

Technology race

Lamb Precision Engineering's award-winning Norton-engined Café Rouge features parts machined on XYZ machine tools

The Autosport Engineering exhibition takes place at the NEC, Birmingham, with trade days designated as 8 and 9 January. Andrew Allcock previews the manufacturing technology element

Within Autosport Engineering, itself a sub-section of the Autosport International Racing Car Show, is a further sub-division; that of Manufacturing Technologies. This encompasses manufacturing technology suppliers offering machine tools, tooling, workholding, inspection or software products.

Starting with machine tools, and a big name, Yamazaki Mazak is taking up residence for the duration. Visitors to stand E322 will get to see, first hand, examples of the machine tools that helped Vodafone McLaren Mercedes achieve the consistency to deliver the Formula One Driver's World Championship for Lewis Hamilton.

Yamazaki Mazak is now celebrating 10 years as Official Supplier of CNC Machine Tools to Vodafone McLaren Mercedes, and the 15 machine tools installed at the McLaren Technology Centre, Woking, have played a crucial role in ensuring that

parts are manufactured to the exacting tolerances demanded by Formula One.

"Everyone at Mazak is extremely proud of the contribution that we have made to the success of Vodafone McLaren Mercedes over the years and, in particular, the fantastic achievement of Lewis Hamilton this season," says Tony Saunders, Yamazaki Mazak's UK sales director. "As we celebrate completing 10 years as an official supplier to the team, we will continue to work closely with them to further develop the manufacturing strategies that have proved so successful."

THREE MORE

That work includes the installation of three more Mazak machine tools at the McLaren Technology Centre in the coming months. These will be two Quick Turn Nexus 100-II MSY turning centres, both equipped with barfeeds, and a Vortex 815/120-II simultaneous 5-axis

vertical machining centre.

XYZ Machine Tools will underline its small batch manufacturing credentials, claiming that the Burlescombe, Devon, supplier's machine tools are "the smarter choice for prototype and low volume production". The company claims to be "the largest supplier by volume of CNC machines to the UK market".

Stand E216 will be home to five models of machine tool that between them demonstrate XYZ's emphasis on products designed specifically for environments where prototypes and small batch work are the rule rather than the exception. The XYZ ProtoTRAK SMX 2000 manual/CNC turret mill, XYZ ProtoTRAK SMX 3500 manual/CNC bed mill and XYZ ProTURN SLX 1630 manual/CNC lathe are all equipped with the exclusive ProtoTRAK control that provides consistent high efficiency performance, whether operating in manual or CNC mode. Complex parts are

easy to program, with a full range of canned cycles and plain English prompts meaning that knowledge of G codes is not required.

Also on the stand at Autosport Engineering 2009 will be two full-CNC machine tools, the XYZ Mini Mill 560 compact vertical machining centre and the XYZ Compact Turn 52 turning centre. Both are easily programmed without any G coding knowledge and programming can be undertaken off-line if required, using CAD/CAM or other applications of the customer's choosing.

A full no quibble guarantee is offered on all its machine tools, as is competitive finance.

Kasto will present its latest Workshop range of sawing machines. The German manufacturer is best known for manufacturing high end, automated sawing and storage equipment. However, the UK subsidiary, based in Southampton, is keen to emphasise that it also offers a comprehensive range of affordable bandsaws, circular saws and even power hacksaws from Kasto.

UP FOR INSPECTION

Moving on to inspection equipment, Hexagon Metrology (E926) will take the wraps off new fixed and portable CMMs and the latest iteration of the PC-DMIS EMS suite, its pioneering 'drawing-board-to-racetrack' metrology software.

The company returns to the show with the recently announced ultra high accuracy Leitz Micra CMM, Leica Geosystems Absolute laser tracker and the Romer MultiGage articulated arm. It will also exhibit a Sheffield Discovery shopfloor CMM and Hexagon's latest Leitz LSP probe and scanning technology.

The Enterprise Metrology Solutions software facilitates 'right first time' manufacturing and will be targeted at motorsport designers and engineers working against the clock to rush parts and modifications to the racetrack. The suite embeds PC-DMIS tools into the user's CAD suite enabling designers to mark up virtual blueprints for conversion into parts programs. The programming is



The Leitz Micra will feature on Hexagon's stand

then available for all inspection and validation tasks throughout the design-through-to-manufacture process, guaranteeing the integrity of the original design intent.

Live demonstrations of Faro's 3D measurement devices including the FaroArm, the Laser Line Probe and the Faro Gage will be found on stand E210. The FaroArm Quantum, for example, is a portable measuring arm that can measure accurately to within ± 0.016 mm.

Force India provides a good example of the potential benefits of using the FaroArm. The team – built from the ashes of Eddie Jordan's Jordan Grand Prix – is the first Indian Formula One team and recently purchased two FaroArms and a Laser Line Probe. It can now carry out more accurate measurements in its wind tunnel faster than with previous methods, reducing some aspects of set-up times by as much as 66 per cent.

Faro will also showcase the Faro Gage, part of its line of co-ordinate measuring machines. It has a 1.2 m (48 in) working volume, making it a truly portable 'mount-it-to-where-you-make-it' solution. The Faro Gage is a cost-effective, 3D gauge for machinists and requires only minimal training. The

product replaces all conventional gauging devices, says the company, and has an expandable library of software gauging tools.

