are determined to continue broadening the reach of our world class suppliers into other adjacent sectors to mutual benefit. Millions of pounds of added value business have been delivered from this programme in the past few years, and we are ready to show others how to do more of the same. We call on government and the UK manufacturing sector to heed our call to collaborate to innovate. Let's talk torque!"

The Motorsport Industry Association (MIA) is the world's leading trade association for the motorsport, high performance engineering, and services sectors. It represents the specialised needs of a highly successful industry which, although extending throughout the world and rapidly expanding in the developing nations, is centred here in the UK. The MIA membership displays a wide demographic spread, including; motorsport and performance engineering companies, race and rally teams, governing bodies, motorsport services, research organisations, race circuits and universities and colleges

To find out more about the Motorsport Industry Association, visit **www.the-mia.com**

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Reduced entry costs into rotary draw tube bending

Precision CNC tube bender slashes the cost of manufacturing of small-batch and prototype parts with aerospace, motor racing and MRO applications key markets

Unison has launched what it believes is a unique concept in the tube bending automation market. The Evbend machine greatly reduces the entry costs to precision rotary draw tube bending by using manual operations to feed and rotate tubing and apply the bending force, but with smart CNC-controlled braking on the carriage feed, rotation and bend arm axes to ensure part shapes are formed with the highest accuracy.

The development is a re-engineered version of an existing machine called Evbend. The Evbend concept was originally developed by a UK engineer in the 1980s. Unison acquired the intellectual property for Evbend in February 2014. It has now re-engineered the machine to add a modern programming and operational control user interface, and to enhance manufacturability. Unison believes that the new machine, the Evbend 1000, is the simplest high precision CNC tube bending solution available today for small-diameter tubing up to 22 mm.

The EvBend bending technique and the rigidity of the machine are ideal for producing high-precision tubular parts in a low volume production environment. Since its introduction in the 1980s, it has attracted a large user base, with more than a hundred machines sold worldwide, predominantly into aerospace and motorsport sectors for small-batch production, prototyping, and for repair or reverse-engineering purposes.

Manual operation makes Evbend exceptionally versatile, simple and safe. There is almost no limit to the intricacy and multi-bend complexity of tubular shapes that can be formed, thanks to the machine's ultra-compact bending head, and the versatility that manual operation brings to

the manipulation process. However, the sheer ease of use of Evbend is probably the machine's strongest selling point.

There is no complex user interface to learn. Operators can typically grasp how the machine works within minutes. Users can create bending programs in two ways. First, by entering the standard tube bending information (XYZ/YBC values, or the distance tube is fed out, rotated, and the angle of bend) into dialog screens on the Evbend's Windows operator interface; this data can also be transferred from a coordinate measuring machine. Alternatively, users can program the machine using a teaching mode. This latter method is particularly powerful: it is so simple to use that a part can be reverse-engineered by bending and comparing a tube against an existing part, with the user capturing the underlying material feed, rotation, and angle of bend information as the desired points are reached.

Once the bend data is entered, the user can start bending parts, under the interactive guidance of the machine. Evbend's new touch-screen HMI displays the actions required in sequence - with real-time feedback of positional data as tubing is fed, rotated or bent. The precision and repeatability of these feed, rotation and bending operations is assured by a smart electromagnetic braking system. Encoder feedback on each axis ensures that all movements are made with extreme precision. Evbend's pneumatically controlled mandrel is automatically applied during the bending cycle, with programmable control over mandrel withdrawal.

As standard the machine is supplied with a right-hand bending head. However, Evbend can also perform left-hand bending with the addition of an optional second bending head.

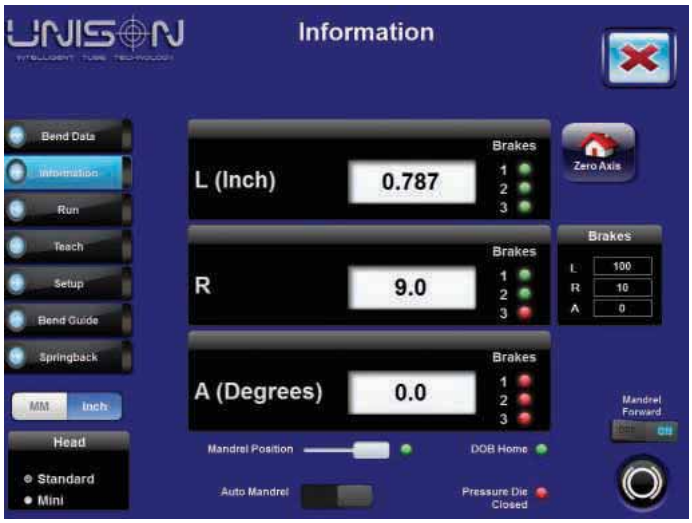
The major element of Unison's upgrade to the Evbend machine is the provision of a state of the art Windows HMI. This replaces a previous dedicated controller and operator interface - which required the connection of a separate PC to run the bending program database. Unison's new HMI meets the demands of existing users for a fully integrated machine. It also brings many attractive new features to this tube bending machine concept including greatly improved graphics, touch-screen control, simple integration into factory networks, and access to Unison's powerful CAD tools and interfaces for the automated creation of tube bending programs. The new HMI is also available as a retrofit for Evbend's existing user base in aerospace, motor racing and other precision tubular manufacturing sectors.

Unison is also working on a larger version of the Evbend machine, which will apply power assistance on the bending axis to allow tubing of up to 50 mm/2 inches in diameter to be manipulated.

Unison started in business by developing control systems for metalworking machinery and supplying a number of prominent UK

machine manufacturers in the 1970s and 1980s. In 1991 the company moved into machinery design, focusing on machines for tube bending. At that time, tube bending machines were powered hydraulically. In the early 1990s Unison developed a range of machines employing electrical servo-motors for controlling bending motion. These were

the world's first 'all-electric' machines for tube bending. The performance of Unison's new machine design, with its fast and repeatable software-controlled setup, right-first-time action, low power consumption, and quiet and clean operation, was an instant success. The company has progressively led the tube bending machinery industry by increasing the tubing diameters that can be formed using all-electric motion and is now one of the world's leading manufacturers of tube bending machines and associated software. In 2014, Unison took another quantum leap in tube bending machine power by developing a servomotor-powered machine architecture that is capable of bending thick-walled piping with diameters of 225 mm and more.



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Machining centre and milling machine support subcontractor's expansion plans

MNB Precision is investing more than £1 million in its future, establishing a new and larger headquarters in Coventry to house an impressive portfolio of high-tech machine tools that will include additional top-of-the-range Soraluce milling and Hartford machining centres from T W Ward CNC Machinery (Ward CNC).

The long-established (over 35 years' ago) family-owned company specialises in tight-tolerance CNC precision machining, utilising best-of-breed milling, turning, jig boring, spark erosion and grinding technologies, for example, to not only meet but also surpass the needs of its predominantly, but not exclusively, oil and gas industry-based customers including clients such as Halliburton, Schlumberger, NOV and Weatherford.

In particular, MNB Precision has developed an enviable reputation for tackling complex parts in difficult-to-machine and exotic materials such as Inconel, beryllium copper and non-magnetic stainless steels.

Rapid growth over the past few years has prompted continuous investment in new machines to expand its capabilities and capacity. The machine portfolio already comprises a host of Ward CNC-supplied machines, including five Hartford machining centres and two Soraluce milling machines.

It has been the reliability and success of these machines, coupled with customer encouragement to continue to invest in these machine brands, that spurred the latest wave of investment in a Soraluce FL8000 travelling-column milling centre and Hartford double-column Blockbuster PRO 3150AG machining centre, as MNB Precision's business development manager Will Melly explains:

"Our expanding order book, not only within the oil and gas sector, was putting increased pressure on the throughput of our existing machines, which are sited in three separate but co-located facilities that the company has steadily acquired as we have expanded.

"The imminent move to our new site will effectively double our floorspace and allow all machines to be housed under the same roof, certainly helping us to improve the logistics of machining and further streamline our processes.

"Coincident with this major expansion is our determination to widen our customer base, enabling new clients in sectors like nuclear and aerospace to exploit our already considerable expertise.

"It was with this in mind and a dogged determination to continue to provide all customers, existing and new, with exactly what they need in terms of machining capacity that we turned to Ward CNC again.

Offering X, Y and Z travels of 8,000 mm by 1,800 mm by 1,300 mm and a 32 kW/1,045 Nm torque spindle, the Soraluce FL8000 milling centre will feature a 4,000 revs/min automatic indexing head, indexable in 0.001 x 0.001deg increments, B axis large bore rotary table and a Heidenhain iTNC 530 CNC system.

The 40-tool Hartford Blockbuster 4-axis machining centre, which has a Fanuc 0i-MD Hartrol Advanced programming System CNC, provides X, Y and Z travels of 3,060 mm by 1,560 mm by 780 mm. The 6,000 revs/min, 26 kW main spindle works in conjunction with hardened and ground guideways to guarantee consistently rigid and reliable heavy-duty machining.

"In discussing new machining contracts, certain customers suggested we investigated these larger capacity Soraluce and Hartford models to enable us to take on new and larger work. Based on past experience with the machines and service provided by Ward CNC, we did not hesitate to respond to these calls by ordering the new Soraluce and Hartford machines."

The machines are scheduled for delivery in early 2015.

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Prepared for the future

The INDEX G220 turn-mill centre continues the tradition of the company's successful, compact G-series, but has now been completely redesigned in response to market requirements, the growing complexity of components and falling batch sizes. Thanks to a motorised milling spindle capable of 5-axis milling and a tool turret with Y-axis, the G220 operates with great flexibility and can execute virtually any turning or milling machining process.

The development engineers at INDEX have transferred their full experience from the R and G machine series into the new design of the G220. The result is a compact machine which performs typically high-quality turning and 5-axis milling with a footprint of approximately 10 m^2 (excluding bar loader).

A heavily rubbed cast iron machine bed, together with the generously sized linear guides in the X and Z-axes, ensures excellent stability and damping properties. With a distance of 1280 mm between the main and counter spindle and a maximum turning length of 1000 mm, the G220 turn-mill centre offers a spacious work area. All components of relevance to the machine operator, i.e. the main and counter spindles, the turret and the motorised milling spindle, but also the machine's operating panel, are located within an "ergonomic belt", as INDEX calls the area marked in turquoise on the machine enclosure and which is ergonomically easily accessible to the machine operator.

The main and counter spindles have been designed identically, are fluid-cooled and feature a clearance of 65 mm (chuck up to max. 250 mm diameter). They make possible productive turning machining with a power of 20/ 24 kW (100 / 40 percent), a torque of 135/ 190 Nm and a maximum speed of 5000 rpm.

The spindle centre is located 1350 mm above the ground. A tool turret is located in the lower part of the machine. Here, customers can select between VDI 25 and VDI 30 tool mountings and a corresponding 18 or 12 stations, all of which can be equipped with individually driven tools (power 6 kW, torque 18 Nm, speed 7200 rpm).

The 5-axis motorised milling spindle (power 11 kW, torque 30 Nm, speed up to 18000 rpm) is fluid-cooled and has hydrostatic bearings in the Y/B-axes. The stable circular guide further ensures excellent rigidity and damping. The Y-axis features a +/-80 mm stroke, the B-axis driven directly by a torque motor has a swivel range of -35 to +215 degrees. With a large travel distance in the X-direction, machining at up to 30 mm below the turning centre height is possible. The motorised milling spindle operates using a one or optionally two-row tool chain magazine which features space for 70 or 140 tools (HSK-A40). The stations feature a tilting basket design which protects the tools against contamination from oil and chips.

Users particularly benefit from the double-row tool magazine, which enables setup during main time, as well as from the integrated drill breakage monitoring unit which employs a light barrier to automatically check if the tool is still fully available every time a tool change is performed.

The new version of the INDEX MBL bar loading magazine (option) offers the specific advantage of guiding the bars in roller bearings. Irrespective of the bar speed, this results in an extremely precise and low-vibration bar guide. The INDEX MBL is suitable for bars of up to 65 mm diameter and a length of optionally 3200 mm or 4200 mm.

The INDEX G220 features a CNC-controlled and CNC-programmable gantry-type removal unit for gentle removal of finished workpieces. It can unload both remnants from the main spindle and finished parts from the counter spindle.

The G220 offers user friendliness and process reliability with the latest generation of the INDEX C200 SL controller. This is based on the Siemens Sinumerik 840D sl (solution line) and features an 18.5 inch touchscreen. The user interface is integrated in the NC core and does not require a Windows PC.

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ITC has a ball with new end mill line

Industrial Tooling Corporation (ITC) has once again extended its extensive line of aluminium milling tools with the introduction of the new 2172 Cyber Series of two flute ball nosed end mills. Designed specifically for high feed machining with impeccable surface finishes, under test conditions the new 2172 Series surpasses the performance levels of competitor milling lines.

Developed by the R&D team at ITC's manufacturing facility in Tamworth, the solid carbide two flute ball nosed line is manufactured from ultra wear resistant micro-grain carbide. The benefit of this high quality carbide composition is that edge wear and chipping are minimised to extend tool life. For manufacturers working on production runs, this gives consistency and longevity with no unforeseen tool changeover requirements. Additionally, for end users in prototype and small batch production environments, the astounding tool life reduces inventory requirements and tooling costs.

The specialists at ITC have created this new line based upon continuous testing and feasibility studies with globally renowned OEMs in the aerospace and motorsport industries. The result is a straight shank, right hand helix and centre cutting range that excels in swarf evacuation to deliver outstanding surface finishes whilst cutting at the highest speeds and feeds. Incorporating innovative new flute geometry, the 2172 Series removes swarf from the cutting area with such haste that swarf recutting or collection around the cutting area will never be an issue.

Suitable for machining aluminium and other non-ferrous materials, the 2172 Series has a geometry that has been optimised to guarantee rigidity and minimise vibration when cutting at high feed rates. The new line is available in diameters of 3, 4, 5, 6, 8, 10, 12, 16 and 20mm with matching shank diameters. The overall length of the end mills ranges from 40 to 100mm depending upon the chosen diameter with length of cut varying from 12 to 40mm. For more details on how this innovative new line can reduce your tooling costs and inventory, whilst improving your productivity and surface finishes, contact your local ITC representative.

Industrial Tooling Corporation (ITC)
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Milling tool innovation

Innovative CoroMill® 5B90 milling concept excels at high-performance machining of aluminium components

Sandvik Coromant, a global leading supplier of cutting tools, tooling solutions and know-how to the metalworking industry, presents the innovative CoroMill 5B90, a high-performance tool for finishing aluminium components. The state-of-the-art tool with an innovative cutting edge arrangement delivers excellent surface quality, without burr formation and reduces cost-per-part by up to 30 percent. CoroMill 5B90 is ideally suited for typical automotive industry applications such as machining cylinder heads, gearboxes, valve blocks and motor block crankshaft and deck faces.

The new CoroMill® 5B90, a new finishing cutter for aluminium from Sandvik Coromant, scores with an excellent surface finish and reduces the cost-per-part by up to 30 percent

Numerous benefits
The new customer- and application-specific finishing cutter for aluminium allows a controlled, high-feed machining process, resulting in improved part quality. As no cost-intensive insert adjustment is necessary, setup time can be reduced by up to 66 percent. While each tool is custom-made for customers, Sandvik Coromant offers PCD inserts from stock.

Superior performance
When machining the cylinder heads of a four cylinder engine made from AlSi9Cu-1 at a cut depth of 0.7 mm, the new CoroMill 5B90 (diameter of 160 mm, 9 cutting edges) achieved a tool life of 40,000 parts (at a rotational speed of 7,000 rev/min and a feed rate of 12,500 mm/min).

Find out more at
www.sandvik.coromant.com/en-gb/industrysolutions/automotive/engine/pages/cylinder-head.aspx

Sandvik Coromant is a global leading supplier of cutting tools, tooling solutions and know-how to the metalworking industry. With extensive investments in research and development we create unique innovations and set new productivity standards together with our customers. These include the world's major automotive, aerospace and energy industries. Sandvik Coromant has 8000 employees and is represented in 130 countries. We are part of the business area Sandvik Machining Solutions within the global industrial group Sandvik.

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Mazak Open House offers a glimpse of 'tomorrow's' technology

One of the highlights of the machining calendar, the annual Yamazaki Mazak November Open House certainly didn't disappoint.

Running from 18th–21st November at Mazak's European Technology Centre and manufacturing plant in Worcester, it featured 20 state-of-the-art machine tools, including the latest INTEGREX, VTC 800 Series and laser processing machines.

The event, which was themed 'make [tomorrow] better,' included guided tours of Mazak's 29,000m^2 manufacturing facility, which manufactures more than 1,000 machine tools every year, a 15 minute MAZATROL programming seminar and on-hand application support and advice from Mazak's application engineers.

The stars of the show were the machining technologies, with four standout machine tools on display. The INTEGREX i-100S, the latest variant of Mazak's flagship INTEGREX range, combines a large machining area with a compact ergonomic design. The machine at the Open House was equipped with a new BARTAC S bar feed system, which offers integrated work unloading and conveyor handling of completed workpieces for lights-out and unmanned running.

Alongside it were the INTEGREX e-1250V/8 II multi-tasking machine tool, designed with a large machining envelope which makes it ideal for manufacturing very large diameter complex parts and the UK-built VTC 800/30 HD, a 50 taper variant of the highly successful VTC 800 series. Laser users were able to view the SUPER TURBO-X 3015, a machine specifically designed for super-fast, non-stop cutting of a variety of different materials and thicknesses. It is also equipped with a new Servo Focus Torch to deliver exceptionally high energy density to reduce piercing time and increase productivity.

Richard Smith, Yamazaki Mazak managing director UK & Ireland Sales Division, comments: "Our November Open House is becoming a regular fixture in the machining calendar and is a great opportunity for both existing and new customers to witness our complete range of machining solutions.

"Our theme of 'make [tomorrow] better' is an extension of our philosophy of supporting customers in the development of their machining capabilities, embracing state-of-the-art technology such as multi-tasking, turning, 5-axis machining and laser processing, which can help them become more efficient, more productive and more competitive."

Mazak and Airbus Group join forces to offer friction-stir welding solution

Yamazaki Mazak has joined forces with Airbus Group to offer a combined machine tool and friction-stir welding solution.

The co-operation agreement enables Mazak, under license, to incorporate the DeltaN FS® friction-stir welding solution, which was developed by Airbus Group Innovations, the company's research and technology network, into a number of machining centres in the Mazak range.

DeltaN FS technology is a next-generation solid-state friction-stir welding process that requires lower vertical down forces and further reduces post-welding distortion to efficiently produce high quality welds of exceptional strength. The process can be used to weld a range of material combinations and can be used in multiple applications, including the automotive, thermal solutions, aerospace, rail and shipbuilding sectors.

Marcus Burton, European group managing director for Yamazaki Mazak, comments: "I am very pleased to announce this co-operation agreement between Airbus Group and Mazak, the world leader in multi-tasking machine tools. The introduction of the DeltaN FS technology onto Mazak's CNC machine tools offers an exciting opportunity for manufacturers to combine welding with pre- and post-machining operations into a single, more efficient process. It is another important step in our commitment to new technology innovation, combining multiple metalworking operations onto one machine platform."

Wulf Hoeflich, who heads the Airbus Group Technology Licensing initiative, adds: "The DeltaN FS technology provides exceptional quality welds, and is ideally suited to working in combination with machining operations, which together provides a cost-effective solution to customers. Our joint technical teams look forward to working closely together in introducing this advanced technology to manufacturers who want to combine operations in a single, more efficient process."

DeltaN FS friction-stir welding technology was exhibited at the major exhibitions: BIMU in Milan, EuroBLECH in Hannover and JIMTOF in Tokyo.

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Six of the best

Avon Valley Precision Engineering invests in six new Doosan machines in the last 18 months

Leading precision subcontract specialist, Avon Valley Precision Engineering Ltd (AVPE), has significantly increased its machining capabilities and capacity over the last 18 months by investing in six new Doosan high-performance lathes and machining centres supplied by Mills CNC.

The new machines: two DNM 400 vertical machining centres (both supplied with 4th-axis units), two Puma 3100 lathes (one equipped with driven tools) and two VC630 5AX universal 5-axis machining centres, installed at AVPE's 2,500 sq metre facility in Bristol, are being used to machine a range of high-precision complex parts primarily, but not exclusively, for customers in the aerospace sector.

The investment in new multi-tasking machine tools reflects AVPE's ambitious growth plans for the future and provides tangible evidence of the company's continuous improvement programme in action.

Continuous improvement

First implemented in 2011 following a management buyout the year before, the programme is wide-ranging in its scope and scale and demonstrates the company's commitment to constantly review and invest in its plant, equipment, manufacturing processes and systems, and develop the skills of its people as a route to improving company productivity and performance.

Over the last three years AVPE has experienced a dramatic transformation. Notable highlights include:

• An increase in floor space has helped the company reorganise its manufacturing operations, create flexible manufacturing cells and, as a consequence, improve work flow and production efficiencies;

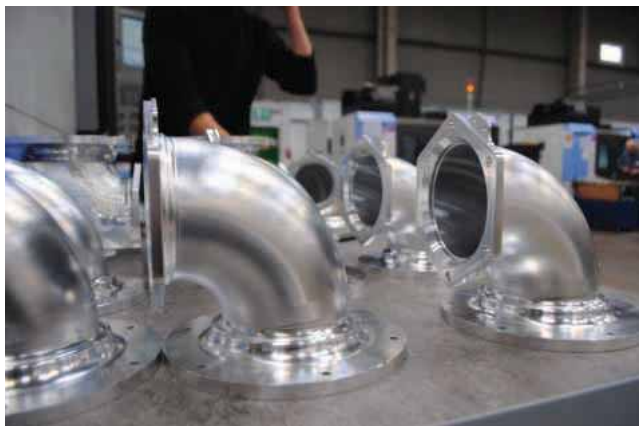
• Investment in high-performance machine tools and ancilliary equipment, and sophisticated CAD/CAM software has improved quality and helped reduce lead times and operational costs;

• Previously unpredictable MRO (Maintenance, Repair and Overhaul) business has, through the efforts of senior management in securing LTAs (Long Term Agreements) with customers, become easier to plan, predict and fulfil;

• Investment in multi-tasking machine tools has enabled the company to secure more high-value contracts for machining small series complex, high-precision parts;

• Adoption of Lean Manufacturing and a commitment to Best Practice, helping the company achieve the following accreditations -: AS/EN9100 "Rev C"; ADS SC21 (Bronze); Airbus UK AUK/SA/10101 and Bombardier Global Series 7000/8000

• To combat potential skills shortages and to secure the long term future of the company, AVPE has introduced its own Apprentice Training Programme. (The company reports that 10 percent of its workforce is undertaking apprenticeship training).



A380 aluminium fuel injection connector parts machined by AVPE on their new Doosan VC630 5AX machining centres

The Doosan factor

Part and parcel of AVPE's continuing growth and success has been its investment in Doosan machine tools.

In early 2013 the company upgraded its milling capabilities by purchasing its first DNM 400 vertical machining centre. This machine, supplied with a 4th-axis unit as part of the deal, was acquired primarily to machine aluminium interior cabin parts for an aerospace customer.

Steve Eccles, AVPE's technical director says: "Our existing milling capabilities were under pressure and couldn't be relied upon to achieve (consistently) the part accuracies, surface finishes or the delivery times required.

"We researched the market and identified the Doosan DNM 400 as being the ideal machine to meet our requirements.

"The machine's rigid design and build, its advanced spindle technology, its cost-competitive price and the number of positive endorsements from customers who had invested in DNM machines, all helped in our decision making process.

"We specified the machine with a 4th-axis unit to give us greater flexibility and the ability to machine parts to completion in fewer setups and reduced cycle times.

"We were so impressed with the DNM 400's performance that we ordered an identical model soon after and this was installed in May 2013."

Virtually at the same time as the first DNM 400 was being installed at AVPE's facility, negotiations were well underway regarding the company's investment in a large-capacity Puma 3100 lathe.

Steve Eccles continues: "Puma lathes have a good reputation in the market for their accuracy, repeatability and reliability.

"The Puma 3100 was acquired to increase our turning capabilities and the model we selected, the Puma 3100LM, had driven tooling, which we knew would give us extra manufacturing flexibility and the ability to machine parts to completion in one hit."

The Puma 3100LM lathe was installed in April 2013 and AVPE acquired a second Puma lathe, a Puma 3100, in December 2013.

Both lathes are being used to machine a range of metal and plastic parts for aerospace customers, for example metal Pintle Pins and plastic greasing tools.

5-axis technology

It should come as no surprise, bearing in mind AVPE's focus on multi-tasking machine tool technologies and the productivity

benefits they deliver, that the company should investigate 5-axis machining as a route to further improve its performance, and secure additional high-value manufacturing work.

A contract to machine aluminium fuel injection connectors for A380 aircraft ultimately provided the catalyst for the investment.

Steve Eccles again: "The reliability and the performance of the previously purchased Doosan DNM 400 and Puma 3100 machines and the positive relationships we had built with Mills CNC during the purchasing and installation process, meant that we included Mills CNC in our 5-axis machine tool research process.

"We were looking for a universal 5-axis machine that could provide us with both 3 + 2 positional and fully simultaneous 5-axis machining capability. We wanted the machine to have a good sized working envelope so that we could machine large, small and/or multiple jobs in one set-up...and we needed the machine to be competitively priced and to be available for immediate delivery.

"The Doosan VC630 5AX came out on top against all our research criteria and in July 2013 the first machine was installed."

AVPE's 5-axis machining cell showing the 2 x Doosan VC630 5AX 5-axis machines in action

A second VC630 5AX was ordered and installed a few months later.

VC630 5AX machines have a rigid construction, exhibit excellent vibration and heat dissipation characteristics and punch well above their weight. They are able to handle large parts (730mm x 500mm), and are equipped with a 630mm diameter table. (The machines' table size was a particular strength the VC630 5AX's had over competitor machines).

VC630 5AX machines use the most advanced level of Heidenhain iTNC 530 control with 1000 block look-ahead contour capability for reliable high-speed machining.

The machines are equipped with powerful, high-torque 12,000 rpm 32 kW spindles, and feature the dual contact 'Big Plus' face and taper configuration that ensure high accuracy even when rough machining tough and difficult-to-machine materials.

AVPE's 5-axis machines operate virtually around the clock. They are being used to machine both MRO and small series production parts to exacting tolerances and stringent surface finishes.

To get the most, and the best, from the machines a number of AVPE engineers attended 5-axis training delivered by the CNC Training Academy.

Steve Eccles concludes: "Since 2011 AVPE has experienced significant growth. By upgrading our machining capacity and capabilities, and through acquiring advanced multi-tasking machine tools, we are stronger and more flexible than ever before."

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The micro machine of the future

The watchmaking and micro machining industries are two sectors where Tornos has a well established reputation with regard to bar turning. Until the launch of the Swiss Nano, a manufacturer has never gone so far ahead in design, ergonomics and integration research with regard to a human-machine interface. Now, Tornos UK has a SwissNano at its Coalville, Leicestershire headquarters for micro manufacturing companies to view the potential of this machine first hand.

Nobody knows the watchmaking sector better than Tornos and the company engineers have pulled out all the stops to develop a machine whose design stands out resolutely against other products in the market with the aim of creating a new machine tool category.

Combining all aspects of design

It is well known that design must bring together two aspects. Firstly, the aesthetics that play on emotional effect, and secondly the practical aspects that work on both a rational and emotional level. Tornos marketing manager, Brice Renggli says: "We wanted to create a modern automatic turning machine with a 4 mm capacity, occupying minimum floor space and with complete 180° access. So, we have created a frontal design and integrated a tablet in addition to the conventional control."

Given the space constraints in watchmaking and small workshops, the Swiss Nano was developed so that it does not require any rear access. If necessary, it can even be placed against a wall. The machining area is accessible from all sides.

The Swiss Nano was intended to be a resolutely, uncompromising watchmaking machine and its kinematics enable it to produce 75 percent of the moving parts in a watch. However, in the UK, Tornos envisages this machine making a significant impact in the production of small connectors and the electronic industry. Production for the watchmaking and electronics sector includes anything from simple to complex parts that may require gear hobbing.

With a footprint of 1.8 x 0.65 x 1.6 m (LxWxH) and a maximum workpiece diameter of 4 mm, the Swiss Nano incorporates an X1/Y1 tooling platten with seven turning tools with maximum shank dimensions of 8 x 8 mm. The Swiss Nano also has the capacity for three end mounted tools with a diameter up to 16 mm as well as another two end mounted tools for counter-operations. To meet the specific needs of the end user the Swiss Nano is available with optional extras such as a gear hobbing device, transverse drilling, HF spindles and polygon tools.

The 1 kW induction motorised spindle and counter spindle are both capable of a maximum speed of 16,000 rpm. Furthermore the Swiss Nano offers fixed, rotating and guide-bushless operation to ensure the customer receives the machine capable of producing all their parts in this diameter range. The Swiss Nano also offers peripheral additions such as a carousel collection system, vacuum, smoke extractor and fire prevention system.

The Swiss Nano includes a precision tool setting system using a sensor and feeler probe. The aim of this is to provide a user-friendly system able to position the tools to within 3 to 8 µ, according to the bar diameter. The greatest advance may be in terms of communication. The Swiss Nano has a graphic tablet on top. All the basic production data (workpieces, products, machine, bar changeover, fleet monitoring) are reported on this interface. At a glance, the operator can access all the data for a specific machine or for a whole fleet of machines.

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Star Open House is a runaway success

Sliding head lathe manufacturer Star Micronics GB recently held a very successful Open House event at its Derbyshire head office and technology centre.

The company opened its doors for three packed days from 14th to 16th October, during which it unveiled some exciting new technology and shared machining knowledge with visitors from all over the country.

Star displayed numerous machines at the event, including the popular SV-20RIV, SR-32J and the SW-20. The SB-20R Type G, which has recently received an upgrade to its platen with two high-speed cross working spindles, showcased its engraving capabilities by producing parts emblazoned with several intricate characters, including a unique sequential number on each part. The switchable guide bush/non guide bush capability of this machine gives it increased flexibility, allowing improved material utilisation on short components.

Alongside the impressive array of sliding head lathes, Star's trusted partners also manned their stand to display and discuss their products, ranging from fluids and

tooling to quality control and software. Representatives from Renishaw, CNC Data, Rainford Precision, Floyd UK, Emmaco, Weiland and many others were on hand to give their advice and support to visitors seeking a more complete production solution.

One highlight was the recently introduced 12 mm machine, the SB-12R Type E, which demonstrated its precision turning capabilities in conjunction with a FANUC robot arm which automatically sorted and stored the produced parts to illustrate the automation achievable through the effective use of Star's technology and that of its partners. However, the undoubtable stars of the show were the two latest additions to the Star range, the brand new ST-20 triple turret mill-turn and the SW-12RII, a highly flexible and fast twin platen machine for the top production capability in sub 12 mm components. These exciting new machines caused a stir among visitors and typify Star's commitment to setting new standards in sliding head lathe technology.

Managing director Steve Totty was delighted with the outcome of the show:

"This has been the most successful Open House we've held in recent years. The new machines, the SW-12RII and ST-20, have both been extremely well received and have already generated numerous enquiries."

With record attendance figures and several orders already placed, Star GB is justifiably claiming it as a resounding success and is already planning for next year's event.

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Harrison Alpha lathe proves the perfect solution

Huddersfield subcontractor Precision Component Manufacturing Ltd has purchased a new Harrison Alpha 1400XS manual/CNC lathe and a V550 lathe from 600 UK, continuing the company's long association with the Harrison brand for the accurate machining of components.

The new lathes, ordered to meet Precision Component Manufacturing's expansion plans, bring a range of benefits including ease of programming, an essential consideration given the company's need for quick changeovers.

Precision Component Manufacturing manufactures for a diverse industrial customer base, although its speciality is in the creation of bespoke valve parts. Having reliable, high-quality lathes is critical to the successful completion of orders and, for the company's director, Ian Salter, the choice of lathe supplier was easy: "We have had an M400 manual centre lathe since the day we opened and 10 years ago installed a Harrison Alpha lathe at our manufacturing site which has always done what we wanted from it, so when the opportunity arose to renew the machines at our facility, we simply asked 600 UK to recommend the latest models most suitable to our requirements."

The recommended choices were the Alpha 1400XS CNC lathe and the large capacity V550 manual lathe.

The Alpha 1400XS is ideal for creating detailed, intricate components with fast, high-quality repeatability, excellent accuracy and surface finish. Features include a 400 mm swing over bed, 1250 mm between centres and a 7.5 kW main spindle motor, alongside a wide range of advanced turning features.

A critical consideration is the speed and ease of programming capable with the Alpha. The lathe's intuitive Alpha system guides the operator through a series of questions, in order to automatically generate a program to turn each part.

"Typically, each part we manufacture is a one-off, meaning that we would potentially lose a lot of time setting up each turn. However, the Alpha is so easy to program that we can generate accurate results in only a short space of time," explains Ian Salter.

"More importantly, the quality of the finished product is always to an impeccable standard, which is vital to our continued credibility with customers."

The Harrison V550 lathe provides Precision Component Manufacturing with the ability to create larger components beyond the capacity of the Alpha, as well as permitting use by several operators at the facility who are not CNC-trained. Its heavyweight credentials provide high spindle stiffness, stability and accuracy at all speeds, loads and temperatures.

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Redesigned full-length bar magazine

The Master 80 HyperFlexible bar magazine manufactured by Iemca, Italy, proved popular when it was introduced in 2009 due to its ability to accept stock of any diameter from 15 to 80 mm using just one guide channel. Now the machine has been given a new loading system that allows bars to be presented ergonomically at a height between knee and pelvis without bending the back or arms, so operators no longer need to handle bars at chest height or lean into the rack.

Available in the UK through 1st Machine Tool Accessories (1st MTA), the new version of the magazine is called Master 80 UP HyperFlexible. Stock can be transported to the loading position by fork lift truck, hand pallet truck, overhead crane, a hoist or a handling trolley. The bars then enter the magazine via an inclined chute and are raised one by one to rack level automatically by a fully guarded, integral, vertical lift system.

Three sizes of magazine are available for feeding stock of 3.3 metres, 3.8 metres (12 ft) and 4.3 metres maximum length. A 12 ft bar, if it is steel of 76 mm diameter, weighs 130 kg so it is highly desirable to avoid manual handling.

The magazine's 600 mm capacity (ie 10 bars of 60 mm diameter, for example) is generous and the loading height can be set at between 500 and 1,128 mm to suit the model of fixed-headstock lathe.

Iemca and its agent, 1st MTA, have researched the turning market in the UK and found that only a tiny fraction of fixed-head lathes are fed by full-length magazines, the remainder being short bar feeders. However, there are clear signs that longer magazines are becoming more popular. The main reasons are less stock wastage, as remnants are a smaller proportion of bar length, and longer periods of unmanned running. The latter maximises productivity and allows the extra cost of a long bar feeder over a short bar feeder to be recouped in less than nine months.

Historical fears of vibration occurring when rotating long bars, leading to lower precision machining, have been allayed by the increased rigidity of modern bar feeders. The Master 80 UP HyperFlexible, with its 1.7 tonne installed weight, is a good example of a robust, high precision, long bar magazine. Extreme torsional and longitudinal rigidity is complemented by a hydrodynamic guide channel and a bar pusher, which is supported by two pairs of self-adjusting rollers to further minimise vibration. Even hexagonal section stock can be turned without undue vibration.

Flexibility for users that set up jobs frequently across a wide range of bar diameters, without the inconvenience of spending much time changing the guide channel each time, is the principal advantage of the magazine's core design. It means that changeover from one bar to the next can be accomplished in around one minute, leading to minimal lathe idle time. Only the pusher collet and the two-part front bushing need to be exchanged. On other bar feeders, from three to six different sizes of channel would be needed to span a bar diameter range of 15 to 80 mm.

Very high precision is achieved during the feeding process due to the brushless, electronically controlled motor which constantly regulates bar speed, torque and bar feed position. Further advantages of the Iemca Master 80 UP HyperFlexible are automatic operation, the capacity to retrieve the remnant, and an axial shifting device that allows rapid access to the machine tool for maintenance and adjustment.

A video of the Master 80 UP HyperFlexible in action can be seen by visiting the following URL:
https://www.youtube.com/watch?v=KlItSsR-agc

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The new Iemca Master 80 UP HyperFlexible from 1st MTA combines the bar magazine's historical advantage of using one guide channel to span 15 to 80 mm stock with the new benefit of being able to load heavy bars ergonomically at a height between knee and pelvis without bending the back or arms, so operators no longer need to handle bars at chest height or lean into the rack, avoiding the potential for strain injury

RK International partners Eurospark to develop EDM market

RK International Machine Tools and Eurospark have entered into a partnership that will see the sales of the Eurospark Joemars range of wire and die sink EDM machines split geographically between the two companies. RK International is concentrating on the southern half of the UK, while Eurospark, the UK importer of Eurospark Joemars EDM machines, will be responsible for the remainder.

The partnership is the cementation of a long-standing relationship between the two businesses, which has seen RK International selling Joemars machines on a less formal basis over the years.

"The two companies and senior managers have had good working relations over many years, so it makes perfect sense to extend that relationship into a more formal sales partnership agreement," says Dick Aldrich, sales director of RK International Machine Tools Ltd. "We can now capitalise on our extensive network of customers across the south of England to actively promote the Eurospark Joemars range of wire, die sink, and spark eroding systems."

The area covered by RK International is south of a line from the Wash in the east to South Wales in the west, with Eurospark continuing to support customers north of that along with Ireland. Joemars covers the entire spectrum of EDM technology, manufacturing a wide range of EDM machines that includes manual machines such as its popular spark erosion tap removers, through to full CNC die sink machines with over one metre travel in the x-axis, CNC wire EDM machines with machine travels of over 2000mm and EDM drilling systems.

"The formal addition of the Eurospark Joemars EDM range to our portfolio, combined with our already existing knowledge of the product range will bring immediate benefits to our customers and the partnership between RK International and Eurospark will further strengthen Joemar's reputation for high quality EDM products across the entire UK," concludes Dick Aldrich.

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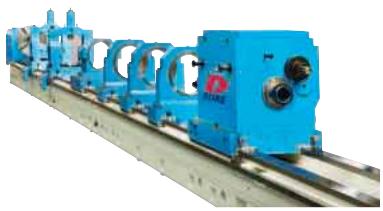
Designed and manufactured in Britain

The Halifax D-Bore is setting new worldwide standards for deep hole boring machines

Halifax Machine Company has designed and manufactured a new generation of high performance deep hole boring machines that offer the most cost-effective machining solutions. The D-bore range had been designed to consistently deliver the highest levels of reliability, precision and productivity to meet the most demanding requirements of industry sectors such as oil & gas, aerospace, OEMs, defence, power generation and steel, where bores are required to extremely close tolerances in components for highly critical applications.

The machines are capable of cutting the smallest or largest diameters in a range of steels, alloys and super alloys to depths of up to 20 metres and diameters up to 300 mm. Counter boring and trepanning up to 500 mm are standard on every machine, depending on tooling, and the D-Bore is capable of utilising all other DHB technologies, including pull counter boring, skiving, roller burnishing, skive & burnish and bottle boring (with X axis).



An industry first

The D-Bore machines include some unique features such as enhanced boring bar damper technology that includes servo driven programmable bar dampers, providing the ultimate in drill tube support to further enhance precision.

The ultra stable, cast iron bed construction has a full to the floor footprint for reduced vibration, longer tool life and exceptional accuracy.

D-Bore is available in four machine configurations in a traditional flat-bed design, proven to be the optimum configuration for stability, capacity and cost.

Machines are equipped with either ejector or STS boring systems as required. STS oil swarf/chip management systems are designed to offer maximum chip flow and removal.

A choice of operator friendly CNCs and graphical user interfaces on the D-Bore are designed to maximize productivity and minimise production costs by providing the optimum performance for all deep hole boring applications.

Each machine in the D-Bore range is custom-built from standard modules to meet a customer's precise requirements. The Halifax engineers are available to discuss and advise on the exact specifications of the ideal D-Bore machine required for the production of a wide range of deep hole bored components.

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Southern Manufacturing & Electronics 2015 nears capacity

SOUTHERN 15 Manufacturing & Electronics
FIVE | Farnborough | Hants | GU14 6XL
10th to 12th February 2015

Southern Manufacturing & Electronics returns to FIVE, Farnborough, from February 10th and 12th 2015. With the move to a three day event stimulating increased interest from overseas exhibitors, the 2015 show is set to be the most international yet.

The 50 percent increase in tenancy for 2015 makes the show a much more viable proposition for international companies looking to engage with UK manufacturing.

The exhibition list for 2015 includes a dramatic increase in the number of exhibitors from continental Europe, plus several new firms travelling from as far afield as Canada, the USA, Japan and Taiwan to take part. The presence of so many new overseas exhibitors delivers an unprecedented opportunity for visitors to discover products and services from major global suppliers in a single, easily-accessible venue.

A few of the noteworthy names include German firm Cosel Europe, with its range of AC/DC power supplies, and Ruwel International, a leading PCB manufacturer serving the automotive, renewable energy and industrial sectors. Also from Germany, AMF Andreas Maier GmbH spotlights its range of clamping and workholding products. Polish CEMS firm Assel showcases its 32 years of manufacturing experience. ERNI Electronics GmbH, headquartered in Germany, is a global supplier of connectors and EMS services, operating from bases across Europe, the Far East and the USA. From Spain, AMES S.A. presents its range of structural sintered parts, soft-magnetic parts, gears, self-lubricating bearings, filters & porous metallic components. The Bilbao Chamber of Commerce is also exhibiting, representing a large number of industrial suppliers from the region.

From further afield, the show welcomes Lodestone Pacific, a manufacturer of wound component parts based in California. Canada's MG Chemicals manufacturers chemicals used in the electronics industry. From Taiwan, Hiwin Technology Corporation produces linear motion systems, while Furukawa Electric travels from Japan to showcase its cabling range.

Overall, the organisers are expecting around 800 exhibitors, which include a large number of top UK industrial vendors such as XYZ Machine Tools, Amada, Trumpf, Bystronic and many others. The new three-day format of the show will make it easier for visitors plan their visit. A new internal layout is designed to improve traffic flow through the exhibition and make it easier for visitors to locate what they want quickly.

As in previous years, Technology Trails will guide visitors through the three main areas of the show: Manufacturing, Electronics and Automotive/Aerospace, enabling them to meet multi-discipline suppliers from sectors such as medical, defence or contract electronics.

Admission to Southern Manufacturing along with the seminar programmes is free of charge, and FIVE Farnborough features ample free on-site parking and straightforward accessibility by road or public transport.

To register online for event tickets, visit www.industrysouth.co.uk or call 01784 880 890. Visitors are also able to keep tabs on all of the most up-to-date reports from the show by clicking on the official blog page at: **http://blog.industrysouth.co.uk** its LinkedIn group **http://linkedin.industrysouth.co.uk** or simply by following **@industry_co_uk** and the **#southmanf hashtag** on Twitter.

For more information, contact:
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www.industrysouth.co.uk

Ajax to demonstrate low cost machining and training packages

Following the success achieved from previous Southern Manufacturing exhibitions in 2013 and 2014, Ajax Machine Tools International has taken a larger stand for 2015 in order to promote the latest additions of its Interactive range of seven CNC bedmill machines and three Euroturn AJEU electronic CNC lathes. Both machine types are ideally suited for use in production, workshop and training environments.

As part of the company's success within education and training, Ajax will also be presenting its latest competitively priced training package, at under £35,000. The package incorporates two UK built machines both fitted with Siemens controls: the Ajax Euroturn lathe and Interactive CNC bedmill. Also included are 12 seats of the Siemens Sinumerik 808D on PC training software for workpiece programming and machining simulation.

Based on the use of the same conversational control system, the Ajax Interactive 720 CNC bedmill incorporates Siemens ShopMill and the Ajax Euroturn AJEU 200 electronic CNC lathe Siemens ShopTurn. This software is integrated with Siemens Sinumerik 808D on PC training system. As a result, this system enables offline programming and machining to be accommodated that faithfully represents actual machine tool operation.

The Ajax Interactive 720 bedmill has the smallest capacity in the range with working strokes of 720 mm in X, 380 mm in Y and 500 mm in Z. It has the added flexibility of a turret-style head able to swivel through +/- 90 deg. Meanwhile, the Ajax Euroturn AJEU 200 electronic CNC lathe has a 200 mm centre height, 42 mm bore and 750 mm between centres.

Ajax Euroturn AJEU 200 electronic lathe with Siemens 808D control as part of Ajax Machine Tools' Southern Manufacturing 2015 exhibition presentation

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Aberlink exhibits cost-effective CMMs

Aberlink Innovative Metrology, the largest UK-owned manufacturer of coordinate measuring machines will be exhibiting the company's best-selling CMMs and advanced optical measuring systems at Southern Manufacturing.

Aberlink will use the exhibition to launch the company's eagerly anticipated programming from CAD module and the Mk IV version of Aberlink's well-known 3D inspection software. The advanced Mk IV software fully supports PH20 and SP25M probes and provides the user with a host of new measurement and reporting functions. Popular throughout the world, across a range of metrology platforms and brands, Aberlink's revolutionary measurement software provides the user with a powerful, yet easy-to-use, interface. The software's unique interactive graphics offer a more satisfying user experience, substantially increasing component throughput whilst vastly reducing the learning period of new users.

Aberlink's popular Axiom Too CMMs will be demonstrated fitted with PH20 infinite indexing position, head-touch probes, SP25M and PH6M scanning probes and Aberlink's advanced interchangeable Camera system. Available in manual and CNC variants, the advanced, easy-to-use Axiom Too delivers outstanding performance when used by the novice or the experienced CMM user. The cost-effective Axiom Too is capable of delivering consistent, precise results within inspection departments or on the shop floor.

The new Axiom Too HS CMM range is the high-specification variant of the company's acclaimed Axiom too CNC CMM range. As a result of its enhanced accuracy specification, swifter acceleration and faster travel, the advanced Axiom too HS is able to achieve higher levels of precision and carry out a far greater number of component measuring cycles in a given time.

Available in four X-Y-Z capacity variants, from 640 x 600 x 500 mm to 640 x 1500 x 500 mm, the cost-effective Axiom Too HS can truly be described as the complete, high speed, high precision, inspection centre. Impressive measuring accuracy is achieved through the use of the latest metrology techniques and advanced in-house manufacturing methods. The Axiom Too HS boasts an aluminium bridge with a very low thermal mass, rendering the machine ideal for use either in controlled environments or within less than perfect shop-floor conditions. Thanks to the machine's use of advanced materials, its reduced inertia results in class leading speed of operation. For increased accuracy air bearings of optimised stiffness are employed on all axes, whilst a granite Y Beam allows preloading of bridge bearings in both directions. Borrowed from the aerospace industry, the CMM's sturdy component support consists of an advanced granite/aluminium honeycomb construction, this technology, provides natural damping and further improves the machine's thermal properties.

Equally rewarding when used by the novice or an experienced CMM operator, the easy-to-use Axiom Too HS utilises Aberlink's famous, intuitive 3D software, ensuring greater user productivity and profitability. A welcome bi-product of any Aberlink CMM inspection routine is that a simultaneous picture of the measured component is created on the computer screen. Dimensions between the measured features, mirroring those that appear on the component drawing, are then picked off as required. In essence this 'smart' software represents an intelligent measuring system that is able to automatically recognise and define the various features being measured. Aberlink 3D is claimed to be the easiest to use CMM software currently available, as a result a complete novice is usually able to perform relatively involved measurement routines after just five minutes training.

Although the Axiom Too HS boasts an all-inclusive standard specification, to ensure that customers are able to receive a machine to match their exact needs, a wide range of touch probes, a CMM camera system for non-contact inspection and several software options are also available.

Also being demonstrated, Project X is an advanced vision system designed to deliver precise shop floor measurement. The flexible non-contact device features Aberlink's powerful Vision software plus a host of easy-to-use inspection tools.

Due to the burgeoning global demand for the range of high quality CMMs and optical measuring systems, Aberlink moved in April 2008 to a custom-designed modern manufacturing facility. Quadrupling the current manufacturing area, the advanced new manufacturing facility enabled a quantum leap in production capacity.

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AMF makes its mark

Andreas Maier GmbH & Co KG was founded in 1890 and will be celebrating 125 years of design and manufacturing in 2015.

This year at the Southern Manufacturing show, AMF will be exhibiting a wide range of workholding systems including the new range of permanent electro-magnetic plates and control units, vacuum clamping and zero point system.

The stand will have examples of the new range of mechanical zero point clamping modules and pallets, the new "Black Edition" centering vice and pneumatic zero point mini-station aimed at small to medium range 5-axis machining applications.