Contouring controls, digital readouts, encoders, touch probes, and gauging systems will feature on Heidenhain (GB)'s stand – E522. It will be highlighting the relevance of its high technology products to the demanding world of motorsport while the Formula Jedi hillclimb car of Henryk Kozłowski, managing director of CAMS (Cardiff), will be on the stand. CAMS is Heidenhain's authorised distributor for digital readouts (DROs) and related products for South Wales, Gloucestershire and North Somerset.

COMPETITIVE CUTTING

Cutting tool supplier WNT (UK) will be present, on stand 214, and will be highlighting successful autosport related products and applications, for example, M-Sport, set up by rally car driver Malcolm Wilson. Since 1997, the company has been the focus of Ford's World Rally programme, and in addition to building, preparing and managing the BP-Ford Abu Dhabi World Rally team, M-Sport also builds cars for a number of other teams as well as developing kits to convert Ford Fiestas into rally cars for private individuals.

The company previously sub-contracted its machining but 65 per cent of M-Sport's machining requirement is now fulfilled in-house. It has turned to WNT (UK) to supply a variety of critical tools for the production of cylinder blocks, cylinder heads and suspension arms. "In the same way that the rally team relies on the machine shop to deliver parts, we have to be confident that our suppliers can get the tools we need to us on time, every time," says production manager Mark Donaghee. "We have to be confident that when we order a tool it will be delivered and we are confident in WNT's ability to meet that requirement."

Vardex thread milling solutions for horizontal and vertical machining centres as well as CNC turn-mill machines will be found on stand E424. In addition it will



M-Sport needs quality tools delivered on time; WNT (UK) provides a reliable service, the firm says

be highlighting Widia tooling – in particular milling solutions.

Vardex threading solutions on show will include: HTC solid carbide Thriller tool for drilling, chamfering and threadmilling with one tool; all-in-one thread milling and chamfering HeliCool-C – plus the HeliCool-R helical fluted thread mill; TMSD multi-flute thread mill for the production of deep hole threads at highly productive, economical rates; Vardex Multi-flute Indexable Thread Mill (MiTM); and V6, a thread turning insert that features a six-cutting corner system – double that of conventional systems – which therefore has the ability to halve users' tooling costs by enabling all six corners to be applied.

PRIDE OF PLACE

Dormer Tools (E811) will be exhibiting its full range of high performance drilling, milling and threading products, but pride of place will be given to the launch of the brand new solid carbide composite machining drill.

Designed for use in polymer matrix composites (PMCs), also known as fibre reinforced polymers (FRPs), Dormer's new drill works equally well on carbon fibre reinforced polymers (CFRPs) and glass fibre reinforced polymers (GFRPs).

The drill features a unique, patented point design which reduces thrust and

torque requirements. This improves cutting efficiency and significantly reduces splintering and delamination at exit. There is an internal coolant option for wet machining and a diamond coated option to further enhance tool life.

The range is available from 2.38 to 20 mm diameter and with overall lengths up to 310 mm as a 'special order'.

Workholding specialist Roemheld will be showcasing its latest 5-axis workholding innovations on stand E414. On display will be a new range of Hilma 5-axis jaws that have been specifically designed for use in 5-axis machining applications. The range enables single set-up on 5-axis machines and includes step jaws for secure machining on a hold of 3 mm for maximum savings on raw material. Together with the market leading Hilma 5-axis range of vices, designed to grip on just 3 mm, these products have been designed to ensure end users maximise the productivity of their 5-axis systems.

Zero point mounting systems will also be on display. These Stark systems provide the optimum interface for the machine tool. Visitors to the stand will be able to see how these zero point systems incorporate a repeatable location and clamping system that allows for the quick changeover of different workholding devices. Reducing set-up times and

increasing throughput in the majority of production environments.

Delcam (E422) will demonstrate the latest developments for the motorsport industry in its machining and inspection software. The company's software has been adopted by many leading manufacturers of engines and other components, including ATR, Brembo, Cagiva, Crosby Composites, Lotus Engineering, Silverhorse Racing, Wegner Motorsports and ZYTEK Engineering. However, the company still remains best known in the industry as a result of the use of its PowerINSPECT inspection software to check vehicle conformity by both the FIA and NASCAR.

Delcam's award-winning PowerMILL CAM software is the market leader for high speed and 5-axis machining across a wide range of industries. The latest release offers a more comprehensive solution for parts that require a combination of machining strategies, from simple 2D milling to complex 5-axis operations, in a single component. It also provides more control for experienced machinists who know exactly how they wish to machine a particular part.

HIGHLY AUTOMATED CAM

FeatureCAM software is a highly automated, feature-based CAM system that offers faster and easier programming of production machining operations and the latest release will be present. And Delcam's PowerINSPECT version 5 can, among many other things, support 5-axis scanning with Renishaw's REVO probe.

Other companies exhibiting include Hurco Europe (machine tools - E514), Guhring (tooling - E410), Balzers (coating - E824), Bathy International (inspection - E632), Renishaw (probing - E102), ITC (tooling - E518), Rösler UK (deburring/surface finishing - E1316), CGTech (NC program simulation - E744), Lista UK (storage cabinets - E1210), Matsuura Machinery (machine tools - E409), Swiss Precision Tooling (tooling - E318), System Store Solutions (storage cabinets - E8750), and ElectroX Laser Marking Systems (E411). □