Also on display will be the AMF Writer and AMF Marker part marking tooling and automation solutions. The new AMF Writer marking tool is a fast and cost-effective way of marking workpieces automatically. The permanent markings are made by the machine itself in the machining centre. The machine loads the tool automatically and a separate operation removing the need for a special marking machine. With a service life of 70 km, countless workpieces can be marked without the needle having to be remachined or replaced. The AMF Writer marking tool produces a permanent mark on rough and smooth surfaces of various materials. During the marking process, the needle equals out surface uneveness.

Visit Stand P122 to discuss your production process requirements.

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OGP measures up

OGP UK will be demonstrating the many benefits of multi-sensor measuring machines at the Southern Manufacturing 2015 Exhibition (stand N80).

Ever increasing product complexity demands that manufacturers have the ability to accurately measure a vast array of dissimilar features. To meet both today's and tomorrow's measuring challenges, OGP UK provides a range of high-quality, future proof measuring machines.

Rather than use a variety of traditional systems, such as coordinate measuring machines (CMMs), laser scanners and profile projectors, the flexible OGP Smart Scopes range uses advanced multi-sensor capabilities that enable a multitude of measuring tasks to be performed. Most importantly, every feature of a component can be precisely measured in a single, rapid multi-sensor routine, then report the achieved results through powerful, yet easy to use software.

OGP UK staff will be demonstrating the capabilities of the Smart Scope® Flash™ systems and the Vici Vision System at the show. SmartScope Flash systems are the ideal choice for automatic general purpose dimensional measurement. For consistent measurement accuracy, the systems use a high quality, 12:1 zoom lens that calibrates itself at every magnification change. An innovative, solid state illumination sources, colour camera, and Measure-X® metrology software make every Flash model a powerful video measuring system. Each model is multisensor capable, supporting touch probe, laser scanner, and micro-probes. All models accommodate parts and fixtures of a variety of sizes and can be customised to suit a wide range of uses.

Also being demonstrated, Vici Vision systems perform fast and easy external dimensional profile measurements on cylindrical parts, such as shafts, valves, screws, and threaded inserts. Full-Scan™ processing captures a complete accurate profile scan of a part in a single pass, allowing tens or even hundreds of dimensions to be measured with in the same fast cycle time. Vici Vision systems benefit from a robust construction and are designed to deliver rapid feedback of part dimensions to the manufacturing process within production environments.

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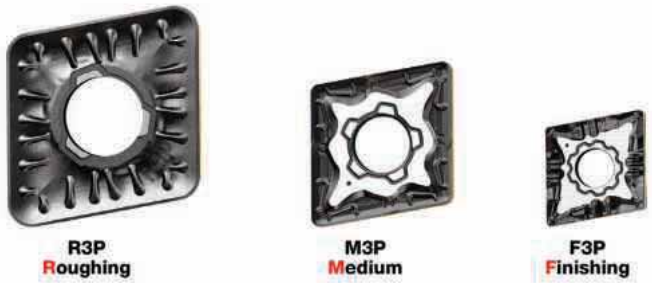
Shaping the future of chips

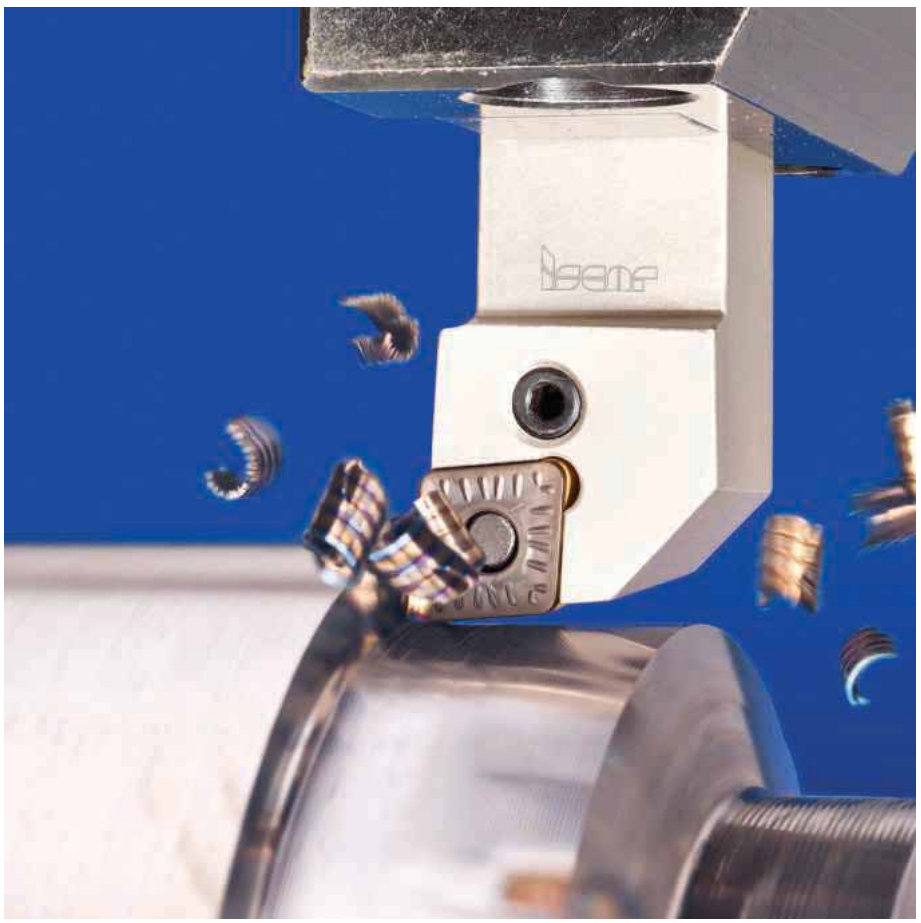
Within the metalworking sector, a major cause of damage to tooling, which can have an adverse effect on component quality, is chip interference. To help overcome these problems, chipformers are now widely used for the purposes of chip control. In short, chipformers are specially designed geometric depressions located after the cutting edges of turning inserts. They channel the machined chips and produce the desired chip shapes that can be effectively controlled. The resulting efficient chip forms consume less power; they result in reduced heat generation and most importantly they are able to quickly evacuate the work zone.

ISCAR's newly designed turning chipbreakers were specially formulated to significantly reduce the size of chips removed from the workpieces during the machining process, which consequently provides efficient chip removal from conveyor systems.

ISCAR's advanced new turning chipbreakers break the chips into smaller pieces preventing chips from tangling around the workpiece during the machining process, enabling improved workpiece surface finish and simplify chip removal from the machine.



The cutting edge work of ISCAR's prolific Research and Development department has enabled the company to remain constantly at the very forefront of cutting tool and insert development. To help ensure continued technical progress within the area of chipformers and other related cutting tool subjects, ISCAR invests approximately 6 percent of the company's total resources into its vitally important R & D work. As an acknowledged pioneer in the field of chipformer design, ISCAR has a long history of developing and introducing products with advanced chipformers that aid the efficient removal of chips from the tool and workpiece area.



Prompted by the global turning industry's evolving needs, the latest range of ISCAR chipformers began as concepts that were assessed and developed by finite element analysis programs. This meticulous evaluation and development process ensured the production of a range of advanced prototypes. ISCAR's R & D department then undertook comprehensive, practical machining trials, replicating a wide range of turning applications across a wide variety of metals. This painstaking process resulted in further refinements. Only after it became clear that the ingenious geometries of the new chipformers represented a major leap forward, were the latest ISCAR products introduced to the market.

Typical of the ISCAR inserts that benefit from the advanced new chipformers is the new generation of the popular ISOTURN line. The recently launched, improved range combines the new SUMO TEC grades with highly efficient chipformers to provide outstanding process reliability.

The nature of the chips produced in the turning process varies, depending on the material being turned, the type of tool being used tool, feeds and speeds being applied and the rate of applied cutting fluid. As the comprehensive new ISCAR ranges includes chipformers capable of satisfying the vast majority of turning tasks and accommodating a wide range of materials, an easy to understand product code has been applied to each range.

ISCAR has introduced three new chipformers: F3P, M3P and R3P for finishing medium and rough turning of steel.

ISCAR provides new chipformer designs,

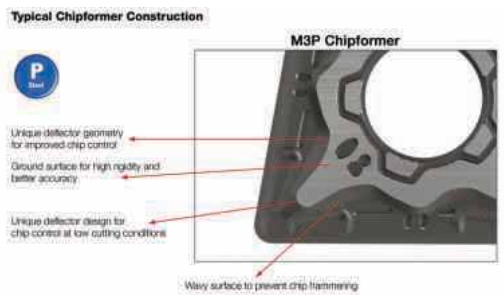
which, together with the most advanced SUMO TEC grades, provide higher productivity, tool life and performance reliability. These new inserts already carry the new more systematic designations in order to facilitate insert selection by the potential customers.

The F3P chipbreaker has positive rake angles for smooth cutting, reduced cutting forces and insert wear, leading to dramatically increased tool life. The machining application area is 0.40 - 2.0 mm D.O.C. and 0.05-0.25 mm/rev. It features a double-sided insert with chipbreaker for finishing steel and a reinforced cutting edge. Another key feature is the positive rake angle which enables smooth cutting and low forces.

The M3P chipbreaker is for medium machining of steel with reinforced cutting edge. It features a positive rake angle to reduce cutting forces and for smooth cutting. This provides a machining application range of 0.5-6 mm D.O.C. and 0.15-0.60 mm/rev.

The R3P chipbreaker is for rough machining of steel with reinforced cutting edge. It has a positive rake angle to reduce cutting forces and for smooth cutting. The machining application range is 4.0-12 mm D.O.C. and 0.4-1.0 mm/rev.

Globally, many companies are currently enjoying the multiple benefits of using ISCAR's advanced inserts featuring highly efficient chipformers. Users are reporting that the problem of chips attaching themselves to cutting tools and components has been totally eliminated and that tools are lasting longer, whilst workpiece quality has been improved.



Now in its 40th year in the UK, Iscar has successfully developed a major presence in the metalworking industry by helping customers to improve their productivity through the application of innovative leading edge technologies and unique cutting tools.

Iscar's impressive purpose built headquarters is conveniently located in the South West outskirts of Birmingham close to the motorway network. From here, all sales and administration functions are coordinated. In the field, a team of over 50 engineers and over 200 distribution outlets provide on the spot support to customers.

Training needs are satisfied at a dedicated state-of-the-art Training and Seminar Centre. Here, a 90 seat auditorium, 450 m^2 showroom and demonstration unit housing four CNC machines is used to provide top quality courses in the application of new cutting tool technologies. Increasing demands for specially tailored tooling are satisfied in-house by a new 800 m^2 integrated Design and Manufacturing Centre.

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Achieve true 90 degree shoulder milling

Excellent cutting and tool life promise big advantages for job shops with WIDIA Victory VSM11 cutter and inserts

As a precision engineer, how would you describe an ideal, go-to tool? Certainly, it should be a high-performance tool that can cover multiple functions such as shoulder milling, slotting, pocket milling, ramping and helical interpolation. All inserts are available in the latest WIDIA VictoryTM grades for a variety of workpiece materials. Naturally it should also have the performance and working life that make it an economical win for present and future production tasks.

This ideal product is the new VSM11 platform from WIDIA.

"VSM11´s versatility and a wide breadth of offering is specifically engineered and optimized to provide higher productivity for job shops," says Adarsh Sowcar, global product manager, indexable milling.

Designed for low horsepower draw and free machining, the VSM11 delivers an effective one-two punch of reduced horsepower at the machine and higher speed and feed rates that get jobs done faster.

VSM11 cutter bodies have an integral chip gash design for excellent chip evacuation along with hardened-steel construction and hardened pocket seats for improved resistance to deformation. They are available in shell, screw on, cylindrical shank, and Weldon shank models with internal air and coolant capability.

VSM11 11-mm insert has an optimised cutting edge and positive rake face that provides a true 90-degree wall while concurrently reducing cutting forces and providing excellent, stepless surface finishes. Six WIDIA VictoryTM grades and five geometries make up a well-rounded portfolio of first-choice recommendations covering multiple material types and machining tasks.There are many things for job shops to like about VSM1. One offering can accomplish 90-degree shoulder milling, full slotting, 3D pocket milling, circular contour milling ID and OD, helical interpolation and ramping into full material. Add to that reduced cutting forces and improved free-cutting action and the result is phenomenal hours of improved tool life. VSM11 are high-performance tools that do more of what job shops need done.

A VSM11 Starter Kit of four cutter bodies and WIDIA Victory grade WP40PM covering roughing to finishing, is available by contacting your WIDIA distributor. For more information, visit **http://www.widia.com**.

WIDIA-brand products and services have defined innovation in the metalcutting industry for more than 80 years, from the world´s first patent for carbide indexable inserts to the development of the world´s first coated grades. The WIDIA brand offers a complete portfolio of precision-engineered products and custom solution services. With thousands of milling, turning, holemaking, and tooling systems products available through a worldwide network of authorised distributor partners, you´ll find everything you need from one single source.

UK Distributor:
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New online shop

A revolution in B2B ecommerce for the metal cutting tooling industry

Cutwel has announced the launch of a new online shop, **www.cutwel.co.uk**, dedicated to cutting tools, workholding measuring tools and machine tool accessories for the metal cutting industry. The website is a result of two years planning, building, testing and implementation and a huge investment from the growing West Yorkshire based tooling specialists.

Cutwel has always been unique in the metal cutting tool industry in the UK. They were the first telesales company in the UK tooling market and have grown to a £10m turnover in 2014 on the back of a telesales team and no external engineers.

"We knew if we wanted to build a successful online tooling shop, we had to be different to stand out from the crowd" says general manager, Adam Gillard. "On that basis we have built the only online shop in the UK that offers a B2C style user experience, with B2B functionally and the full technical resources of a typical engineering tooling website".

In the US, companies like Grainger lead the way with ecommerce, last year turning over $4 billion online, yet in the UK, B2B ecommerce is relatively underdeveloped.

The website has live stock, live pricing, cutting data, dimensions, catalogue pages, videos, linked spare parts, easy navigation and over 5,000 new products. An area for customers to access their account allows users to view and order from history, pay invoices, set up multiple users and download invoices 24 hours a day, seven days a week. "80 percent of our customers are small to medium size business whose directors work seven days a week and out of office hours, we needed to make sure they could cost up jobs, do their accounts and plan their tooling when they wanted, not when we were open". If we could summarise it, we would say it puts everything in one place for the customer, making it easier than ever to deal with us".

Since going live, it has attracted over 25,000 visitors in just 6 weeks. Adam Gillard

says "we have been extremely pleased with the feedback from customers so far and also the stats we have got from google analytics. Our bounce rate is now at just 21 percent which is 50 percent lower than our old site (the percentage of people leaving from the landing page), traffic is up 300 percent and the number of pages visited per visit has doubled".

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Allied Maxcut introduces GEN3SYS® XT Structural Steel

Allied Maxcut (AMEC®) has announced the launch of GEN3SYS® XT Structural Steel (ST), extending the GEN3SYS XT high penetration drilling system and adding to the existing Structural Steel specific products in the versatile T-A® Original range.

The current replaceable insert T-A Structural Steel system includes dedicated inserts and tool holders, which are designed to provide a highly effective solution for the most demanding of applications. The holders feature dedicated body diameters to increase rigidity and a taper shank making them easily adaptable to all major structural steel machines. They also have side and rear coolant for easy adaption.

The inserts are designed with specific grades and geometries for all bolt hole applications. The 'Thin Wall' (TW) geometry is designed for material up to 6 mm thick, providing excellent hole tolerance and quality while allowing for increased speeds and feeds improving productivity. The 'Structural Steel' (SS) inserts have a 150° point angle for materials above 6 mm thick and a notch point design to reduce exit burrs. Both are available with AM200® or TiAlN coating providing excellent heat resistance and tool life and improved performance in oil mist applications.

GEN3SYS XT ST is the latest innovation featuring an industry specific holder design that maximises strength and rigidity and exclusive drill geometry to meet the demands of the structural industry. The holders are available in 3, 5 and 7 x D and

have through shank coolant as standard allowing for higher penetration rates.

ST inserts are manufactured from carbide and are coated in AMEC's proprietary AM300® for superior heat resistance and tool life making them ideal for use in high speed carbide drilling machines. The

dedicated insert grade and geometry cover all bolt hole applications and are also available for regrind making them a cost effective solution.

Rodney Crawford, managing director of Allied Maxcut Engineering Co. Ltd, states: "The Structural Steel industry is very important to us and we aim to continually develop our tooling solutions to increase productivity and provide cost savings for our customers. This commitment is shown the development of our new industry specific solution, the GEN3SYS XT Structural Steel".

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Weight loss helps to speed up F2 Powerboat challenge

WNT (UK)'s sponsorship of Steve Hoult in the Powerboat GP RYA British F2 Championship includes the development of new components for the high performance boat, which is capable of speeds of up to 200 kph. Most recently this involved the machining of new steering arms to control the 230 ps V6 two stroke engine.

The parts were machined at WNT (UK)'s technical centre in Sheffield where WNT's internal technical sales engineer Billy Poore made full use of the latest WNT cutting tool technology to produce a lightweight, yet strong, steering arms from aerospace grade aluminium. The steering arm was machined on the XYZ Machine Tools installed at the technical centre and involved a number of cutting tool strategies covering face milling, profiling, pocket milling, fine finishing and drilling.

"The WNT Technical Centre at Sheffield is here for customer demonstrations and to assist customers achieve the optimum performance from their machines and cutting tools. Manufacturing these parts for the Formula 2 powerboat fits neatly into that and is a perfect way for us to enhance our sponsorship of Steve and enable him to continue to improve his race results," says Tony Pennington, managing director, WNT (UK). "The work gave Billy the opportunity to use the skills and experience that all of our technical sales engineers have with an almost free hand in the machining of the aluminium billet to achieve the ideal weight and strength."

WNT used a variety of indexable and solid carbide cutters on the project, with face milling carried out using its A2790 style 50 mm diameter indexable insert cutters running at 400 m/min at a feedrate of 0.2mm/rev and a depth of cut of 1.0 mm and width of cut of 60 percent of the cutter width. An indexable insert cutter was also used for the rough profiling operations running at 240 m/min, feedrate 0.25 mm, depth of cut 5.0 mm and 100 percent cutter width engaged. The milling of the pockets and finish profiling was completed using WNT's HPC solid carbide 90 degree approach and ball nose end mills, running typically at 230 m/min, with the drilled holes being achieved with the latest WNT WTX solid carbide high performance drills at cutting data of 300 m/min and a feedrate of 0.5 mm/rev. The objective of this exercise was to reduce the overall weight to aid performance, while maintaining the structural integrity of the part.

"The original steering arm weighed 1400 g, by machining from a billet we have achieved a weight of 850 g each, so a total saving of 1100 g for the pair of arms. In addition, we have created a component that is stiffer so its performance has increased. While taking 1100 g from a powerboat weighing 475 kg may not sound much, when combined with other weight saving measures taken by the team a total of 26 kg has been taken from the powerboat, which should add greater speed and improve overall performance when the next season starts," says Billy Poore.

A secondary target for WNT (UK) was that as well as reducing the weight of the steering arms it was important, due to the parts being fully exposed when in place, that they also looked good. The combination of tools and machining strategies ensured that all of the goals set by Steve Hoult and his powerboat team were fully met.

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Tool supply cuts costs, hassle and downtime

Imagine how much more profit your business would make if you could guarantee the cutting tools you needed were always close to hand, and if you didn't have to waste time and money on maintaining excess stocks. Internationally renowned carbide tooling manufacturer Quickgrind is embarking on a UK-wide campaign to show British manufacturers how they can turn these savings into a reality using its award-winning QuickVend system.

QuickVend is one of Quickgrind's latest contributions to helping its customers achieve their lean manufacturing goals. A secure, convenient, point-of-use vending solution, it avoids costly downtime by ensuring that the right tool is always available. At the same time, QuickVend frees up cash that the customer would normally have tied up in tool stocks.

Authorised users get tools from the QuickVend dispenser using individual Smart Cards, similar to using a cashpoint. The intelligent system records how many tools of each kind are taken, and by whom. It can also allocate tools to 'cost centres' such as route cards, work orders and manufacturing cells, and provide detailed usage reports to simplify the management of tool consumption. Businesses only pay for the tools they use and the system automatically analyses rate of use and keeps the dispenser stocked accordingly.

As one of Quickgrind's customers, Dan Govier, tool room manager at Pattern Forme Ltd, confirms: "With QuickVend there are no more time-consuming visits to a manned store, no more hidden 'squirrel stocks' in staff lockers and tool boxes, no more frustrating searches and audits, and no more wasteful collections of unused tools."

Quickgrind managing director Ross Howell concludes: "QuickVend is a result of our 'total solution engineering' approach, in which we put ourselves in our customers' shoes and work out ways to make their lives easier and drive their businesses forward.

"Why incentivise customers to buy in bulk and end up with stocks of tools that they may not need? Instead, we have combined our technological expertise, administrative efficiency and creativity to design a solution for our customers which removes the headache of forecasting and stock management.

"Our products and services reflect the very best in British engineering, quality and innovation, and we see QuickVend as yet another advance that builds on this heritage."

The system, which can also be used for controlled use of consumables and Personal Protective Equipment (PPE), recently won in the SME Innovation category of the Sellafield Ltd Supplier Awards.

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New ‘go to’ grade launched by Pramet

Indexable cutting tool specialist Pramet has unveiled a new PVD milling grade for general applications.

Part of a wide range of products released by Pramet on 1 November 2014, the creation of the M8340 grade is a significant development for its insert programme. The M8340 grade, part of the UP!GRADE family, offers enhanced wear resistance while maintaining consistent performance and process reliability under a variety of operating conditions.

Karel Tiefenbach, indexable milling product manager at Pramet, says: “The M8340 grade is a noteworthy breakthrough and the culmination of two years research and development, as well as substantial investment.

“The combination of the sub-micron grain size of the substrate and the multi-layer PVD coating enhances wear resistance, in particular, preventing the initiation and propagation of thermal cracks. As such, it will become the ‘go to’ grade for most general applications offering increased tool life and production efficiency.”

Designed primarily for milling common steels, stainless steels and under certain conditions cast iron, the new grade, which will replace the existing 8240 grade, is being made available across almost 150 inserts within Pramet’s indexable programme.

Karel adds: “M8340 offers high operational reliability and versatility, a fact underlined by its suitability for both dry and flood-cooled operations.”

To coincide with the introduction of the new grade, Pramet has also announced the launch of a range of universal 90° cutters for productive milling in smaller diameters.

The ADMX07 insert has been created to provide a versatile addition to the AD family,

offering diameters down to 10 mm for a variety of applications and materials. Available in three choices of radius, 0.2, 0.4 and 0.8 mm, the insert features an optimised cutting edge for smoother machining.

A reduced shank version is also available, enabling access to deep pockets and difficult to access areas. The milling cutter body is made from hardened tool steel to promote strength in unstable cutting conditions.

ADMX07 further strengthens the existing ADMX11 and ADMX16 ranges, which also see additions with new radius options as part of Pramet’s second product update of 2014. This latest expansion, which also covers more selections for R (roughing) and FA (aluminium), makes the range of applications covered even more comprehensive.

The ADMX11 insert is one of Pramet’s best-selling products as it features a highly positive geometry for lower machine power and a specially shaped groove for easy and fast chip removal which in turn promotes continuous production.

A versatile solution for steel, stainless steel, cast iron, titanium, nickel, copper and aluminium, ADMX11 offers good quality component surface finish with support from new grades M8340 for steels and stainless steels and M0315 for non-ferrous materials.

Pramet, a product brand within the Dormer Pramet organisation, has also unveiled a line of three new grades to target increased operational reliability, cutting performance and durability in heavy milling applications.

The M5326 grade is for heavy milling of cast iron and features a unique MT-CVD coating which provides high stability to the cutting edge. The M8326 is aimed at heavy milling applications in steels and combines wear resistance and toughness with high durability and reliability.

Meanwhile, the M8346 is suitable for heavy milling of steels and stainless steels. Pramet’s toughest grade available, it offers high operational reliability in the least favourable and most unstable machining conditions.

In addition to the new grades, Pramet has announced a significant enhancement of its LNGX12 shoulder milling inserts. Following high customer demand, the cost-effective range now features new geometries

including F (finishing), R (roughing) and FA (aluminium) and additional radius options from 0.4-3.0 mm.

A versatile tool, the LNGX12 provides process reliability for a wide field of applications encompassing most engineering materials and milling operations, including face milling, shoulder milling, grooving, plunging, helical interpolation, ramping and progressive plunging.

The November launch of products also sees Pramet adding to its range of tools for the rail industry, specifically for the re-turning of wheel-sets. Pramet’s cutting tools are used around the world in the annual production of more than eight million railway wheels and this expansion supports its growing offer for the rail sector.

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CFK range of hand drills for aerospace

Europe's leading expert in precision machine tool technology, MAPAL UK, has recently launched its new range of CFK hand drills, which have been specifically developed for use with lightweight materials such as carbon-fibre reinforced plastics and composites. The new drills guarantee tolerances in the range of IT8 in a single shot, thereby reducing costs for assembly processes by eliminating one work step. The robust design of the drills, which feature PCD-tipped inserts and special diamond coatings, provides long tool life even when working with extremely abrasive materials.

The final assembly of fuselage sections for passenger aircraft frequently involves precision drilling of rivet and bolt holes. Often these holes are in hard-to-reach locations where they cannot be accessed by automated equipment, which means that handheld drilling methods must be used. CFK handheld drills are ideal for these applications as their novel design minimises the risk of delamination and the formation of burrs. These benefits are particularly important in the aerospace industry where dependable machining processes are essential because of the enormously high costs associated with scrapping or reworking components.

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New Technical Distribution partner for Seco

Fenn Tool Ltd, based in Braintree, Essex is delighted to announce its recent appointment as Technical Distribution Partner for Seco Tools (UK).

Fenn Tool will promote, sell and support the full range of high-performance tooling on offer from Seco to precision component manufacturers throughout the UK and Ireland.

Over the past 30 years Fenn Tool has established and developed a reputation as one of the leading independent national cutting tool suppliers by forging strong partnerships with customers and suppliers alike. The company's philosophy of fully understanding customer needs and providing high levels of technical support were crucial factors in Fenn Tool becoming part of Seco's distributor network. Fenn Tool's proven capability to provide effective support to its customers in an ever-increasingly competitive market, is now further enhanced by the new partnership. The comprehensive Seco tooling range and extensive technical support structure will be fully available to end users through Fenn Tool.

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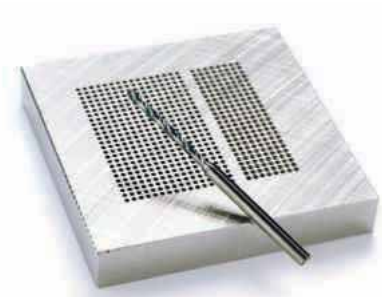
Rainford breaks boundaries for drilling at speed

The new Iwata Tool 'Great Performance' (GP) Drill is probably one of the most understated product names in the industry. Now available from micro and hard machining specialist Rainford Precision, the GP Drill Series can drill at blistering feed rates that exceed 4 m/min on a variety of hard materials.

Claimed to be the benchmark in the next generation of drilling products, the GP Drill can drill anything from mild, carbon, alloy, and stainless steels through to ductile & cast irons, titanium and aluminium alloys to ceramics at astounding speed and feed rates. Thus making the micro line of drills the ideal solution for any machine shop processing small holes.

Manufactured from a microscopic carbide grain substrate, the GP Drill incorporates Iwata Tool's unique ALT coating that is ultra thin. This feature makes it ideal for resisting high levels of heat, wear and oxidation on the micro tools in the GP Series. The new high precision GP Drills are available in diameters from 0.3 to 1 mm in 0.01 increments and from 1 to 3 mm in 0.05 increments, delivering micro precision for all your small holemaking needs. The series is available with either the 5XD or 10XD flute lengths for high speed drilling to a depth of 36 mm.



The unique drill point geometry is what delivers unrelenting performance levels and tool life with the understated GP Drill. Iwata Tool has developed a dual point angle drill with a 140 and 100 degree point. To the naked eye, this makes the drill point look like a ball nosed endmill. However, the reasoning behind the unique geometry development soon becomes apparent. The GP Series has drilled mild steel at a speed of 32,000rpm with a feed rate of 3.2m/min to process a 1 mm diameter by 4 mm deep hole in a lightening quick 0.25 seconds. The result was 1200 holes drilled in under 5 minutes with no pecking cycle.

With such astounding speeds and feeds, a rapid drill burn-out would be expected - no such chance. The GP Drill continued to process another 20,000 holes that totalled over 80 metres of drilling at the 3.2m/min feed rate with no signs of excessive wear.

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Installing success at JRI Medical

When JRI Medical, a specialist in the production of orthopaedic implants and surgical instruments, started to notice a growing complexity of its components and an ever increasing diversity of the types of material being used, it decided to investigate its workholding techniques and methodologies.

Some ten years ago, the Sheffield based manufacturer started to acquire a new plant and this is what led JRI Medical to investigate its component clamping. Down the years, this acquisition trail has included machine tools from Nakamura and Doosan for producing complex parts in average batch sizes from 5 to 15 parts.

To manufacture these complicated parts for the medical and orthopaedic sectors, JRI Medical started to experiment with various types of workholding systems as well as chucks and collet chucks for its turning centres. One consideration that had to be accounted for; was the potential marking of implant grade cobalt chrome, titanium, and stainless steel that was machined at JRI Medical on a daily basis.

The nature of flexibility required and the care extended to the machined parts meant that only Hainbuch could provide the appropriate solution for the medical specialists' workholding demands. For the turning department, Hainbuch supplied its line of quick change chuck systems. With a high level of repeatability, rigidity and high clamping forces, the Hainbuch quick change chucks proved the ideal solution for the repetitive turning of small batches of parts with varied clamping diameters.

The parts turned at JRI Medical tend to range from 5 to 65 mm diameter with the majority of product lines being between 35-65 mm diameters. With Hainbuch's fast change collet chuck system, the operator can change the collet for the relevant diameter component in a matter of seconds. This has delivered significant savings with regard to machine downtime and increased machine utilisation. Furthermore, the fast change system has simplified machine setups for the operator whilst improving the consistency of component quality. This is credit to the remarkable repeatability of the Hainbuch system.

The success of the Hainbuch system in the turning department has now seen JRI Medical introduce the innovative Hainbuch Manok clamping system to the milling department. Commenting upon this introduction, JRI Medical's principle process engineer, Ian Chambers says: "We have enjoyed the Hainbuch technology for years on the lathes and when we recently needed a system for our machining centre, we thought why not see what Hainbuch have to offer. So, we invested in the Manok system. It is very easy to set and very easy to change collets. In addition, it's a pull collet, so the parts are always ensured to be firmly secured within the collet and they won't move, even if we hit them hard with the spindle."

The benefits of the Hainbuch line have been evident for JRI Medical. The company has reduced its setup times and changeovers, resulting in improved machine uptime and productivity. Added to this, the high value components have no markings from the workholding or machining process, which is an aesthetically pleasing factor for the customer. From a quality perspective, the improved rigidity, clamping strength and repeat clamping accuracy has enhanced the component quality and consistency on batch runs.

Ian Chambers concludes: "In all Hainbuch products are quality, they are accurate, easy to set, easy to use and never give us a problem. We are really pleased with the solutions we have invested in."

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New flagship for demanding precision machining

SCHUNK, the competence leader for clamping technology and gripping systems has now extended its program for high performance hydraulic expansion toolholders with the new TENDO AVIATION. After the introduction of the powerful SCHUNK TENDO-E compact universal toolholder, SCHUNK continues this success by focusing on demanding precision applications that occur in the aerospace industry. Safety mechanisms such as anti pull-out locking mechanisms are partly mandatory in this industry.

Combining advantages of two clamping technologies

The TENDO AVIATION combines the strengths of hydraulic expansion technology with the benefits of Weldon toolholders. It convinces customers with its permanently high run-out accuracy, a balancing grade of G 2.5 at 25,000 min-1, perfect vibration damping and a fast tool change using an Allen key. For the use of Weldon shanks, an integrated anti pull-out locking mechanism ensures an orientation of the tools and form-fit clamping, which prevents slipping out of the tool. It even permits tight shape and positional tolerances to be maintained.

TENDO AVIATION allows maximum torque transmission at a consistently high precision and process reliability. Compared with conventional Weldon mountings and heat shrinking toolholders where the run-out accuracy decreases with time, it offers tremendous advantages. The typical synergy of run-out accuracy and vibration damping of the TENDO hydraulic toolholder prevents the cutting edge from wear, extends the tool life and ensures remarkable surface finishes.

Like all the SCHUNK hydraulic expansion toolholders, the TENDO AVIATION does not need any additional expensive peripheral equipment. This price-attractive high-end toolholder is exclusively manufactured at the SCHUNK headquarters in Lauffen, Germany and as a first step it is available for the interfaces HSK-A63 (ø8 mm, 10 mm, 12 mm and 16 mm. Additionally, it is available with a HSK-A100 (ø16 mm, 20 mm and 25 mm. The clamping diameter can be reduced by using intermediate sleeves. In contrast to ER collet chucks or heat shrink mountings, TENDO AVIATION is resistant against dirt and requires low-maintenance. In order to increase the service live of precision mountings and to maintain maximum process stability, the precision mounting can be inspected and optimised.

Collet Chuck Module for cylindrical parts

SCHUNK, the competence leader for clamping technology and gripping systems has now extended its modular system for efficient workpiece clamping with a particularly smart collet chuck module for parts with cylindrical shanks. Lengths of pipes, shafts and other small parts can now be precisely clamped with the SCHUNK VERO-S SEZ within a very short time.

In addition, the new VERO-S SEZ provides optimal accessibility for parts to be comprehensively machined from five sides. The same applies for unstable workpieces with a short shank. Since the system can be quickly made ready for use, it is particularly suitable for machining individual pieces and small series runs such as plungers and ejectors in tool and mold making. To operate this system, the comparably light but robust collet chuck module is put onto an existing SCHUNK VERO-S quick-change module, this is then equipped with a workpiece and then the pull-down jaw system is activated.

This ensures maximum clamping forces and precision, great dimensional stability and an adjustable depth stop to provide great repeat accuracy. Coolant is discharged through an integrated drain. Since the system can be used together with all common ER collet chucks, it provides a maximum degree of flexibility for the end users. The SCHUNK VERO-S SEZ collet chuck modules are available for the SCHUNK VERO-S NSE plus 138-V1 (ER 32-120 and ER 40-120) and the VERO-S NSE mini 90-V1 (ER 25-100) quick-change pallet modules. The clamping diameter ranges from 2 to 20 mm (ER 32-120), 3 to 26 mm (ER 40-120), or 1 to 16 mm (ER 25-100). The maximum clamping depth is 96 mm for the VERO-S SEZ or 85 mm for the VERO-S SEZ mini.

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DE-STA-CO introduces complete line of strong versatile enclosed power clamps

The new 82M-3E Series of enclosed pneumatic power clamps from DE-STA-CO provides automotive and sheetmetal processing customers with superior holding power in a versatile, user-friendly and low-maintenance package.

This full line of lightweight aluminum power clamps includes four sizes: 40, 50, 63 and 80 mm. The 82M-3E Series is well suited for a number of applications, including manual and automated fixture welding, positioning and locating.

All of DE-STA-CO's 82M-3E Series power clamps feature infinite arm opening adjustment with the industry's greatest opening angle range: from 0 to 135 degrees. This provides system integrators with maximum flexibility. The angle is easily adjusted in just seconds from behind the clamp. Not only does this patent-pending design feature save time, it also means 82M-3E power clamps require less space, allowing fixtures in which they're installed to be lighter and more ergonomic than those equipped with other clamps. The 82M-3E's sensors never need adjustment, even when the opening angle is changed, providing

additional time savings. Each of the 82M-3E Series clamps is available with a patent-pending hand lever on the right or left side for applications requiring manual loading. The levers feature the distinctive DE-STA-CO red handle and are adjustable for improved ergonomics.

To provide long life with minimal maintenance, each 82M-3E Series clamp features an enclosed body, sealed needle bearings and a completely enclosed sensor to prevent the intrusion of dust or debris. Repairs are simplified by the sensor cartridge's two-part design, which makes it possible to replace only the damaged component instead of the entire cartridge.

"Developing a new family of power clamps gave us the opportunity to step back and look at the product from the customer's perspective," explains Peter Schauss, DE-STA-CO global product director for power clamps. "As a result, we've come up with a best-in-class series of clamps that is flexible and easy for integrators to set up, and that will perform for the end user customer over millions of cycles with minimal maintenance."

The 82M-3E Series is available worldwide. It conforms to NAAMS and Euro mounting standards.

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Roemheld has a hold on 5-axis clamping

Carbide inserts have been recently introduced to the Hilma MC 100 vice range of vices and jaws from Roemheld which enable end users to hold concentric components on just 3 mm in a vice.

Roemheld was one of the forerunners in the development of 5-axis vices with the capability to grip safely on just 3 mm of material. As a result, Roemheld has been supplying an extensive range of such machine vices to end users across all market sectors, for many years.

Terry O'Neill, joint managing director of Roemheld, says: "Some end users were wary at first, they just could not believe that gripping on 3 mm was safe (or even possible). However, more and more are now adopting this technology as it offers substantial raw material cost savings. We have seen savings of up to 20 percent. It also helps eliminate distortion when machining off the waste."

Roemheld has developed a unique design of vice body and jaw configuration that allows for high metal removal while clamping on 3 mm of material. 5-axis machining requires accuracy and reliability of workholding and the performance of Roemheld's Hilma 5-axis clamping range meets all these demands. The component is held high off the machine table, keeping the spindle tooling to standard lengths and rigid clamping is possible due to high clamping forces. The Roemheld vices also offer repeatable accuracy for locating and positioning of component. End users can programme the machine using either a fixed jaw and or, if preferred, a concentric vice, where both jaws move in to grip the component on the centreline.

Roemheld has downloadable CAD models available for all vices and jaws, making programming easier and helping to avoid any potential costly collision paths whilst machining.

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'.

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When speed matters

Scanning the Air Race World Champion

Established and officially launched in 2003, the Red Bull Air Race is globally renowned. By taking the existing model of Formula One Racing, and combining it with extreme aerial challenges, the sport has grown into one of the most exhilarating and fastest motorsport races on the planet. The ability to fly at speeds in excess of 250 mph at low altitude, and to deal with extreme and punishing race conditions, has seen some of the best pilots from all over the world involved in flying some of the most aerodynamically modified racing machines known to man. Changes to the World Series aircraft specifications for the 2014 season has seen individual planes changed drastically, due to standardisation in the area of aircraft propulsion. This change to the sport has levelled the playing field, as well as improved the safety conditions during races.

This has led each individual team to analyse their current plane's performance in considerably more engineering detail than was previously done in the past. When the main propulsion of every plane is standardised, the only areas left to adjust are the aerodynamics of the plane body itself. This specifically relates to how the airflow affects the plane and also the surplus drag coefficient that is applied to parts that aren't aerodynamically enhanced. The same engineering strategy can also be directly applied to the angle of attack on the race track; adjusting the entry speeds and pulls between pylons during a race can result in times that are in some cases milliseconds apart. All of these factors, along with the natural ability of each pilot, make for an extremely challenging environment.

The result of all of the testing and modifications saw the Breitling Racing Team, with British pilot Nigel Lamb, clinch the World Championship with a dramatic victory on the last day of racing in October 2014. Nigel has been working on his MXS aircraft since 2010 and has invested in a multitude of technologies to assist the design and air flow developments across the surface of the plane. Some of these changes are clearly identifiable in the construction of the wing tips, which were specifically designed to reduce the aircraft's induced drag without detriment to other performance criteria. Apart from the exterior modifications, advanced analytical software has also been used in an attempt to correctly calculate the right approach for every single gate, and gain as many split seconds as the Breitling Racing Team can find.

So why 3D scanning?

As with most high performance manufacturers, the complete CAD assembly of the aircraft structure is strictly confidential and kept under lock and key. So how does this affect modifications to a plane?

In terms of a high speed sport, the surface profiles and shape are generally designed to deal with optimal air flow across the body, and as such the direct replication of the machine can be difficult to comprehend when the critical information isn't available.

In the aerospace industry, these complex shapes can't be measured with traditional methods and would conventionally take several weeks to capture in a standard working environment, and then more time would be required to digitally create the

model in a CAD package. This all assumes that the measurements were correct in the first place .

With this in mind, and due to the need to make some radical changes to his existing MXS, Nigel Lamb approached Measurement Solutions for this year's race season for assistance in digitising his current plane as accurately as possible. One of the UK's leading companies in the fields of 3D measurement and scanning, many prominent organisations have put their faith in Measurement Solutions to deliver class leading services and products, including BMW Group, Jaguar Land Rover, BAE Systems, Honda, EasyJet and many more.

The requirement from the Breitling Racing Team was to provide Nigel with a full and accurate 3D scan of the complete aerodynamic shape of the aircraft, such that the shape of the aircraft could be truly represented in flow analysis testing. As is often the case with motorsport, the data required needed to be of sub-millimetre accuracy, yet it must be acquired and completed with minimal interference in the run up to the season start. With the variety of surface changes, air intake upgrades and optimum race course approach calculations to be researched, this was the most efficient course to take, as with most motorsports, time is precious.

When considering the need for scanning, users usually need to contemplate three main factors: accuracy, resolution and the ideal scanning technology for the application. In the case of portable scanning systems, there is no better alternative than

the World's foremost developers of laser scanning solutions, Creaform3D. As a UK partner for multiple inspection technologies, Measurement Solutions has access to a multitude of systems. For the application at hand, accuracy over a large volume was the most critical aspect to consider. This could not be achieved with traditional scanning systems such as portable arms, as the accuracy over large

areas is simply not possible. Similarly, laser tracking was not an option as line of sight is extremely limited around the aircraft, requiring dozens of station moves (which all adds up to time and inaccuracy). As the time constraints were extremely tight considering the measurement demands, the Measurement Solutions team needed a solution that was quick and easy, yet 100 percent reliable.

As a result, the MetraSCAN3D was used to scan the whole aircraft, as this was seen to be the most suitable tool for the job due to its high accuracy and ability to measure over large areas. With the patented TRUaccuracy technology built into the system, full system accuracy is assured in all measurement conditions, unlike conventional measuring equipment that requires stable environments and experienced users. This proved invaluable while scanning an aircraft in a cold hangar late into the evening.

The MetraSCAN3D is a hand-held laser scanner, capable of acquiring large surfaces extremely quickly to an accuracy of less than 0.1 mm. The scanner is tracked by a dual-camera system, which uses conventional photogrammetry techniques to continuously locate the position of the scanner relative to the aircraft at all times. A high accuracy dynamic referencing system also means the measured part can move during measurement, making the system ideal for applications such as press-shops and areas where vibration will affect traditional measuring systems. This same system provides the ability to quickly and easily extend the measuring volume or to re-position the tracking device without the need for complicated and time-consuming leap-frog or bundle adjustment manoeuvres, as with portable arms and laser trackers. This all adds up to a complete guarantee of accuracy, irrespective of the environmental conditions.

To further enhance this accuracy, the system was used in conjunction with a Creaform MaxSHOT photogrammetry system to provide an accurate reference map across the whole surface of the plane. This ultimately minimised the time that would normally be required to manually register the scan data sets together. This also enabled areas to be re-scanned as required, or for parts to be removed so that "hidden surfaces" could also be scanned in great detail.

Within 24 hours, application engineers from Measurement Solutions had managed to 3D scan the entire aircraft to within 1 mm accuracy. This acquisition was completed and post processed, before leaving site, into an industry standard STL mesh, ready for direct import into airflow analysis and CAD software. Of course, the speed of scanning does not quite match up to the final speed of Nigel's World Championship winning aircraft, but Measurement Solutions is extremely proud to know that the accurate scan data produced many months ago may well have contributed to Britain's Nigel Lamb enjoying World Championship glory for the first time.

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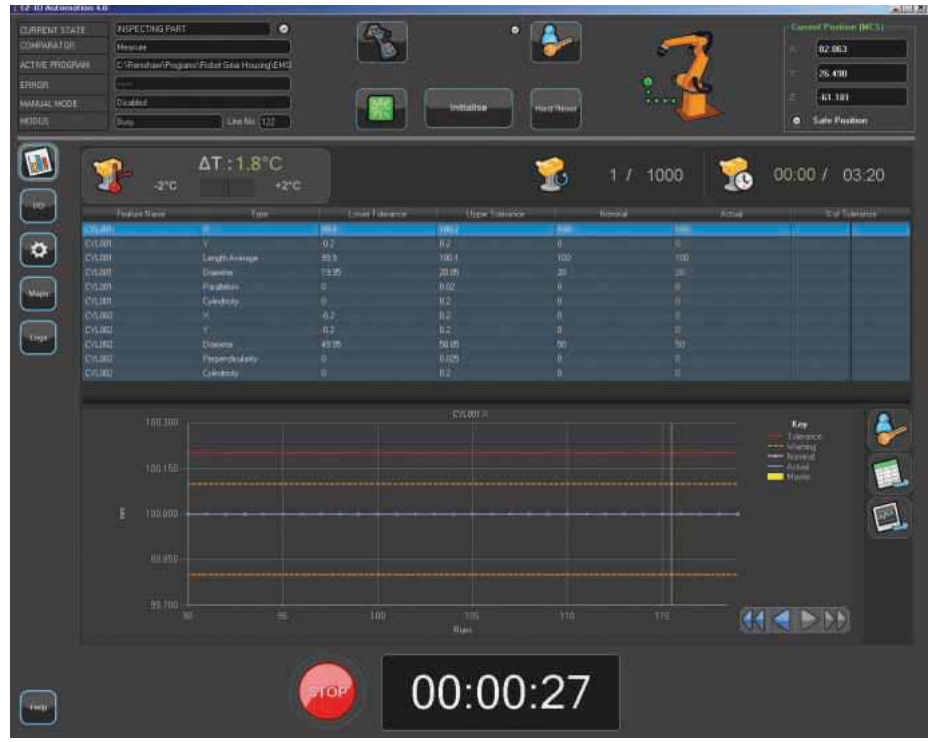
Flexible gauging just got faster

Shop floor process control with Equator™ now includes NEW ultra-fast touch trigger probing, easy-to-use feature-based offsetting and updated EZ-IO automation software.

Manufacturers using the Renishaw Equator flexible gauge now have even more options for inspecting parts right where they are being made, on the shop floor, in the toughest of conditions. With the new TP20 touch trigger probe kit, Feature Compare and updated EZ-IO software, flexible gauging is now ultra-fast, simpler to setup and easier to automate.

Equator gauges are already used by hundreds of manufacturers worldwide for high speed flexible gauging, as manually loaded systems or in fully automated cells. Equator provides flexibility for engineers to re-program for design changes and for shop-floor operators to switch between different parts in seconds, using repeatable removable fixture plates and easy-to-use Organiser software.

Manufacturers recognise the benefits of Equator's combination of flexibility, fast scanning, low purchase price, and low cost of ownership (Equator requires no regular re-calibration). These benefits, when combined with the system's unique ability to compensate for the effects of challenging environmental conditions, make it the gauge of choice in any industry.



Short cycle times for all applications

The ultra-fast TP20 touch trigger probe can now be combined on Equator with the high speed scanning of the SP25 scanning probe.

TP20 can be used for fast capture of discrete point data, with the stiff lightweight structure of Equator allowing very short cycle times and high repeatability on simple touch point measurements. The touch trigger kit includes robust industry-standard TP20 modules and a new range of extension bars and joints.

The system can also automatically switch to the SP25 scanning module using the integrated changing rack to provide any combination of measurement routines. SP25 allows continuous scanning of features at scan speeds of up to 200 mm/s, to gather high volumes of data when, for example, information on the form of features is required.

Equator with TP20 is an ideal alternative for in-line gauging tasks which might have used custom hard gauging systems with single-point air gauges or LVDTs. The advantage of flexible gauging with Equator is that part geometry can be computed simply by taking additional data points, rather than the need for a complex custom gauge.

Feature Compare

Equator uses the principle of mastering to cope with changes in temperature on the shop floor. Now the process of calibrating the master part is made very easy with the new Feature Compare function.

Master parts do not need to be expensive or custom made; users can simply take a production part and measure it. The master part could be measured in a number of ways, including on a calibrated coordinate measuring machine (CMM) in a temperature-controlled environment. This measurement establishes the variation of the master part from CAD or drawing nominals.

With Feature Compare the user can simply take the master part measurement data and enter the compensation values for each feature's size, position or orientation. The simple and unique Feature Compare interface has been designed for effortless data input.

EZ-IO automation software with Process Monitor

EZ-IO software makes it very easy for integrators setting up automated manufacturing cells to configure communications between Equator systems and the cell controller. This allows intelligent functions such as automatic re-mastering: using a robot or shuttle system to load the master part when Equator detects that the shop floor temperature has changed.

The Process Monitor display is now built into EZ-IO. Process Monitor provides a chart showing the history of feature measurements, and an easy graphical view of proportion of tolerance for each feature. It also enables management of the mastering process according to temperature, time or number of parts measured. Being able to view the inspection data history of a part is an invaluable function for controlling manufacturing processes.

Turnkey installations

Since the launch of the Equator gauging system in 2011 many customers have also taken advantage of the turnkey programming service offered by Renishaw and its partners. Using MODUS™ software, experienced engineers work closely with a customer to generate programs that allow a

wide range of parts to be gauged on Equator systems.

Global support
Reflecting the international nature of many modern manufacturing organisations, Equator customers have been able to take advantage of Renishaw's extensive network of Equator support engineers. Projects initiated in one country or region can be easily transferred and locally supported in multiple locations. Renishaw now has over 70 regional support offices and multiple approved partners, covering every industrialised area of the world.

Equator principle of operation
Equator is a radical alternative to traditional dedicated gauging, filling a gap in the market never before addressed. The patented low-cost design, unique in construction and method of operation, is capable of high-speed comparative gauging for inspection of high-volume manufactured parts. Equator is a lightweight, fast and highly repeatable gauge that operators can use with 'push-button' simplicity. Equator can switch between parts in seconds, perfect for flexible manufacturing processes or accepting parts from multiple machines. Remastering immediately compensates for any change in the thermal conditions of a shop-floor environment, and is as swift as measuring a production part. Equator can be used in factories with wide temperature variation. Simply re-master and the system is 're-zeroed', ready for repeatable comparison to the master.

Traceability to calibrated CMMs
Effectively, the calibrated absolute accuracy of the CMM or other devices (often located in remote temperature controlled rooms to ensure accuracy) can be 'extended' onto the shop floor to provide calibrated traceability to Equator measurements. With the calibration data for the master part loaded into the Equator software, measurements made on the Equator system can be referred back to the CAD or drawing nominals.

Equator programs can be created or modified using Renishaw's proven and comprehensive MODUS programming software. Shop-floor staff then simply select and run programs using the intuitive Organiser operator front-end software, requiring little or no training. The Organiser software can report gauging results either as a simple 'pass' or 'fail' message, as a full inspection report, or through the Process Monitor window.

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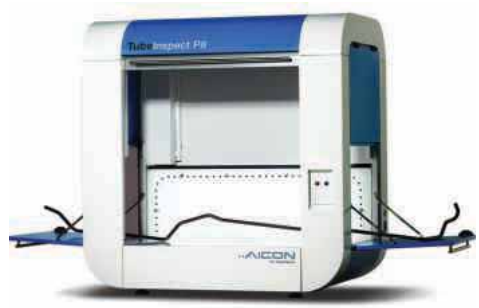
Prized metrology

The new benchmark in tube and wire measurement wins gold



An expert jury at the CONTROL-TECH in Poland awarded the TubeInspect optical 3D tube and wire measurement system with the Gold Medal of the Kielce Trade Fairs. This represents a great success after a long development phase for the new benchmark in tube and wire measurement.

One of the first companies to start working with the TubeInspect P8 is IBP Instalfittings. IBP is an established international manufacturer and supplier of components and fittings to OEM business. They produce copper tubes for different industries. Already now, the customer makes a successful summary: faster measurements, more accuracy, and better quality.

TubeInspect P8 was first introduced at the Tube & Wire exhibition in Düsseldorf/ Germany in April 2014. It is the first model in the new generation TubeInspect P series.

The TubeInspect P-series is a consistent further development of the TubeInspect technology and sets new standards in tube measurement. The system is equipped with latest camera and LED illumination technology as well as a highly precise and long-term stable glass reference. It is suitable for tubes and wires from 1 mm up to 125 mm diameter and up to 1 m in length. The lateral doors allow for an overlapping repositioning section by section, which makes it possible to measure components with an end-to-end-length of up to 2 m.

Due to its compact size and the various convenient functions, TubeInspect P8 can easily be transported to different sites for measuring.

TubeInspect P8 fulfills highest requirements regarding accuracy and measurement speed. Combined with the software platform BendingStudio, the system offers various application-oriented functionalities. With the compact state-of-the-art measuring system, AICON provides a pricewise convincing alternative to slower handheld measuring systems. AICON 3D Systems is one of the world's leading providers of optical camera-based 3D measuring systems. The company, founded in 1990, develops and distributes systems for the business areas of inspection and testing including car safety and tube inspection. Since the acquisition of Breuckmann GmbH in August 2012, the product range also includes scanners for 3D measurement of complex geometries.

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Xtrac tracks true with Mitutoyo's contracing technology

When you operate at the cutting edge of your field with customers absolutely relying on you to come through with solutions, on time and every time, issues that affect production quality in engineering or manufacturing must be stamped on without hesitation. So when Xtrac, the Thatcham-based leader in high-performance transmission technology for the automotive, aeronautical, marine and defence sectors encountered an unusual problem while assembling a new type of gearbox, the company went into immediate action. Rigorous investigation traced the cause of the issue to a mis-formed feature that was impossible to detect using the conventional measuring methods available in-house.

A four-strong squad from manufacturing, design, and quality formed a cross-functional team to investigate the problem and evaluate both measuring and manufacturing solutions. "Once we confirmed we had a measurement capability issue we contacted our local Mitutoyo office, and they were able to offer an immediate solution that solved our problem," says Neil Warwick, Xtrac inspection manager, "and as we already had a good working relationship with Mitutoyo there was no need to look any further for a supplier."

Initially, Xtrac chose a Formtracer (model SV-C3100) as, apart from providing a quick, accurate and easy-to-use measuring solution for this specific contour measurement application, this dual-purpose machine can also handle surface finish measuring tasks as well. The crucial advantage this class of machine provides, as compared to the general purpose Coordinate Measuring Machine, is the much smaller stylus-tip radius (25 µm) that is used for tracing the surface of a component. This means that very fine detail can be measured much more accurately.

A new way of measuring for Xtrac

Ease of use, combined with a small, benchtop-friendly footprint, means that the machine is conveniently accessible on-demand to anyone who needs to check intricate component features. This is especially useful when checking very tight tolerances on angles, lengths and radii, for which the contracing principle is ideal. This aspect was an important consideration in the buying decision as it fitted the company's philosophy of giving production staff as much freedom as possible to maintain and improve quality before product reaches the inspection stage.

The technique and technology were entirely new to Xtrac and caused quite a shift in approach to this type of measurement application. "Contracing has transformed the way we evaluate many different components," Neil says. "Measurements that took an hour before can now be done in just a few minutes with a much higher degree of accuracy. We also used to have to take impressions of many internal features, and measure these using conventional methods. Contracing of internal features has eliminated much of this practice."

Not just a 'one application' solution

Mitutoyo made equipment in the Andover showroom available for evaluating contracting as a solution. As this was not a case of replacing existing equipment a smooth changeover was not an option, but Mitutoyo sales staff, whilst awaiting delivery of the new machine from Japan, were able to put Xtrac in touch with a local company that was kind enough to allow the use of equivalent equipment in the interim.
As is often the case in such circumstances, apart from the main and obvious benefit of providing measurement capability the company didn't previously have, many other uses were found for the new machine where it provided either accuracy or efficiency gains over existing methods.

Contracing for all!

Once the Formtracer was in place the demand for its use became so great that eventually Xtrac acquired more machines, all straight contractor's this time (CV-3100/3200 Series) as Neil concludes, "We bought one machine to solve a specific problem, and we now have four machines scattered around the manufacturing plant that are in almost constant use measuring a wide variety of parts. The ease of use means that with just a small amount of training our manufacturing staff are able to make their own measurements with the minimum of disruption to production."

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Next generation laser trackers increase portability and ease-of-use

Hexagon Metrology launches a new range of all-in-one high-speed laser trackers

Leading metrology solutions developer Hexagon Metrology has unveiled the Leica Absolute Tracker AT960, a walk-around coordinate measuring machine that fits in a single flight case. The latest model in the Leica Absolute Tracker range, the AT960 answers customer demand for a genuinely portable laser tracker with high-speed dynamics and six degrees of freedom (6DoF) capabilities.

With a complete range of Leica laser tracker accessories built into the device, the AT960 measures to a Leica T-Probe, Leica T-Scan or reflector straight out of the box. Hot-swap battery function and IP54 certification for use in even the toughest workshop conditions mean the AT960 really can be taken anywhere.

The company has also launched the Leica Absolute Tracker AT930 system. With all the features and functionality of the AT960 without the 6DoF compatibility, the AT930 offers a totally transportable 3D solution with unprecedented dynamic capabilities and real-time operation.

"The new AT960 and AT930 laser trackers feature the latest electronics and optical technologies. Leveraging the recent developments of PowerLock, absolute interferometry and optical miniaturisation we are able to release next generation portable products based on proven features," says Duncan Redgewell, general manager, Leica metrology products. "The AT960 and AT930 replace the hugely-successful AT901 and T-Cam products and complement the basic Leica Absolute Tracker AT402. We now offer the most complete and modern range of laser trackers available on the market, giving our customers the opportunity to choose the right equipment for their specific needs."

The Leica Absolute Tracker AT960 and the Leica Absolute Tracker AT930 are available to order immediately through your local Hexagon Metrology commercial centre or distribution partner.

Hexagon Metrology offers a comprehensive range of products and services for all industrial metrology

applications in sectors such as automotive, aerospace, energy and medical. Customers are supported with actionable measurement information along the complete life cycle of a product, from development and design to production, assembly and final inspection.

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Latest OTT pull force gauge is ideal for continuous monitoring

Large continuous machining operations and transfer lines, experienced in automotive or high volume component manufacture, are ever more dependent on machine reliability and data feedback to maintain performance and precision.

Conditions at the spindle are all important and a new pull force gauge and read out system from Gewefa UK now offers the ability to monitor conditions, particularly relating to wear or degeneration.

OTT-Jakob, represented by Gewefa in the UK, is a renowned manufacturer of pull force gauges. Their Power Check model is a staple component with most machine tool maintenance engineers.

The latest variant of the Power Check is however specifically designed to be left in the machine carousel to provide a point of continuous monitoring. Furthermore, the connection to the hand held data collector is wireless so an operator can monitor data collected at the machine from up to eight different machine locations. Over 8,000 readings can be stored on the handset with these easily downloaded to a USB for transfer to a lap top or network computer system.

Typically such readings could include machine id, date, time, precise pull force details and the adjusted range. This ensures the operator has a full picture of the individual machine pull force status at his fingertips.

Pull back degeneration at the spindle affects cutting performance and accuracy and if undetected for a period, can result in more extensive bearing damage in the machine tool itself.

By dedicating a location in the carousel to the new Power Check Magazine, it can be programmed through the handset to monitor the spindle on a continuous cycle. Weekly, daily, even hourly readings are safely recorded via the wireless connection from outside the machining area.

The OTT Power Check Magazine is a universal unit suitable for all types of spindle systems, regardless of manufacturer. The new permanent design features a shorter shank location and it is powered by a kinetic

connection, activated through the carousel so no power supply or battery is required.

The unit can be used for all machine tool spindles with adaptors available for HSK, DIN, ANSI, and MAS BT. Two variants are available, one with a pull force of 10-75kN or an alternative unit for smaller machines with a pull force of 2-15kN.

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From Apollo 11 to latest aero-engine components

Electrochemical marking is recognised as the only method of marking metal without distortion, which is why it is still the only option for many applications including some critical aero-engine components, surgical implants and thin walled section parts.

The process was used in the early days to mark some components on the Apollo 11 lunar module and also some components on Concorde. Back in the late sixties, electrochemical marking systems had gained universal acceptance within the aircraft industry for the marking of engine components, undercarriage and airframe parts, particularly due to the fact that the marking process had no measureable detrimental effect on the mechanical properties of the material.

Early success was achieved through specific expertise in the chemical and photographic fields, which was particularly relevant where high quality electrolyte solutions and stencils were central to high quality marking. This is still true today, although the process has been developed significantly since then delivering fast, clean, high quality precision marking with long term proven reliability.

Electrochemical marking is permanent because it is created by etching out metal and then plating on the etched surface a stable compound of the base metal. In most cases this is an oxide, giving a high contrast black mark on many metals. A below surface etch mark can also be achieved or a combination of the two. Marks are produced extremely quickly between 0.25 and 4 secs for most metals. Deep etching takes a little longer but marks can be deep enough to be read through paint. The mark can only be removed by vigorous abrasion but the mark will remain until one ten-thousandth of the metal has been removed. The process is environmentally friendly as it uses water based electrolytes and neutralisers . The marking unit regulates the etching power and most units in UMS's ME3000 range are fitted with a timer to help give consistency of mark regardless of the operator's experience.

Within the automotive industry, electrochemical marking is still accepted as the only accurate and economic method of producing strain grid patterns on metal blanks for the study of their forming properties for strain grid analysis. Here long life photographic stencils are used which carry a pattern of small circles or dots, and are arranged in either a close packed or interlocking pattern. The electrochemical mark leaves a pattern on the surface of the metal. The deformation of the circles into ellipses or the spread of the dots during sheet metal forming operations reproduces the surface strains created. This gives an immediate visual indication of the direction of the metal flow and the magnitude of the strains. Still today many large car manufacturers and universities are using UMS's ME96 Strain Grid Unit for this type of application.

The nineties saw the introduction of two dimensional datamatrix barcoding for marking jet engine components within aerospace. "Cradle to grave" traceability was needed and UMS developed a software-driven system which enabled the creation of datamatrix codes to meet this type of application.

The software was fully featured and contained a great deal of control and security. Once the datamatrix code and/or human readable text had been created, it was output to a 300 dpi quality thermal printer utilising a brand new type of instant stencil paper. The software downloaded the correct marking settings to the marking unit to eliminate the possibility of operator error. This revolutionised electrochemical marking and with ongoing refinement of stencil creation, packages are now available suited to very sophisticated applications as well as every day general engineering ones. Complete self contained systems allow the user to create their own stencil and apply the mark to the component all at one small workstation area.

More recently the ME3000PC automated system has been introduced, which takes automated electrochemical marking to a new level. The stencil is created and automatically fed to the marking destination so the operator only has to place the component and press a button to create a mark. Now for the first time, this allows automated sequential numbering or batch marking in both human readable text and 2D datamatrix and QR code formats.

Universal Marking Systems Ltd manufactures and supply, globally, a range of electrochemical marking equipment and accessories under the Metaletch brand name.

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Technifor introduces new laser marking machine

High contrast, high speed marking
The new compact, high-performance fibre laser solution, for direct part marking, has the ability to integrate into a production line and mark twice as fast as the 30 w version. It is fitted with a powerful fibre source, giving long operating life together with consistent marking quality, minimised integration costs and virtually maintenance free running.

Deeper laser marking solution
The true strength of this state-of-the-art laser is in its depth. Thanks to its 50 w of power, the TF450 beam vaporises material, creating a deep permanent mark. This offers new opportunities for deeper engraving, especially in harder materials such as tool steels. Ideal for marking which must remain legible after applying a coat of paint or surface treatment, this new laser is designed for applications working with steel, stainless steel, aluminium, copper and brass.

From high contrast marking to micro-machining
The system can even cut steel sheets up to 3 mm thick. For these new applications, users can rely on the power of LaserStyle™ software, to meet their complex design requirements.

This new laser enables Technifor to provide a solution for micro-precision machining and allows the brand, historically known for its expertise and know-how in micro-percussion, to strengthen its position in laser marking and machining.

The Gravotech Group is the worldwide leader in the design, manufacture and distribution of innovative solutions for engraving, marking and artistic modelling.

Based in the Lyon region of France, Gravotech has over 900 employees in over 100 countries including its subsidiary in Leamington Spa.

The Group boasts a vast international network: 29 subsidiaries and 300 distributors work alongside its 60,000 international customers, assisting them with their local or global issues.

Built around four brands: Type 3, Propen, Technifor and Gravograph, the Group covers four key technologies - laser, mechanical engraving, scribing and micropercussion), supplemented by a wide range of consumables and software solutions.

The new TF450 laser is available now. For more information, contact:

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Electrox launches next generation laser marking software

Laser marking specialist Electrox has launched its latest generation graphical design and laser programming software, ScribaEvo, a specialist solution developed by Electrox's in-house experts that offers the most intuitive and user-friendly laser marker interface available.

Electrox will be showing ScribaEvo at Autosport at the Birmingham NEC from 8-9 January 2015 for the first time and will also be exhibiting at Southern Manufacturing in Farnborough from 10-12 February 2015.

ScribaEvo has been designed and developed by Electrox's experienced in-house team to deliver a powerful, user-friendly laser marking software package that gives an overall better user experience beyond the capabilities of any off the shelf product.

The PC-based software is suitable for individual component marking to large automated batch production. It is backwards-compatible with all G2 Electrox lasers, meaning that existing as well as new customers can benefit from an upgrade.

The rationale behind ScribaEvo was to streamline Electrox's software to improve user-friendliness.

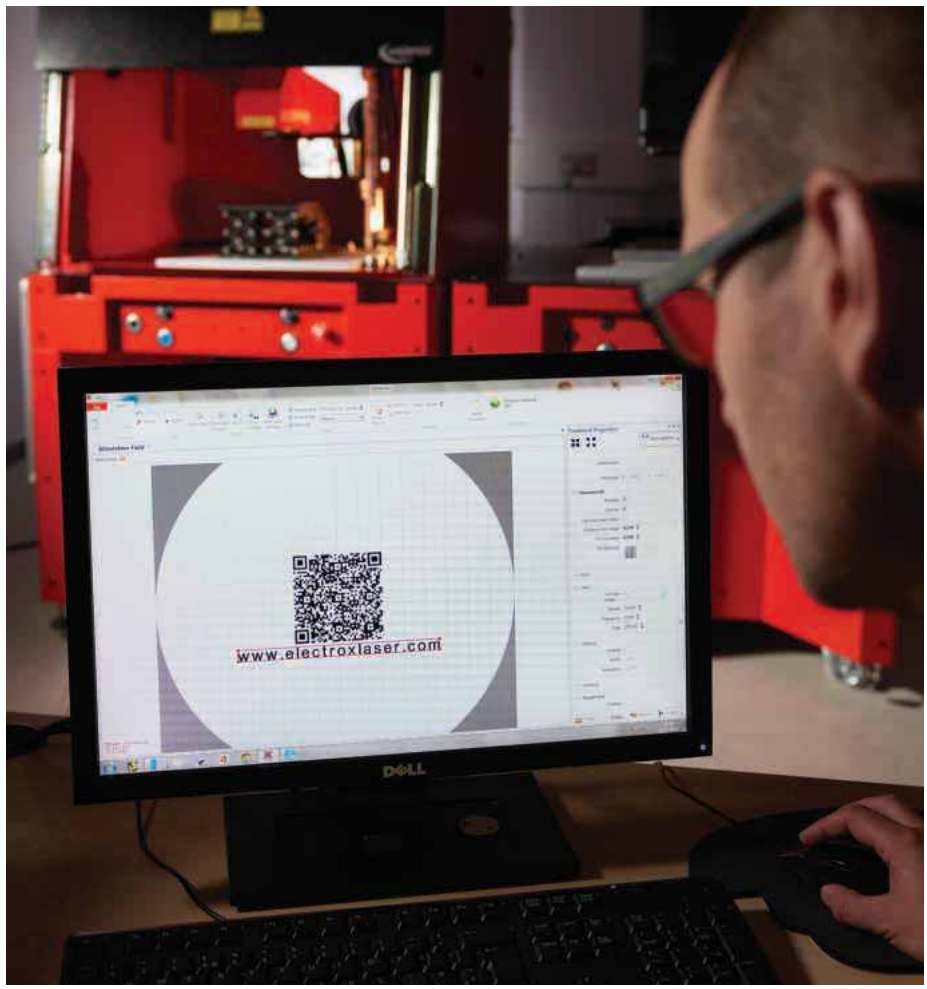
"In recent years, our software upgrades have added new functionality to the existing foundation, which of course can complicate things, especially for novice users," explains Peter Ramsden, sales director of Electrox.

"With ScribaEvo, we have built a brand new software platform, while retaining all of the advances and improvements that our experience has taught us. The simplified structure makes it easier and faster to use," he adds.

A key feature is the laser parameter library, a pre-saved index of popular laser configurations.

"Changes to a laser's power, frequency or speed have a tremendous impact on the results and there is always an optimum setting depending on the substrate, colour or application," explains Peter Ramsden. "By offering a library, users can select the most appropriate option for their requirements.

"Nonetheless, ScribaEvo offers an exceptional degree of functionality.



"Whether tweaking one of our library designs or setting something up from scratch, users can create the exact parameters they need."

The software is developed on the Microsoft .net platform for intuitive navigation and is compatible with Windows 7 or 8. For speed and ease of design, ScribaEvo is installed with automated graphics tools, which identify the gaps in images and utilises the best fill algorithms to optimise marking speed. Similarly, a unique serialisation feature uses the stored memory to guarantee incremental and decremental number creation.

The marking experience itself benefits from a larger memory and faster download speeds, meaning that multiple or complex designs can be downloaded to the laser faster than ever.

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.

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Enhanced laser marker software

Improved graphic file editing and enhanced production line operation

Miyachi America Corporation, a leading manufacturer of welding, marking, cutting and micro machining equipment and systems, has announced a major update of its LMF series laser marker software and control card, resulting in improved graphic file editing (GFE) and enhanced functionality for production line operation.

The updated software and control card allows for the control of up to 4 axes of motion without the need for a dedicated PC, saving space and simplifying integration into production lines. In addition, the new card features an improved ability to mark QR codes and TrueType fonts.

The improved GFE enables users to size, shape and edit graphic files such as .dxf and .dwg within the marking software's graphical user interface, giving users the freedom to adjust node locations, close paths and more directly modify graphic files without adding third-party software.

These new features were introduced as standard in all new Miyachi America LMF series markers from September 2014. Existing markers may be upgraded by Miyachi America service personnel, in the field. Contact Miyachi America to schedule a field service visit.

Miyachi America Corporation is a leading manufacturer of equipment and systems for resistance welding, laser welding, laser marking, laser cutting, and hot bar reflow soldering and bonding. The company provides products to a wide range of markets, including the medical device, battery, electric vehicle, and solar industries, as well as the global electronics, automotive, and general industrial markets. Miyachi America is an ISO9001 certified company. Miyachi America company headquarters are located in Monrovia, California.

For more information about the company's products and services, contact:

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Productive and flexible marking

The new TruMark 5050 by TRUMPF offers, thanks to variable pulse duration and higher mean output, maximum productivity and flexibility when marking a wide variety of materials.

TRUMPF has expanded its highly successful TruMark Series 5000 by adding the new TruMark 5050, a marking unit with a fiber laser at its core. With its adjustable pulse length of between seven and 500 nanoseconds, the new marking laser is flexible in its use and can work diverse materials with great results. Its high beam quality of M2 less than 1.6 and its high mean power make the TruMark 5050 perfect for high-quality engravings and, at the same time, can work the finest of structures. Its short pulses permit very closely defined energy input into the workpiece. In this way the laser is very accurate in operation, producing the highest quality parts. With longer pulse durations, the productivity of the marking laser rises since more energy is injected into the part. The laser is made even more productive with the optional tandem head system. Here the laser's power is applied to two scanners, so that two pieces can be worked at the same time.

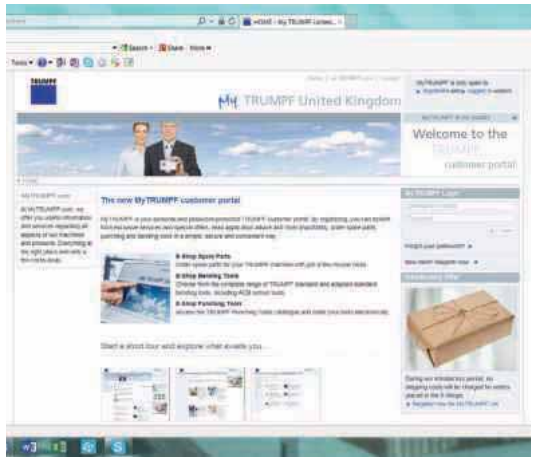
Broad range of applications

With its infrared light, at 1,062 nanometers, and adjustable pulse duration from 7 to 500 nanoseconds, the TruMark 5050 can apply identification to a broad spectrum of diverse materials. It can economically process all the conventional metals including mild steel, stainless steel, aluminum and copper and turns out high-quality results especially for deep engraving. The favorable combination of high mean power, differing pulse shapes and variable pulse duration also makes the TruMark 5050 attractive for micro-processing, like cutting films and foils. Typical application areas are also precision machining and medical technology, the sheet metal machining industry, and the electronics and automotive industries.

Thanks to a compact processing head and easily handled plus-and-produce connections, the TruMark 5050 can be integrated into new and existing manufacturing systems without any difficulty. Another benefit: Certified to comply with safety class IP 54, the marking laser is protected against dust and splashed water and is ideally prepared for the most varied manufacturing conditions in the industrial environment.

New customised portal

To enhance customer support TRUMPF has introduced MyTRUMPF. This is a portal with integrated e-shops and a variety of other helpful tools and features, including a comprehensive download area. It is easy to use and tailor-made, so customers can view their individual machine base and software products then download all machine-related documentation.



Appropriate training courses, available for operators and programmers, can be accessed via direct links embedded on each machine page. And the site also provides the facility for downloading TruTops software service packs.

Spare parts and punch & press brake tooling can be ordered online, 24 hours a day and seven days a week, via MyTRUMPF. It also allows customers to benefit from special online deals. Exploded drawings assist the ordering process and availability of parts and individual prices are clearly displayed to ensure the customer has full transparency throughout the process.

The news and events feature keeps users up to date on the world of TRUMPF and there is also a comprehensive 'tips and tricks' section that provides access to technical articles and videos, user reports from all over the world and downloadable customer magazines and books.

MyTRUMPF is free and every user receives their own personal login and password; there is no restriction on the number of users per company. To register go to **www.uk.mytrumpf.com**

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Mobile marking solution to identify workpieces

Until a few years ago, the identification of the workpieces at the company Metallbau Sonnleitner e.U. in Böheimkirchen, Austria was not a big issue.

The growing metal construction company manufactures several kinds of steel, stainless steel and aluminum constructions. So far technicians and engineers were able to assign the workpiece to the corresponding drawing after years. If there was still a danger of confusion the workpiece was marked with primitive methods.

On the basis of standards and regulations, for example the recent EN 1090 construction standard, total quality management is required and with this the demand for part marking.

The determining factor for the purchase of the FlyMarker® PRO 100 percent portable marking system was finally the development of the new product of the company Metallbau Sonnleitner e.U., the automatic tool management system.

Single hand tools can be administered electronically and it is clearly visible which tool is allocated to which employee. Due to safety and cost aspects, a laser marking system was not an option and when comparing dot peen marking systems, the FlyMarker PRO battery-operated hand-held marking system was the clear favourite.

The mobile dot peen marking system is very compact and no cables hamper or endanger the work. The software of the FlyMarker PRO can be operated intuitively and with the optional column frame it is possible to convert the hand-held marking system quickly into a table marking system.

In the meantime the marking system is established and used for several tasks. According to the manufacturer, an important factor is that the marking is still visible after several post processes, for example with a zinc coating.

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The FlyMarker PRO hand-held marking system in action marking a welding seam

Prestigious win for Pryor

Pryor has announced that it was awarded the prestigious award for Design and Innovation at the national Manufacturer of the Year awards ceremony held at the ICC, Birmingham in November.

The ceremony, described as a true reflection of the diversity, innovation and expertise in UK manufacturing, was attended by a record-breaking number of over 1000 people from nearly every sub-sector of UK manufacturing. The award was presented to Pryor for having a culture and commitment to innovation that has "transformed the company". As critics have acclaimed; "That's a good result for an SME in a tough field!" The number of entries to the awards was record-breaking this year, up by 25 percent on last year, making it more competitive than ever.

Other award winners include: Xtrac, Vaillant Group, Ginsters, Rayovac MicroPower Division of Spectrum Brands (UK), Grainger and Worrall, Philips AVENT, ENER-G Combined Power, Selex ES, Burts Potato Chips, Campbell Ferguson of Spirit AeroSystems, and Rebecca Davies of MBDA UK.

Pryor Marking Technology was founded in Sheffield in 1849. The company provides a single source for the manufacture and design of innovative marking, identification and traceability solutions.

For over 165 years, Pryor Marking Technology has provided UK manufacturing with the technology to reliably identify its products. In that time, Pryor has gone from making hand-cut punches depicting cutler's trademarks to robotic production line systems for imprinting machine-readable coded data on the most highly specified aerospace turbine blades.

The company has succeeded by constantly innovating, pushing its own boundaries and, throughout its history, looking for the next development to supersede its current technology. Pryor was also recently awarded the prestigious Made in Sheffield award for innovation.

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Powerful laser marking solutions

FOBA presents an innovative, closed-loop marking process which includes product validation, marking, optical character verification (OCV) and code-reading. During September's AMB show, in Stuttgart, FOBA showcased its unique vision technology, high-precise marking laser and Laser class 1 workstations for efficient part marking:

The M-Series laser marking workstations handle demanding marking tasks and are capable of marking the new UDI (Unique Device Identifier) and 1D/2D codes used to identify devices. M2000 processes small parts in trays or pallets, as well as larger batches of parts precisely and efficiently. The compact M1000 is designed for the high-quality laser marking of small parts, medium sized components and work pieces and batches.

Integrated in the workstations, the vision alignment system IMP (Intelligent Mark Positioning) supports production efficiency by a unique vision-based marking process: the closed-loop process includes pre-mark verification, laser marking and post-mark validation. The IMP system is used for reading the content of 2D codes and validating laser marks through Optical Character Verification (OCV, checks if every marked character matches the expected content).

FOBA's flexible, efficient laser marking systems solve demanding challenges in product and parts marking. The reliability of the marking process and the constant high quality of marks increase productivity. The compact system design is predestined for flexible and fast integration into production lines. Permanent, reliably legible marks and Code-Reading function enable easy traceability. FOBA Laser Marking and Engraving are among the leaders in manufacturing and supplying precision laser systems for marking and engraving. FOBA marking lasers mark a variety of materials and parts not least in the key markets of automotive and medical but also in electronics, plastics, safety and ID. FOBA laser workstations for marking and engraving are especially applied in the fields of automotive part production and medical

device marking as well as in tool, metal and mold making, plastics processing and jewelry and coinage. Worldwide sales and service branches service the most important markets.

In September 2009, FOBA become part of ALLTEC GmbH. FOBA is now part of ALLTEC as a sales channel for laser part marking and engraving

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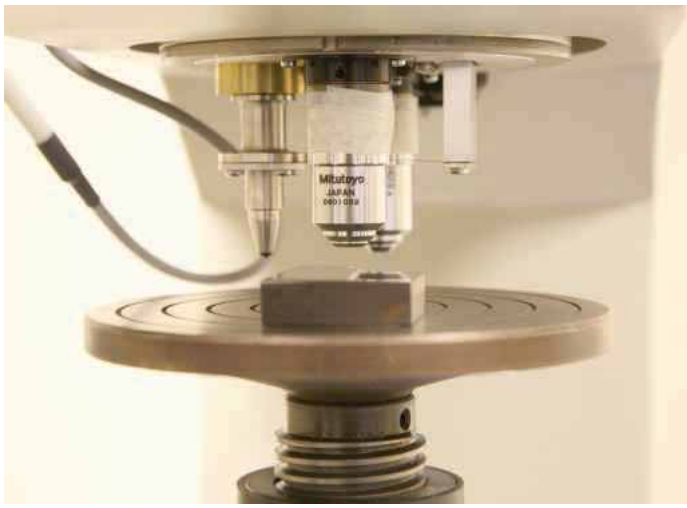
Achieving quality standard for CE marked structural parts

Nottingham-based CNC profiling specialist, Lasershape says it has achieved a new quality standard for the laser cutting of CE Marked material required by the construction industry.

The CE marking of fabricated structural steelwork became mandatory on 1st July 2014. This represents a major development for engineers and steelwork specialists, and demands careful attention to the new obligations imposed. In addition, those involved in the sector, such as Lasershape, have had to implement a new quality standard to comply with the Construction Products



Regulation (CPR), which is the legal basis for the new regime.

"Before the 1st July there was no legal requirement involving fabricated structural steelwork, but as we are involved extensively in the construction sector, producing parts and assemblies that include staircases and ballustrades, we have completed a rigorous process that ensures we are compliant," says company director Mike Ward.

Under the CPR, new legal obligations have been placed on manufacturers of construction products used within the EU to CE Mark their products where they are covered by either a harmonised standard or European Technical Assessment (ETA). This applies not only to constituent products (such as steel beams and bolts) but also to fabricated elements and systems made from CE Marked products. In the UK, penalties for non-compliance include suspension notices, prohibition notices, notices to warn, and application for forfeiture. For certain offences the penalties may include a fine, imprisonment or both.

"We only buy material that is CE Marked from approved mills, and we now have a BSI-audited, controlled process in place for the thermal cutting of CE Marked plate," says Mike Ward.

Lasershape can measure its laser cutting operations and see how process heat affects the material, always working within a predetermined range.

"This has been audited by BSI managers and we now have a controlled process in place for the laser profiling of CE marked steel," says Mike Ward. "Any buyers who need full traceability of their steelwork can now buy from Lasershape safe in the knowledge that we can certify legally to having a controlled measure in place."

Lasershape now has what is known as a Factory Production Control Certificate complete with CPR number that covers up to and including Execution Class 4.

Lasershape's waterjet cutting machines give us the ability to cut almost any material. The company uses multi head machines to increase process speed and currently possess one of the largest waterjet cutting machines in the UK, a 9 m x 4 m machine with four waterjet cutting heads.

Water is pressurised at 200 times that of a jet wash and is then forced through a hole the size of a pin head. The waterjet produced can cut steel up to 150 mm thick. This efficient and highly effective method of cutting is suitable for a wide range of applications, and Lasershape have provided this service to clients from across a range of industries and sectors who are looking for the finest results quickly and efficiently.

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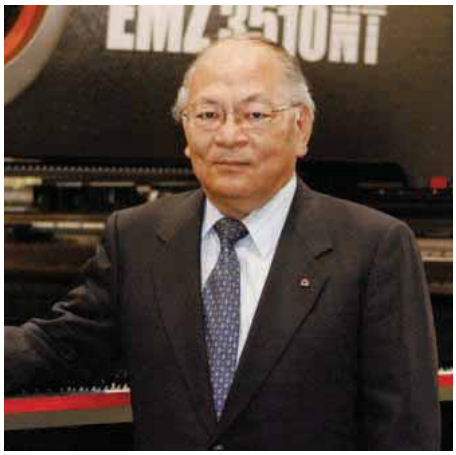
AMADA unveils its new laser technology at EuroBLECH

AMADA president and CEO, Mitsuo Okamoto introduced exclusive the new laser ExC (ExaC) technology at EuroBLECH, implementing the new sheet metal direct diode laser (DDL) cutting process.



Processing demonstrations were performed with a machine equipped with the new ExC 2kW oscillator. "ExC" is a brand designation of AMADA's next generation laser.

Until now, DDL technology has been applied to such processes as welding or hardening because of the compactness and high oscillation power efficiency of the oscillator in which excitation source diodes are used directly for laser processing.

However, this technology could not be used in cutting processes because of lower beam quality and less focus ability under high power output conditions.

Given this context, and based on its in-depth knowledge of sheet metal processing, AMADA reconsidered DDL technology from a new point of view in collaboration with the US-based company JDSU, and succeeded in developing a 2 kW oscillator with the level of performance needed for laser cutting.

The two main features of this new technology are that through optimised energy efficiency the oscillation efficiency has reached 40 percent and that it is the first time in the world that a manufacturer of processing machinery has succeeded in developing the DDL cutting. Other characteristics to be stressed are the structure of the oscillator itself, and the adoption of fibre cables from the oscillator to the machine body, thanks to which the number of optical parts has been reduced. This results in less need for maintenance operations such as part replacement.

In addition to the excellent cost/performance advantages of the new technology, this more compact oscillator can be considered as a true eco-friendly technology as it allows a 60 percent space saving compared to previous models. Through this newly developed ExC technology, AMADA offers a full lineup of laser machines: fibre lasers, CO2 lasers and DDL (ExC), from which customers can select the products most appropriate to fit their processing needs.

In recent years, remarkable advances and diversification has been seen in the field of laser technology, though not restricted to fibre and CO2 lasers. Coming from all sorts of professional sectors and business activities, new competitors have entered the field of next generation laser development and competition has become stronger on a global scale. In check their running costs and power consumption when considering such equipment as industry goods.

AMADA's uncompromising commitment in research for advanced laser technology, together with the development of both machines and exclusive oscillators, led to the development of laser processing technologies highly optimised to sheet metal processing. It strives to offer the most appropriate solutions needed by its customers. In the future AMADA plans on commercialising oscillators independently, in addition to DDLs (ExCs) and fibre lasers.

Features of ExC as compared to AMADA's CO2 lasers

1. Higher energy efficiency through AMADA's exclusive technology, resulting in 40 percent oscillation efficiency

2. Higher cutting speeds – 30 percent faster cutting speed with mild steel sheets 1.0 mm thick and 75 percent faster cutting speed with aluminum sheets 1.0 mm thick

3. Higher cost performance - the structure of the oscillator itself and the adoption of fibre cables from the oscillator to the machine reduce the number of optical parts and the maintenance operations necessary until now, resulting in cost reduction, with approximately 50 percent power cost reduction during processing and approximately 80 percent power cost reduction during stand-by

4. Improved cutting quality - surface roughness (for identical mild steel sheets 1.0 mm thick) 15 µm with ExC compared with 1.152 µm with CO2

5. Compact space - mechatronical integration implemented through oscillator miniaturisation (more than half mass reduction) ExC = 1000 × 600 × 930 mm CO2 = 2000 × 750 × 1100 mm

6. 60 percent oscillator volume reduction - AMADA is the first machine tool manufacturer to have developed an oscillator that makes DDL cutting process possible

Founded in 1999 in the United States, JDSU has laboratories located in San José, and operates in the fields of manufacture and commercialisation of optical communication networks, measurement instrument, displays, OA devices, optical thin film multilayer coatings, optical components, high power semiconductor lasers, and industrial laser devices.

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New online service revolutionises laser cutting

Bystronic has introduced ByOptimizer, a new online service that creates maximally optimised cutting plans for laser cutting. The service is one-of-a-kind on the market and promises: cut parts as accurate and cost-effective as never before

4 kW, 6 kW and more

Sheet processing lasers are constantly getting stronger and faster, but that doesn't guarantee profitable cutting jobs. The actual profit margin for cutting sheet metal parts is determined much earlier, for example with optimal parts grouping in a cutting plan. In this way, users can save on raw materials and obtain faster cutting times. Up until now, this required a great deal of time and know-how.

Swiss machine manufacturer Bystronic has now rounded out its selection of laser cutting systems with a revolutionary innovation: ByOptimizer. The exclusive online service creates optimised cutting plans in the blink of an eye. Lengthy cutting plan creation becomes unnecessary.

ByOptimizer is based on new Cluster technology by the Swedish company Tomologic. This technology automatically groups cut parts on a sheet. So tightly, in fact, that no more raw material is wasted on gaps between parts. The tightly placed parts are then cut out of the sheet with short cutting paths.

More parts per sheet

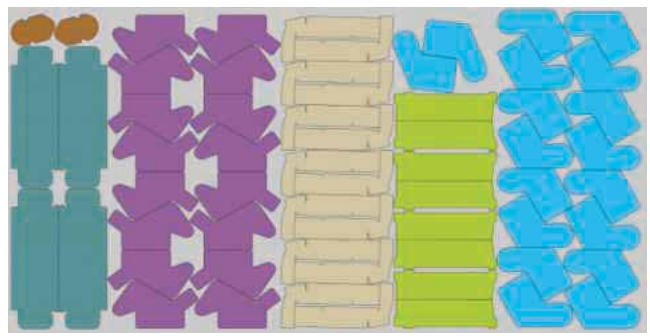
In comparison to traditional cutting plans, ByOptimizer achieves a distinct 15 percent advantage on a standard 2 x 1 metre sheet. For example, the 60 parts traditionally requiring two sheets can be obtained on just one, thanks to ByOptimizer grouping and efficient material use. This saves materials as well as setup time, since placing a second sheet is no longer necessary.

Tighter grouping of parts enables more efficient cutting paths across the sheet. Shorter laser paths result in faster cutting job processing overall. In comparison to traditional cutting plans, the time savings for one standard sheet of 60 parts is approximately 19 percent, depending on complexity and material thickness.

Integrated know-how

Bystronic promises more than improved raw material usage and shorter cutting times. ByOptimizer even takes cutting process safety into account.

"With traditional cutting plans, excessive use of raw materials often leads to risky cutting manoeuvres and even occasional cutting errors," explains product manager Marcel Mosimann.



With ByOptimizer, users don't need to worry about such risks. The technology contains cumulative know-how. ByOptimizer takes the key components into account: cut parts geometry, raw material state, and laser power. A database with over 300 parameters provides comprehensive information for ideal cutting processes and material performance.

Quick implementation

Implementation is easy for users because ByOptimizer is an online service.

"Implementation is easy for our customers, without high investment costs for new hardware or software," assures Marcel Mosimann.

All a user needs to start using the service is a PC with an internet connection, BySoft 7, and a Bystronic laser cutting system.

Bystronic, in cooperation with Tomologic, provides the necessary processing power for creating optimised cutting plans. ByOptimizer sends a query to the Tomologic server centre for each cutting job, where the incoming job specifications are processed and sent back to ByOptimizer via a secure network. In just minutes, an optimised cutting plan is ready to go.

For more information visit **byoptimizer-new.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.

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The dynamic way to saw

The new HBE Dynamic series from saw specialist BEHRINGER delivers impressive performance, user convenience and economy

"Increased performance, coupled with reduced energy consumption, a smaller footprint and improved occupational safety without compromising handling simplicity, were only part of the product brief for the development team working on this new machine", recalls CEO Christian Behringer.

Available in four model types: 261, 321, 411 and 511 with corresponding cutting ranges, the new HBE Dynamic series covers a broad application spectrum for the steel trade, for mechanical engineering, toolmaking and for high-end metalworking shops.

With an outstanding tool life of over 400 sawing cuts, in 200 mm dia. 42CrMo4 material, for instance, the new HBE261A Dynamic performs well above standard, taking even the most stringent demands easily in its stride.

Playing a key role in this achievement are proven Behringer features such as further improved cutting pressure control, which consistently helps prevent tool overload.

A stable saw frame made of vibration-damped grey cast iron and double-sided bearings for the band wheels take care of minimised noise and optimum cutting precision. Tests have revealed increases in tool life of up to 30 per cent, with a visible improvement to the quality of cut surfaces. The inclined position of the band wheels also helps protect the bandsaw blades as a result of reduced flexural stress.

Rising energy prices mean that companies are having to rethink their existing processes and develop innovative technological solutions to achieve higher output with lower energy input.

"With the new HBE Dynamic series, we are proving that energy efficiency and high-performance hydraulics are not a contradiction in terms", explains Christian Behringer.

With the use of state-of-the-art frequency-controlled drive systems from renowned manufacturers and application-oriented gear speeds, a simple kW motor output specification is no longer any guarantee of high cutting output. In the HBE 261A Dynamic, for instance, a saw drive with 2.6 kW permits high machine throughput coupled with a low energy requirement, adding up to efficient production.

The new full machine enclosure not only ensures compliance with the latest CE guidelines, it also addresses growing demands for user convenience, occupational safety and environmental protection. The work environment stays clean, noise is minimised, whilst a large observation window affords an excellent view of the machine. The easy-maintenance concept allows simple saw blade changeover and easy access for maintenance and cleaning work.

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The perfect solution for short runs

Prima Power delivers high power laser and punch shear combination machines at EuroBLECH

Automotive parts manufacturers need highly specialised equipment for trimming formed sheet metal components while meeting all their specific requirements.

With the new Laser Next machine, which had its world premiere at EuroBLECH, Prima Power has drawn on its 35 years of experience in this field. Collaborating with customers and partners operating in the automotive industry resulted in the design of a fast, compact and highly efficient 3D laser for high volume automotive production applications.

Over the last ten years, Prima Power has been steadily increasing the performance of its 3D laser machines for automotive applications. The Laser Next represents a step change in this development cycle. Productivity on a typical benchmark component (B-pillar) has been raised by 25 percent. This means that four Laser Next machines can produce the same as five of the previous model.

The technology in the Laser Next gives it the best dynamic performance of any 3D laser on the market with 208 m/minute trajectory speed and 2.1 g acceleration. Some of the advances in machine design include direct drive motors and transducers for the main axes and focusing head, and synthetic granite machine frame with optimised geometric design.

The footprint for the Laser Next is also significantly smaller and the layout of the machine has been designed to allow for stand-alone and multi–machine configurations. The compact design makes it possible to site four Laser Next machines in the same area as would be occupied by three of the previous model. In addition, there is no need for special foundations for the machines. For multi-machine configurations up to three Laser Next machines can be sited next to one another all connected to the same magnetic scrap conveyer, delivering astonishing productivity per square metre.

To achieve improved Overall Equipment Efficiency (OEE), Prima Power has used its know-how from hundreds of installations dedicated to the 24/7 manufacture of stamped high strength steel and of hydroformed automotive components. By examining every detail of the process, the design of the Laser Next has been optimised to maximise machine uptime, reduce non-productive times, minimise and simplify maintenance and consider the need for specialised resources dedicated to these activities.

LaserNext laser head in action

The Laser Next has a work volume of 3,050 x 1,530 x 612 mm and is equipped with three kW or four kW high brilliance fibre laser. Its compact focusing head, fully sealed for best protection, features direct drive motors, double protection SIPS, fully metallic sensor, and Focal Position Control.

The high-precision and dynamic turntable with servo motor and absolute encoder is designed to ensure the highest reliability, safety and ergonomics. Thanks to reduced blocking times, the distance between table and light curtains is very short, allowing faster and more comfortable loading/unloading operations in full safety.

By combining punching and shearing in one machine Prima Power has set new standards in productivity and efficiency with its new Shear Brilliance cell, launched at EuroBLECH. It features linear drives, composite construction and servo-electric punching and shearing. The concept saves material with higher material utilisation, high quality parts with no nibble marks, automatic loading and fast sheet positioning with table lengths up to 4,070 mm and 3,100 mm punching-shearing without repositioning.

Its little brother the SGe5 Combi punch and right angle shear provides similar capabilities in a smaller sized machine. Utilising servo electric motors which result in very low power consumption and low noise levels of 73.3 dB compared with 84 dB for a hydraulic machine, the objective is to operate without human intervention from the blank to the automated sorting of the finished parts into up to 12 different bins.

Ideal for short runs of components, which is becoming an increasingly common demand from customers, the SGe5 enables the mixing of different components on one sheet. For largely rectangular parts the result can be zero or virtually zero material wastage as the right angle shearing can split parts in a single stroke without the need for a skeleton. Furthermore, the shearing operation results in a very high quality edge without any nibbling marks.

With the option for part sorting and picking, up to 12 different component types are sorted along conveyors, which deliver them one by one into separate bins, while larger parts are recovered on a table at the end of the conveyors.

Overall the SGe5 is 5.7 x 7.4 m, occupying a footprint of slightly more than 42 m^2. It can work with blanks up to 1250 x 2500 mm and it has a 20 station thick turret including rotating and multi-tool stations. The punching force is 17 tons with a 23 ton option and it can achieve 750 hits/minute on 1mm thick material.

Advantages of the technology include not needing precut blanks, thus saving an operation and the associated handling, a smaller footprint than two separate machines saving valuable workshop space, automated sorting of components as they come off the machine again minimising handling, and increased material utilisation and better edge quality through edge to edge nesting and shearing of straight profiles up to 1250 mm long. Overall, the SGe5 can produce savings of around 60 percent in processing times through automation and elimination of handling. Furthermore, installation is 40 percent quicker due to the modularity of the design, which makes implementation of the equipment quicker and easier.

The automation possible with the SGe5 can be extended with Prima Power sheet handling and stacking technology which makes it possible to automatically load sheets of material to the SGe5 further increasing its efficiency. For a complete FMS line, the SGe5 can be part of an automated process which adds on buffer storage and a servo-electric panel bender to produce a versatile and flexible system that can respond to rapidly changing production requirements. To manage the system, Prima Power offers its Tulus® Power Processing manufacturing execution software which can communicate with the customer's ERP system and report in real time from the shop floor on the progress of parts around the workshop and the actual performance of the machines as it happens.

LaserNext front view

The Prima Power Group offers a complete range of equipment for the sheet metal industry. With over 30 years of experience, it has over 10,000 machines installed in more than 70 countries. It has manufacturing facilities in Italy, Finland, the USA and China and it offers sales and service through a worldwide network of Group companies and distributors.

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Efficient storage and process of sheet, tube and profiles

KASTO exhibited products from its sawing and storage portfolio at EuroBLECH

Its new bandsawing machine range, KASTOwin, was presented, consisting of five automatic bandsaw models which cover a cutting range from 330 to 1,060 mm. These machine tools are suitable for universal use and for all types of material and represent a flexible solution for multiple applications. In particular, the very high performance-to-price ratio is said to bring a new level of value-for-money to the sector. It has been achieved using a modular design and many common components across the range.

KASTOpractical A2 workshop saw was also on display. This model has been designed for efficient cutting and mitring of profile, tube and solid bar. A two-speed drive unit delivering 35 m/min or 70 m/min and a fully hydraulic feed are just two features. The versatile, infinitely variable mitre selection without length correction makes the saw simple and effective to use, assisted by the SmartControl with easy to understand symbols as well as information on cutting condition or errors. A large range of accessories allows users to order a bespoke KASTOpractical A2 suited to their needs.

Automated storage was also represented at the show in the shape of the KASTOuniline. It is a highly effective, longitudinal design and is best suited to long and narrow spaces, up to 25 metres in height, as with most KASTO storage products. It can be erected fully internally, internally but through the roof as a 'chimney' installation, or externally, fully clad against the elements. It is particularly well suited to all sheet format pallets from small to large and extra-large as well as for cassettes holding tube and profile and cubic products.

Within the manufacturing sector, KASTOuniline can be connected directly to processing machinery like laser cutting machines and press brakes. The exhibition model demonstrated integrated robotic sorting from the cut nesting program for unattended production in a typical laser processing company.

Fully automatic KASTOpractical A2 pivot-type bandsaw

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Completely newly-designed punching and shearing system

A world leader in steel cutting and processing machinery, Kaltenbach has announced the launch of two new machine models for the punching and shearing of angle and flat materials.

The much anticipated additions to the Kaltenbach range, the KPS-A 167 and KPS-A 207, replace their previous, highly proven KPS models and have been completely redesigned from the ground up.

Drawing upon Kaltenbachs' extensive process knowledge, the new machines are built alongside the other models in the Kaltenbach range of sawing, drilling, plate processing, coping and robot welding machines at the company's advanced manufacturing headquarters in Lörrach, Germany.

Both machines are designed primarily for processing angle materials up to 160 mm x 160 mm x 25 mm and 200 mm x 200 mm x 25 mm respectively. Optionally, flat materials up to 170 mm wide can also be processed.

The machines feature two punching units for use with six Punch and Die sets which are designed for swift and efficient tooling change via a 'slide-in' combined tool cassette design.

The new KPS machines also include shear units with multi-use knives, permitting the shear knife to be rotated by 90 degrees as it wears for use up to four times before replacement. This increases the life of the overall tool whilst keeping the tooling cost to a minimum. Automatic punch power and cut clearance reduction are standard, along with a host of other features for optimal efficiency and process performance.

Strong and precise punching unit and individually positionable punching tools for highest quality standards

Automatic measurement of the legs or material thickness minimises operator errors and achieves optimal tool positioning

Kaltenbach's design requirements demanded exacting standards for high strength, rigidity and process speed, with low maintenance and assured Kaltenbach reliability. Whilst occupying a compact footprint, the new KPS machines weigh in at an impressive 10 tons with an extremely robust design and powerful 30 kW hydraulic units. Both can be complemented by new materials handling systems with automatic material loading at the infeed, gripper based length measurement and good piece/scrap sorting at the outfeed with the ability to discharge pieces into user defined sorting positions.

Programming and control are via Kaltenbach's own 'Multiline' Software which additionally now has a redesigned user interface for the new machines. The operator friendly system runs from a powerful, colour multi-touch control screen, permitting operation and line side programming with part optimisation and DSTV+ file format compatibility. As it is PC-based, the system can be connected directly to the users network for offline programming and remote support via Kaltenbachs' international Technical Service Centres.

No Kaltenbach machine would be complete without a comprehensive array of Kaltenbach Service and Spares Support options which include full tooling and spares packages along with a choice of maintenance programmes, from annual servicing though to advanced PPM schemes and Pre-Failure analysis, ensuring that machines deliver the highest levels of up-time, even in the most demanding of production environments.

The new KPS models are ideally suited for production in industries such as electrical pylon manufacture, steel fabrication and steel service centres. The machines are already being delivered to customers debuted at international trade shows.

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Thermal Dynamics presents innovative solutions

Thermal Dynamics presented a broad offering of plasma cutting solutions at EuroBLECH:

StepUPTM Modular Power Technology allows you to grow as your business grows.

Ultra-Cut® XT High Precision automation plasma systems bring intelligence to the table, offering superior quality, higher productivity and lower cutting costs. They are designed to grow as your business grows by utilising modular upgrade kits that allow a 100A system to become a 200, 300 or even 400A system. The capabilities of these systems were displayed during daily live cutting demonstrations on the stand.

Thermal Dynamics® iCNC XT for automated plasma cutting provides tools for productivity and profitability, enabling fabricators to achieve the lowest cost-per-cut or best cut quality in all situations.

The new PAK-200i provides the power for demanding manual plasma applications, with 200 amperes of cutting power for quality cuts on up to 40 mm mild steel, with a maximum cut capacity of 70 mm. With a

100 percent duty-cycle at full output, this system is capable of operating at full power all day. A liquid-cooled torch provides significantly longer parts life, and the Tip Saver™ circuit ensures accidental contact between the tip and workpiece at high power levels will not result in damage. This system features dual-gas capability for cutting stainless steel with an argon-hydrogen (H35) plasma gas and nitrogen shield gas, to produce superior quality, weld-ready cuts.

In addition, a range of leading welding and cutting equipment was on display, comprising: a range of cutting torches and gas regulators from Victor®; Cutmaster® TRUETM series manual plasma cutting systems; conventional Auto-Cut XT® and Automation series plasma cutting systems; Thermal Arc® high quality welding equipment; Tweco® MIG torches.

For the demanding professional, Thermal Dynamics offers cutting solutions that empower users and companies in their cutting functions, due to its commitment to integrating advanced technologies with intelligent design, which enriches the user experience through productivity, reliability, simplicity and versatility.

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Email: smallion@victortechnologies.com
www.victortechnologies.com

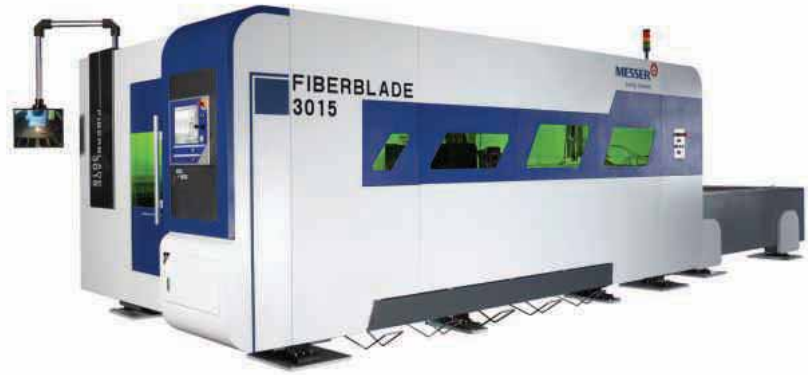
New fibre laser cutting system

Under the motto "Laser cutting in the compact class," Messer Cutting Systems presented a newly developed fibre laser cutting system at EuroBLECH for sheets from 1 to 25 mm thick.

With 2, 3 or 4 kW resonators and its glass fibre beam guidance, the FiberBlade includes an innovative and yet simple laser beam technology. This allows users to profit from low maintenance costs with the resulting low cutting costs to such an extent that the investment costs can be amortised even without the machine being fully loaded.

The machine concept of the FiberBlade is based on the tried and tested flat bed cutting machine with a removable palette table and a 2-axis cutting gantry. The fibre cable of the laser resonator is simply carried in the drag chain. The pallets are exchanged fully automatically in a shuttle table. Cutting areas of the FiberBlade are 1.5 m x 3 m, 2 m x 4 m and 2 m x 6 m.

Through its special construction, the FiberBlade has relatively low energy



consumption. The cutting performance per kilowatt is significantly higher than with CO2 Lasers, as the shorter wavelength of the fibre lasers is better absorbed by the material. Additionally the efficiency of the FiberBlade Lasers is 30 percent and is thus three times higher than CO2 lasers.

A further advantage of the FiberBlade: the extremely low setting and maintenance costs. Fibre lasers operate with continuous glass fibres without deflection mirrors and gas purging. What's more, there are no moving parts in the laser resonator itself and the lifetime of the emitter diodes is over 50.000 hours.

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Water Jet Sweden helps Midlands manufacturer grow

Water Jet Sweden has supplied another new machine as part of Hucknall Sheet Metal's £1.7m expansion venture. The Midlands-based company has long been an established supplier to aerospace firms, including Rolls-Royce, but has extended its operation with the launch of its Microjet Precision Services arm. Part of the firm's investment is in the form of an N'tech grant that will allow it to focus on new and expanding markets in the pharmaceutical, aerospace, marine and energy sectors.

Microjet Precision Services realises that its future growth in manufacturing lies in precision waterjet cutting. Based on the reliability of equipment and support for its initial Water Jet Sweden machine, installed 6 years ago, it has added a further two machines to deal with increased volumes in 2014.

The company understands the benefit of increased production from its initial 4 m x 2 m table, with 5-axis BevelJet head and separate 2D head, allowing twin head cutting. The ability of the BevelJet to handle weld preps and angled tapers has ensured maximum production goes through the Water Jet Sweden machine.

Microjet's first WJS system, delivered early in 2014, was a specific NCM solution for fine abrasive waterjet work (FAWJ) and micro parts to capitalise on this growing market sector. The ability to cut micro details, without any heat affected zone, to tolerances better than 0.05 mm places Microjet in a prime position to service the existing client base in the aerospace sector as well as attracting new contracts from other industries. The single head 1 m x 1 m machine table has WJS's new Microcut™ feature and special sand delivery system. Equipped with the latest BHDT Servotron HP pump, the end user benefits from an approximate energy saving of 15 percent compared to standard, constant drive, hydraulic systems; something that director

Tracy Tolliday says is part of their focus:

"We're always examining new technologies and trying to invest in the latest equipment. As well as huge environmental benefits, saving time and energy, this new equipment gives us an edge over our competitors. We realised the opportunity to produce smaller precision engineered components and have invested in environmentally friendly machinery that will allow us to operate in some new and hi-tech markets, which we are very excited about."

Building on the successful introduction of the NCM machine, Microjet has further invested in advanced technology in the form of a Water Jet Sweden NCS 4020 table. Installed in November 2014, this machine was a bespoke design based on the customer's requirements and incorporates the latest BevelJet™ 60 5-axis head with additional rotary axis and dedicated cutting zone. In total the machine has eight synchronised CNC axes to maximise possible applications. This gives the company the capability to cut details from flat sheet up to 4 m x 2 m and tubular sections up to 200 mm in diameter, all with the Microcut fine abrasive waterjet process, standard 2D abrasive cutting or with the BevelJet function.

The intuitive software provided by Water Jet Sweden makes the programming of such an advanced system very simple, either by using existing CAD drawings or by parametric programming methods and no heavy 3D software is required. Together with the training provided on-site by WJS UK, Microjet's engineers were in full production within a week of the machine arriving on site.

The new equipment should allow Microjet to employ a further 11 staff. WJS UK sales director, Gavin Bell comments: "The fact that three Water Jet Sweden systems are allowing the company to expand is very positive. Each investment by this group has been pushing the boundaries of available technology which is brave and exciting. When we see investment programs in our equipment improving accuracy, quality, and productivity it is very satisfying and nurtures a strong working partnership. Coupled to the job creation that this enterprise has delivered this is truly quite a success story"

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www.waterjetsweden.co.uk

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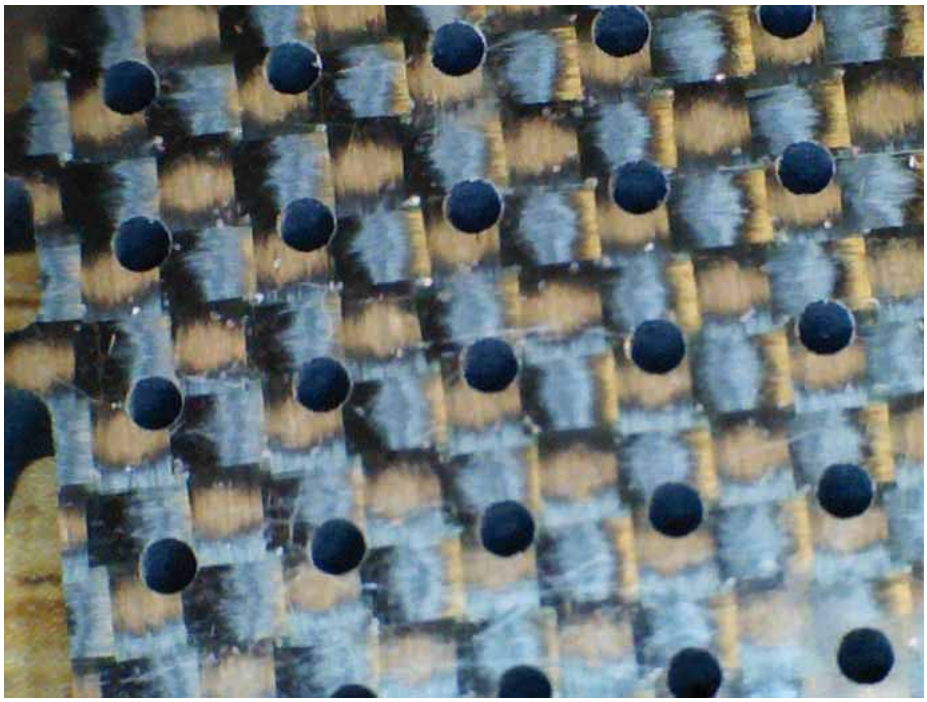
Using abrasive waterjet to machine composites

Cutting composite material is a perfect application for abrasive waterjets. A precision waterjet with a taper compensating head will machine 6 mm thick carbon fibre as fast as 4.5 M/minute at 4100 bar with taper of less than 25 µm per side. Meanwhile 20 mm thick G10 can be machined as fast a 1 M/minute at 4100 bar with the same precision.

While speed and accuracy are two big reasons that shops machine composites with abrasive waterjets, easy setup and minimal tooling are also a key factors. Since composite parts often times consist of small runs, one or two parts, minimal setup time is the key to profitability.

One example is Kevlar® fibre used for vehicle armour. Each piece has a unique geometry, resulting in dozens of cuts unique to each vehicle. The ability to quickly set up to cut armour panels means faster turnaround time. The ability to nest geometries within 1 mm of each other minimises material waste and makes the process even more cost-effective.

Another consideration is that in some high precision applications such as medical and aerospace, raw composite sheets can be relatively small, sometimes only 1 m x 1 m and only 6 mm thick. In these applications the small waterjet platform along with a low horsepower pump will significantly reduce the initial capital outlay. Depending on the speed of the cut and the grit of the abrasive, composites machined with an abrasive waterjet can have a surface finish of 5 µ, and may not require further processing.



1 mm holes pierced in 4 mm carbon fibre with low pressure water and abrasive

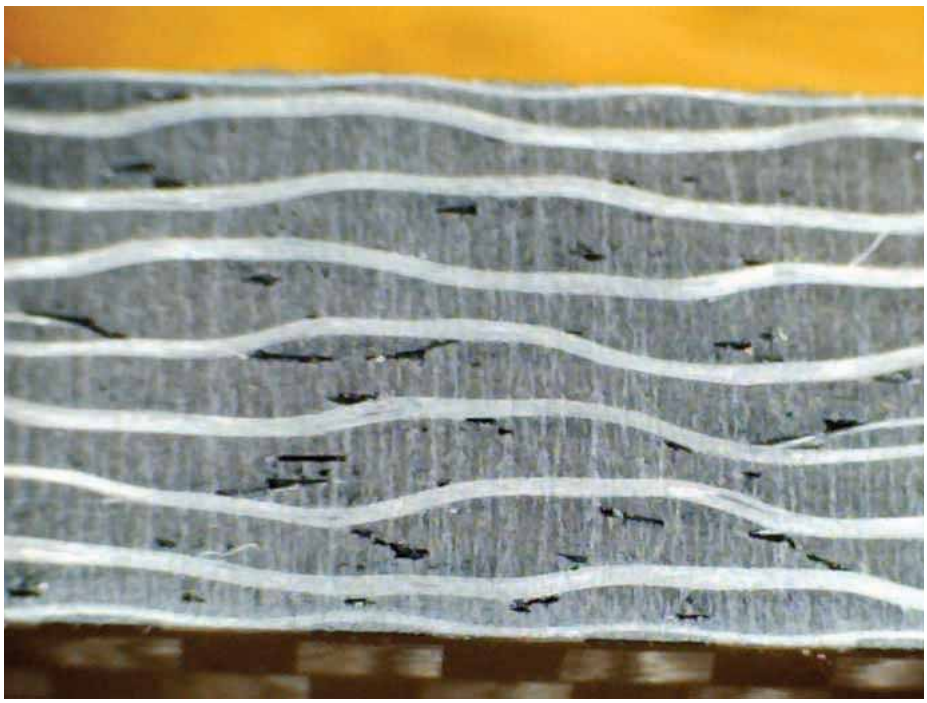
High resolution photos show that abrasive does not impinge the material, and even consumer grade carbon fibre (which naturally has voids between the material layers) can be cut on an abrasive waterjet without being damaged.

Machining DIBOND® for signage is not a high precision application. However, superior surface finish with zero surface frosting is critical for the finished product and it is the reason more and more sign companies turn to waterjet for their application.

When machining composites, it is important to support the material in a way that does not allow the jet to deflect onto the bottom of the composite. It is also important to choose the correct abrasive grit. For example, most composites will have a better surface finish if they are cut with 120 grit abrasive.

While cutting composites is pretty standard, piercing composites is a different story.

In the past, piercing a wide range of composite materials from phenolics, carbon fibre and G10 to Kevlar and even DIBOND would cause material delamination (the term used when the layers separate). Delamination is the result of the high velocity water and abrasive following the path of least resistance, and leaching into the epoxy that is binding layers of material.



Abrasive waterjet machined, 4 mm thick commercial carbon fibre under 30 magnification

When piercing results in delamination, the geometry of the hole has to be large enough to remove the entire delaminated area, or else the part has to be scrapped. Even delamination of support material like paper phenolic, will compromise the structure.

To avoid delamination, smaller holes are often drilled by hand.

One option for automatically piercing composites is to use a process that automatically reduces the water's velocity during piercing, while still drawing a strong enough vacuum (known as the Venturi Effect) to pull abrasive into the jet stream. This option is not absolutely 100 percent effective, but with careful setup the process is very effective. This process does require test cuts to optimise the water velocity for different materials and thickness.

An option that ensures 100 percent delamination free piercing is to use a pneumatic drill mounted next to the nozzle. The waterjet operating software automatically moves the drill into position and a 3 mm bit drills a start hole. The software then automatically positions the nozzle over the pre-drilled hole and starts cutting. While the drill option 100 percent eliminates delamination, there are limits on the diameter of the hole that can be pierced and it will add to the overall cycle time of the part. Despite increased cycle times, the drill option is inexpensive and very easy to adapt to different materials and different material thicknesses.

Abrasive waterjet offers an affordable process for machining all types of composite material quickly and reliably.

UK Distributor:
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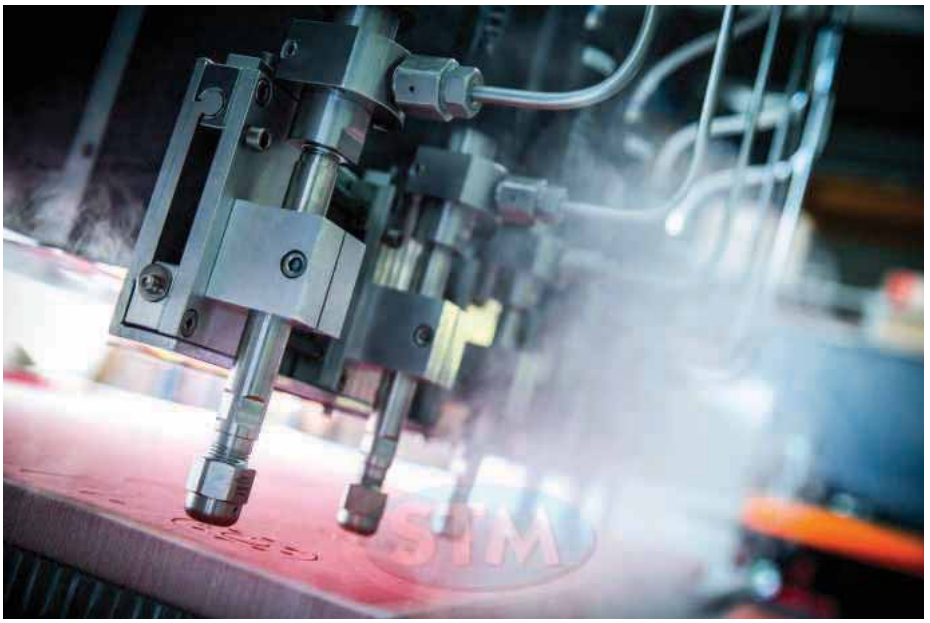
Economic waterjet cutting made easy



STM systems measure the required cutting speed and quality per order conveniently and fully automatically and thus guarantee cost-efficient implementation without long tinkering.

During cutting with a waterjet, the cutting speed continues to drop while the demand for quality rises. This fact affects economic manufacture as this hinges on the cutting speed which in turn depends on material and function of the workpiece. High-performance systems therefore guarantee accurate but not automatically profitable production.

However, this is not the case with the systems from Austrian waterjet specialist STM, because this experienced pioneer has systematically designed the structure of its entire system for economic efficiency. It is not power at any cost but benefit-oriented efficiency that is the company motto. The result is a modular system developed with the interaction of the best quality components down to the last detail. STM also offers the advantage of its intelligent, integrated software.

A sketch in the form of a file in AutoCAD format is sufficient for the calculation of the cutting parameters and operating costs. The crucial parameters for surface, cut face and quantity of the workpiece are additionally measured in a matter of minutes. With the help of this information, the software automatically calculates cutting time and cost in order to be able to produce the required part with the appropriate quality and quantity. Operators can additionally be confident that all essential components like high pressure pump, cutting nozzle and abrasive contribute to ensure the best possible price/performance regardless of the material used.

If you additionally note that waterjet cutting generally does not require mechanical changes and post-processing of the part, that the material is used optimally and that tool changes on the machine as well as lengthy fastening work can be omitted, then cutting with a waterjet cutting system is an unparalleled flexible, cost-effective and simultaneously convenient solution.

Thanks to STM, users can also reproduce this fact on the go at any time with the Waterjet Calculator App, available to customers at a nominal price. The App provides information on the recommended cutting speed as well as the hourly machine rate and the unit costs per order. With the most cost-effective "waterjet coach" in the world, the Austrian innovation leader provides a self-explanatory tool that can be used by beginners as well.

The cut face quality of a finished workpiece has a crucial influence on the overall costs. A high quality cut face requires an appropriately low cutting speed. This also applies to greater material thicknesses where high cutting speeds are usually not possible. The waterjet industry differentiates between five different cutting qualities in all: the centre cut is recommended for cutting blanks and semi-finished products with low cutting quality and fast feed; the fine centre cut is used for blank cuts with a lower feed speed; the production cut with its low cutting quality and fast feed is the most common cut because feed and cutting quality are economically balanced. It is especially suited for cutting blanks and semi-finished products; the quality cut is intended for the production of blanks cuts with low surface roughness; high precision cuts are recommended for cutting very fine outlines with high cutting quality, low surface roughness and component accuracy in the micro range. In short, there can be no economic success without suitable cutting speed.

The good news is that the cutting speed can be influenced significantly with the system configuration. This includes aspects like operating pressure, nozzle diameter or abrasive dosing. The ancillary costs are another important factor. STM has configured just these factors optimally from the start and the design helps achieve considerable cost savings. It includes immediate operational readiness during the switching on and automatic switching off as well as continuously adjustable high pressure pumps and first-class cutting heads. The automatic calculation function of the integrated software furthermore prevents errors and additionally saves time. The personal support of the application engineers tops out the unequalled service of the company, not forgetting the Waterjet Calculator App with which users can also determine all important parameters on the go and print them out as a combined nozzle diagram.

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Acoustafoam increases capacity with new waterjet system

Acoustafoam Ltd supplies acoustic insulation components and products made from foams, polyester fibre, rubbers and polyurethanes. Its customers are worldwide and include construction, agricultural, marine, defence, and automotive industries, to name but a few.

The company recently won a large scale contract with one of its key customers which has resulted in adding capacity to their already large scale waterjet cutting capabilities.

Acoustafoam has recently taken delivery of a WARDJet Emerald 1530 machine with two Z axes and abrasive cutting heads. WARDJet launched the Emerald Series in 2013 as its value-engineered waterjet cutting machine. When compared to other low-cost waterjets, the Emerald stands alone. The Emerald Series offers many of the same features of large, expensive waterjets at a reduced price.

Acoustafoam currently sub-contracts both its abrasive and pure waterjet machines. Further information can be found at **www.acoustafoam.com**

Carl Tranter comments: "this is the second WARDJet waterjet cutting system purchased by Acoustafoam and our sixth waterjet machine in total. The Emerald 1530 met our requirements to fulfil this major contract and to give us the flexibility as the diverse range of materials we process evolves.

We have an established reputation for high quality products and service within our industry which is why we chose WARDJet. We needed a machine that was reliable and therefore an asset to our business enabling us to continue to strive and maintain the growth in our business".

WARDJet is a company built on a reputation for being innovative and creative and is a leading manufacturer of abrasive and water-only cutting machines. Whilst a wide range of standard size units are built, WARDJet is well known for designing and building custom machines from the conceptual process through to installation and warranty. Dozens of unique features such as barcode scanners, multiple 5-axis cutting heads on a single crossbeam, drilling, tapping, inkjet printing are combined into systems with up to 1.5 m of travel in the Z-axis, making WARDJet a favourite within the aerospace and general engineering industries. WARDJet technology is built to intentionally encourage customers to grow and evolve over time with its "leave no customer behind" policy.

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www.wardjet.com

New 4,000-bar direct-drive pump

New unit ensures energy-saving, eco-friendly waterjet cutting

With a 4,000 bar operating pressure yet low energy consumption, the new Woma EcoJet 70M 4000/4 is a cost-saving, ultra-high pressure, direct-drive pump for waterjet cutting system operators. Its compact dimensions mean that the unit with its plunger pump is easily installed in new or existing systems.

The EcoJet 70M 4000/4's plunger pump uses very little oil and runs very quietly with a noise rating of just 80 dBA. The direct drive uses up to 30 percent less energy. These are significant improvements on the performance of pressure intensifier units. The EcoJet is suitable for abrasive and pure water cutting and can also be retrofitted into waterjet cutting systems for metal, stone and plastics. Waterjet cutting uses a very fine jet with an optimal combination of pressure, water quantity and nozzle. The jet can cut at a very high speed, producing an edge-free cross-section and few shavings. Multilayer material can also be cut without problems and is not crushed in the process. Furthermore, the EcoJet is barely heated with the use of water, so the process is also suitable for use with heat-sensitive materials that would melt or change in shape if they were sawn.

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

Dassault Systèmes introduces SOLIDWORKS 2015

Dassault Systèmes, the 3DEXPERIENCE company and world leader in Product Lifecycle Management (PLM) solutions, 3D design software and 3D Digital Mock Up, has announced SOLIDWORKS 2015, the latest release of the company's successful portfolio of 3D design software applications. With SOLIDWORKS 2015, users gain access to cloud-based capabilities and a wider range of choices for improving productivity, work processes, operating costs.

SOLIDWORKS 2015 covers all comprehensive aspects of the product development process with an intuitive, integrated 3D development environment that includes 3D design, simulation, electrical design, product data management and technical communication. In addition, starting with the new Collaborative Sharing feature, SOLIDWORKS 2015 enables access to Dassault Systèmes' 3DEXPERIENCE platform and its cloud-based capabilities. Designers and engineers can span multiple disciplines with ease, shortening the design cycle, increasing productivity and collaborating to deliver innovative products to market faster.

SOLIDWORKS 2015 not only delivers key enhancements requested by the entire user base, but also solutions for a wide array of industries and markets. For example, SOLIDWORKS users will be able to easily enhance the aesthetics of consumer products and apparel, and simulate construction machinery, building infrastructure and machine tools better than ever before.

"With the emphasis on the direct-from-3D-model fabrication processes, it's important that we shift our focus to model-based definition so that we can shorten our overall design cycle and simplify the way we do things," says Ryan Trulli, mechanical engineer, GE Oil & Gas. "With SOLIDWORKS Model Based Definition, the 3D model itself holds all the dimensional data necessary to make the part. This means less documentation creation, fewer emails flying around, and fewer files to sustain when the project is complete."

SOLIDWORKS 2015 Portfolio Enhancements

Among the top user-requested features, products, and enhancements included in the SOLIDWORKS 2015 portfolio are:

Improve Everyday Productivity

Focus On Design, Not Modelling with new features that reduce geometry creation steps.

Faster Information Sharing – Improved general performance, faster analysis and streamlined approaches give users the data to quickly make decisions and keep designing.

Enhanced User Experience – An improved graphical interface presents a clear view of critical data to help focus on design.

Simulate Multiple Design Scenarios – Quickly evaluate the effects of various load combinations on a model, and tracking results.

MySolidWorks Standard – The new MySolidWorks Standard and Professional subscription levels deliver more than 100 hours of SOLIDWORKS training materials and online file exchange services.

Optimise Work Process

Collaborative Sharing – By easily accessing social collaboration and online data management tools on the 3DEXPERIENCE platform, users can benefit from faster development and quicker decision making.

SOLIDWORKS Treehouse – Top-down design is facilitated by visually creating assemblies, enabling product structures to be managed at the beginning of design projects.

Web2 for SOLIDWORKS Enterprise PDM – With the addition of mobile connectivity, users can connect to Enterprise PDM from any location, at any time.

Reduce Operations Costs

SOLIDWORKS Model Based Definition – A new offering to help improve communication between design and manufacturing teams by enabling them to communicate product and manufacturing information (PMI) in 3D.

SOLIDWORKS Inspection – The process of creating documentation is simplified, allowing users to quickly set up and compare baseline data to production parts for quality control.

SOLIDWORKS Electrical – Quickly develop electrical schematics and incorporate them into the 3D model with enhanced cable harness and system integration.

Enhanced Cost Analysis – Users can estimate costs across many manufacturing methods, including weldments, plastics, castings and 3D printing.

Solve More Design Challenges

Improve Manufacturability of Products with Compound Curvature – Automatically flattening of 3D models, to help identify materials and manufacturing issues. This feature is especially helpful to those in the apparel, footwear, upholstery and shipbuilding industries.

Enhance Product Aesthetics and Usability – Creating asymmetrical fillets for parts, assemblies and surfaces gives users in the high tech, medical and consumer industries increased flexibility to model more ergonomic and stylized designs.

Accurately Simulate Machine Components – Developing accurate construction machinery and machine tools with automated roller chains helps ensure operation and usability.

For more information about SOLIDWORKS 2015, including video demonstrations, visit www.solidworks.com/launch SOLIDWORKS 2015 is currently available worldwide through SOLIDWORKS resellers. For more information or to discuss pricing with an authorised reseller, visit: **http://solidworks.com/locateVAR**

New Knowledge Based Machining released

SmartCAMcnc has announced the release of SmartCAM® v2015. SmartCAM v2015 delivers a new Knowledge-Based Machining (KBM) repository, new High Speed Milling (HSM) strategies, and many user interface and core application improvements.

The SmartCAM Computer-Aided Manufacturing (CAM) software family consists of applications for Computer Numerical Control (CNC) milling, turning, fabrication and wire EDM.

The knowledge-based machining improvements found in SmartCAM v2015 lay the groundwork for capturing user knowledge and shop expertise. A new KBM repository allows frequently-used toolpath process parameters to be stored and then later recalled. Part materials can be defined directly within the application, and speeds/feeds settings can be stored and updated directly, without the need of a separate utility. The new machine definition allows all files associated with a particular machine to be simply recalled by selecting the machine name.

"SmartCAM v2015 introduces a new Knowledge-Based Machining database that will serve as the backbone for all of SmartCAM's manufacturing data needs," says Douglas Oliver, SmartCAMcnc's senior product manager. "With SmartCAM v2015 users will be able to store their best-practice, commonly-used toolpath processes and parameters and recall them for future re-use. Additionally, the enhanced Material Definition makes it easier for the casual user to take advantage of the powerful Material Library capabilities, and the new Machine interface simplifies job setup."

SmartCAM v2015 includes several High-Speed Machining improvements including new roughing and finishing toolpath smoothing capabilities, which remove sharp corners from the toolpath, thereby reducing shock to both the tool and machine. New closed-profile continuous morphing and ramping strategies can also be used in combination with the new smoothing capabilities. Furthermore, the restmill region calculation has been enhanced to consider material left behind anywhere within a region, including additional material left behind as a result of smoothing

"The new high-speed milling enhancements in v2015 will be appreciated by all of our users that do significant amounts of roughing," says Douglas Oliver.

"These features follow some of our previous HSM efforts, and demonstrate our on-going commitment to improve SmartCAM's high-speed machining capabilities in future releases."

SmartCAM v2015 boasts a number of significant improvements to SmartCAM's user interface including new list picking, group toolbar, and toolbar scrolling to name a few. These improvements continue the UI development of previous versions and allow greater flexibility in how the interface is configured which ensures daily use is easier and more direct.

All SmartCAM v2015 products benefit from an updated ACIS® modelling kernel as well as updated native and generic data translators. Many customer-requested core improvements have been added, including an all-new configurable Auto-save feature.

"SmartCAM v2015 is a significant step forward for the SmartCAM family of products." concludes Mr Oliver. "The user interface improvements include several customer requested features that, based on the positive feedback we received from our previous UI improvements, will be welcomed additions."

The SmartCAM family of computer-aided manufacturing software provides toolpath modeling and CNC programming for prismatic production work to complex molds, dies, and prototypes to an established customer base of over 12,000 companies in 67 countries. SmartCAMcnc provides affordable maintenance contracts, updates, upgrades and technical support for all users, regardless of version. All of the products include updated data translators and market-leading NC editing software from Predator Software, Inc **(www.predator-software.com).**

SmartCAMcnc is an Oregon-based company that was established in December 2003 for the purpose of reviving the SmartCAM suite of computer-aided manufacturing (CAM) software for the benefit of its worldwide customer base. Gregg Olson, founder and president of the company, has been involved in developing CNC programming systems since 1979, with over two decades of experience in various product development capacities for Weber Systems, Point Control, CAMAX, and SDRC.

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OPEN MIND shows model for success

With the AMB show, held in September, being the European launch platform for new products and innovations, the DMG Mori 'Innovation Week' was an opportunity for UK manufacturers to see first-hand, what the company and its technology partners had to offer.

Whilst DMG Mori introduced a number of new machine tools to a hungry audience, its technology partners such as Sandvik, Hexagon, Micron Workholding and OPEN MIND Technologies all had new developments of their own. For OPEN MIND, the focus was on the new hyperCAD-S platform and new 5-axis machining strategies incorporated into the latest version of hyperMILL 2014.2.

With the event having a specific industry focus on each of the five days, OPEN MIND used the 'Innovation in Aerospace' day to introduce the new features built into hyperMILL and hyperCAD-S. From a practical standpoint, this took shape in a live on-machine demo of an aircraft undercarriage component being machined on a DMG NTX2000 mill/turn centre. The demo part highlighted OPEN MIND's new features that further improve HSM, 5-axis strategies and power-cutting to maximise stock removal.

This on-machine demo was accompanied by a technical presentation by OPEN MIND UK's sales director, Ken Baldwin. The 30 minute presentation to a packed seminar theatre of enthusiastic engineers encompassed an overview of OPEN MIND's new Direct Modelling feature that sits within hyperCAD-S. This exciting new innovation provides programmers a 'just do it' approach to design with a modelling strategy that gives end users the power to quickly define and capture a geometry.

In real terms, it allows a programmer/designer to focus on creating a geometry

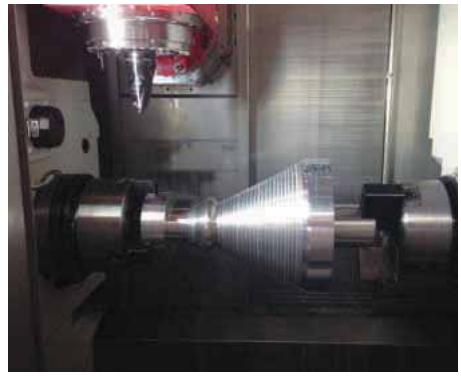
rather than building features, constraints and design intent into models, which is the historical working method with the widely used Parametric Modelling strategy used by alternate CAD vendors. By adopting hyperCAD-S and its Direct Modelling strategy as opposed to the industry accepted Parametric Modelling, end users can eliminate the time-old process of anticipating and defining feature constraints, relations and dependencies to ensure that any design modification will update all related downstream geometries in a predefined way. With engineers keenly nodding in acceptance of this new methodology, Ken Baldwin highlighted the benefits by showing a Parametric model that was created in 7 minutes 31 seconds then being created in 4 minutes and 46 seconds with hyperCAD-S - a time saving of 36 percent.

As well as demonstrating the practical and theoretical benefits of hyperCAD-S, the technical presentation also highlighted how a new geometric kernel, new database, graphics and user interface with touch support plus a new API for internal and external developers within hyperCAD-S can benefit the end user.

On top of presenting the benefits of hyperCAD-S, another prominent aspect was the utilisation of 5-axis machining strategies within 2D & 3-axis applications to improve productivity on the shop floor. One example of this was the new 5-axis pocket strategy in hyperMILL. The unique 5X immersion method has been proven to reduce axial forces and loads on the cutting tool and spindle whilst permitting increased step-overs for significant gains in productivity.

With DMG Mori's prestigious aerospace customer base in attendance, OPEN MIND hit a key chord with many of its new developments. Focusing upon delivering shorter programming times, faster processing time, longer tool life and better surface quality, the OPEN MIND presentation and on-machine demos combined to impress the attendees of this event.

OPEN MIND Technologies AG is a leading developer of CAM/CAD software and



postprocessors for designing and manufacturing complex moulds and parts. OPEN MIND is one of the five largest providers of CAM solutions according to the NC Market Analysis Report 2013 compiled by CIMdata, a market research company. OPEN MIND offers an extensive range of products from 2D feature-oriented solutions for milling standard parts through to software for 5-axis simultaneous machining. With their hyperMILL software, which is used in the automotive, tool and mould manufacturing, mechanical engineering, medical and aerospace, and watch and jewellery industries, OPEN MIND Technologies AG is represented in all the important markets in Asia, Europe and America.

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MachiningCloud feeds ISCAR tool data to VERICUT

CGTech, developer of VERICUT® software for simulating CNC machine tools, has announced that as a result of the CGTech-MachiningCloud-Iscar partnership, VERICUT users can directly download Iscar tool assemblies and use it within VERICUT software with minimal effort.

Most leading cutting tool manufacturers now make 3D solid model data available and VERICUT can read in this model data for use in the simulation process. Iscar's MachiningCloud application, named IQCloud, increases its customers' productivity by offering instant access to the company's complete and up-to-date cutting tool data. This eliminates the hassle of searching through printed catalogues and various websites to find ideal tooling and then manually entering the data into the shop's software. Tool assemblies can be grouped into "jobs," and the complete job can be imported into VERICUT's tool manager with only a few clicks.

"The accuracy of the data input into VERICUT directly affects the output. So, an accurate model of the cutting tool and

holder is required for the effective and accurate simulation of the machining process," says CGTech Ltd managing director John Reed. "We always look for simple ways to reduce the time to setup VERICUT and ensure it correctly mimics the operations. Having direct access to the Iscar cutting-tool product data through the MachiningCloud App reduces the frustration and time associated with obtaining the tooling information needed."

VERICUT CNC machine simulation, verification and optimisation software simulates all types of CNC machining, including drilling and trimming of composite parts, water jet, riveting, robots, mill/turn and parallel kinematic/hexapods. It operates independently, but can also be integrated with leading CAM systems.

ISCAR, located in northern Israel, is a dynamic full line supplier of precision carbide metalworking tools, producing a wide range of carbide inserts, carbide end mills and cutting tools, covering most metal cutting applications. ISCAR also provides metalworking solutions in both engineering and manufacturing to major industries throughout the world. Many innovative products, specially designed according to customer requirements, have made ISCAR a world leader in manufacturing industries such as automotive, aerospace and die & mold production.

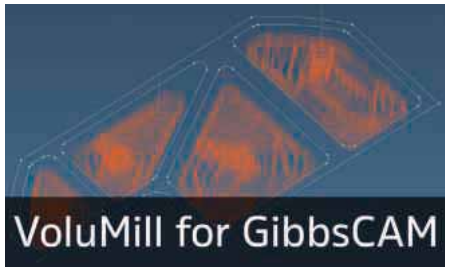
CGTech
Tel: 01273 773538
Email: info.uk@cgtech.com
www.cgtech.co.uk

GibbsCAM now includes VoluMill

Free Ultra-high speed roughing for new production mill users

Gibbs and Associates, developer of GibbsCAM® software for programming CNC machine tools and a Cimatron (NASDAQ: CIMT) company, has begun including a no-cost license of VoluMillTM Wireframe for GibbsCAM with each new license of GibbsCAM Production Milling.

Until now, the ultra-high-speed-toolpath engine was a fee-based option for GibbsCAM production milling, the primary milling package upon which a series of multi-axis GibbsCAM machining options integrate. Production milling, which provides wireframe geometric modeling and toolpath generation for 2-, 2.5-, and 3-axis machining, with 4th axis positioning, will now have VoluMill integrated within its traditional, shop-friendly interface. VoluMill Wireframe for GibbsCAM is a high speed machining process developed specifically to achieve the highest material removal rates while extending tool life through smooth transitions and constant tool loading. Customers have reported cycle time



reductions as high as 70 percent and tool life extension of five times.

"Although we believe that our software already carries exceptional value, we are pleased to offer this incremental value to customers," says Robb Weinstein, senior vice president of sales and strategic planning of Gibbs and Associates. "They will achieve the greatest productivity possible in roughing parts, and quickly see how VoluMill's ultra-high-speed machining, with its optimal material removal rates, translates into high-speed part production at lower cost through savings in time, tools, and machine maintenance."

Traditional roughing toolpaths are typically generated as parallel offsets with sharp corners and transitions, requiring stops, starts and variable speeds to optimise motion and protect cutting tools from excessive wear and breakage. In contrast, VoluMill generates toolpaths optimised for volumetric material removal by using continuous tangential motion, specialised contour ramping, adaptive feed rates, and chip thickness control, achieving the highest feeds and speeds possible. By leveling tool load, maintaining constant machine-tool motion and using high-speed-repositioning, the software produces more efficient toolpaths, extending tool life and significantly reducing cycle times. No additional optimisation is required. VoluMill for GibbsCAM works on any combination of part and stock boundaries, and supports an unlimited number of islands, walls, pocket depths and island heights.

UK Distributor:
Tech CADCAM Ltd
Tel: 01284 754781
Email: sales@techcadcam.net
www.techcadcam.net

Breathing new life into oil-free piston air compressors

The absolutely oil-free, piston compressor series from BOGE provides maximum air delivery with minimum power consumption and footprint. Piston compressors have been given a fresh face with the new oil-free PO series from BOGE. Compact, energy efficient, durable, low maintenance and highly economical to use, the complete absence of oil in the series guarantees uncontaminated compressed air. The modular format of the compressor range is designed for flexibility. With an impressive 28 variants in series, including the option of a twin compressor units, dryers and air receivers, customers can add the appropriate component to suit their application. The guarantee of oil-free compressed air is essential for a number of sectors and applications, where the provision of compressed air with high purity is a critical factor.

BOGE Compressors Ltd Tel: 01484 719921 Email: m.heeley@boge.com

High quality, low cost replacement filter cartridges

Those seeking OEM-quality filter elements/ cartridges, but are fed up paying premium prices for branded products, should look no further than the range of alternative filter elements from Hi-line Industries Ltd. Hi-line not only offers thousands of cartridges as alternatives to many well-known branded products, but performance that will at least equal, and quite often exceed, that of the original equipment.

It's vital that filter elements are replaced at regular recommended maintenance intervals to avoid potentially extensive damage to downstream capital equipment, as well as the possibility of costly interruptions to production.

Hi-line Industries Ltd Tel: 01283 533377
Email: enquiries@hilineindustries.com

New brochure from Seaward

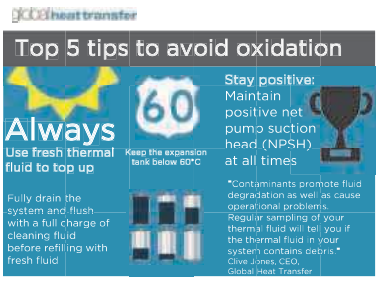
A new A4 full-colour brochure featuring the Clare range of advanced production line and test laboratory electrical test equipment has been launched. This is now manufactured under the Seaward brand.

The brand offers one of the widest ranges of instrumentation available in compliance testing and precision measurement. The new 'Electrical test equipment for the manufacturing and hire industries' brochure features product information and technical specifications for all its test equipment designed specifically for demanding manufacturing and hire/rental environments.

There's also details about various productivity and verification accessories, calibration services, and after sales support and online contact details. A copy of the brochure is available to download at www.seaward.co.uk/brochures.

Seaward Tel: 0191 587 8741 Email: sales@seaward.co.uk

Thermal fluid maintenance in five minutes



Five minutes in the life of a plant is nothing. But as any busy process engineer knows, time is money and even one minute of downtime can cost thousands of pounds. Thermal fluid specialist, Global Heat Transfer, has revealed its top tips for the maintenance and shutdown of heat transfer systems with three quick and easy to read infographics.

The infographic based cheat sheets explain in five minutes or less how to extend the life of thermal fluids by following a few very simple steps. The guides are available for download on the news section of the Global Heat Transfer website – **www.globalheattransfer.co.uk**

Global Heat Transfer Ltd Tel: 01785 760555 Email: carolinel@globalgroup.org

ESAB launches redesigned website

ESAB, a world leader in welding and cutting technologies, announces the launch of its newly redesigned website. A fresh design and improved navigation offers visitors to **www.esab.co.uk** a better user experience.

The new site has a cleaner, contemporary look and uncluttered layout. A completely revamped home page welcomes visitors with bold, impactful visuals. Improved, drop-down navigation menus and better functionality throughout make it easier for users to locate content in fewer clicks. An enhanced product support tab provides one-click navigation to frequently requested information, including Material Safety Data Sheets (MSDS), product certifications, and user manuals. Redesigned using the latest technology, the website is compatible with today's browsers and mobile devices.

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

Bowers Group launches new website

Bowers Group, a global leader in the design and manufacture of precision measuring solutions, is proud to announce the launch of its new website: **www.bowersgroup.co.uk**.

The new website has been designed to provide the ultimate user-friendly experience with improved navigation and functionality throughout. It includes extensive product information to help customers understand Bowers Group's complete range of precision measuring solutions. Technical data, videos and application stories work together to provide a detailed overview of Bowers Group's capabilities across a wide range of sectors. The website has been designed using the latest technology so is compatible with today's browsers and mobile devices.

Bowers Group Tel: 08708 509050 Email: sales@bowers.co.uk

New DYMAX 3401

Intertronics has recently announced Dymax 3401 dual cure (UV and moisture) adhesive, designed for rapid bonding of a wide variety of plastic and metal substrates, including PC and ABS applications. Dymax 3401 works fast, with under 1 second UV/visible light cure using broad spectrum UV or narrow spectrum 385 nm LED light, plus secondary moisture activation for complete curing in shadow areas to ensure quick and convenient assembly. This dramatically improves manufacturing efficiency and reduces costs.

Dymax 3401 offers peace of mind in plastic component assembly, production of appliances; also bonding, sealing or encapsulating of PC and ABS components.

Intertronics Tel: 01865 842842 Email: info@intertronics.co.uk

ISO accreditation the easy way

When Bernard Holmes Precision of Sleaford, Lincolnshire, decided to acquire ISO 9001, this successful subcontract precision engineering company was keen to implement a production management system that would make the path to accreditation as smooth as possible. This was achieved, with zero non-compliance, within six months of investing in PSL Datatrack business administration software.

Bernard Holmes' assistant manager, Russell Thackray, says, "I would definitely recommend PSL Datatrack to any other company like ours looking for ISO 9001 accreditation. It made our presentation to the auditors highly professional and we were able to confirm everything they needed to know about our company information and procedures with just two or three clicks of the mouse."

PSL Datatrack Tel: 08456 345931 Email: sales@psldatatrack.com

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