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*31st May 2011 Enquiries: Chris Pockett, Group Marketing Services Manager (+44 1453 524133)*

**Renishaw at EMO 2011**

At the [EMO Hannover 2011](http://www.emo-hannover.de/) exhibition taking place in Hannover, Germany, from 19th - 24th September, Renishaw will highlight a range of process control solutions that help tackle the increasing drive to lean manufacturing, from new technologies for pre-process machine calibration, to on-line and off-line post-process measurement. A new range of additive manufacturing technologies and the latest incremental and absolute encoder systems will also be on show.

**Equator™ gauging system**
For visitors to EMO Hannover sourcing off-line measurement systems, Equator™ is a radical new alternative to traditional dedicated gauging, filling a gap in the market never before addressed.

Its 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. It has been developed and proven on the shop-floor in collaboration with industry-leading companies in multiple industries and applications.

Equator has been conceived and developed by working closely with automotive, aerospace and medical gauging users, alongside their manufacturing machines. The result 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.

**AM250 – Renishaw’s laser melting machine**Following its recent purchase of MTT Technologies Ltd, Renishaw will use EMO Hannover to highlight its new range of additive manufacturing technologies. On show will be the AM250 laser melting machine, which utilises a pioneering, additive manufacturing process capable of producing fully dense metal parts direct from 3D CAD, using a high-powered fibre laser. Parts are built from a range of fine metal powders that are fully melted in a tightly controlled atmosphere, in layer thicknesses ranging from 20 to 100 microns.

**QC20-W wireless ballbar**Visitors to EMO 2011 will see that in addition to the conveniences of wireless operation, the [QC20-W telescoping ballbar](http://derby:8073/en/11075.aspx) is the first calibration tool to allow testing in 3 orthogonal planes through a single reference point. A single, simple hardware set up means quicker testing and the ability to produce a representative volumetric measurement of positioning accuracy.

**Fast, automated health check for multi-axis machine tools**[AxiSet™ Check-Up](http://derby:8073/en/11353.aspx) extends Renishaw's market leading range of machine tool testing and calibration systems, with a cost-effective solution for checking the alignment and positioning performance of rotary axes. In just a few minutes, users of five-axis machining centres and multi-tasking mill-turn machines can now identify and report on poor machine alignments and geometry that can cause extended process setting times, as well as non-conforming parts.

**PH20 5-axis probe for CMMs**Visitors to EMO Hannover looking to improve measurement speeds on co-ordinate measuring machines will be able to see demonstrations of the [PH20 five-axis touch-trigger system](http://derby:8073/en/12487.aspx), which increases touch-trigger CMM throughput up to three times, using fast, infinite, rotary positioning and unique "head touch" capability for high-speed point capture with minimal CMM movement. The PH20 uses two-axes of head motion to minimise CMM movement and associated dynamic errors at higher measurement speeds. Its unique "inferred calibration" feature determines head orientation and probe position in a single operation, eliminating the need for calibration at each orientation.

**CMM retrofits and software**Renishaw is now well established in the CMM retrofit market and visitors to EMO Hannover 2011 will see details of its certified coordinate measuring machine (CMM) retrofits which upgrade existing machines to state-of-the-art capabilities – including REVO® five-axis ultra-high-speed scanning. The comprehensive retrofit program applies to all brands of machines. The [Renishaw Retrofit™ service](http://derby:8073/en/10487.aspx) enables manufacturers to raise CMM throughput by factors of four, five and more, increase measurement automation, collect more data points for form measurement, and utilise open source software and future probing technology developments.

**New multi-axis software for machine tool probes**For EMO 2011 visitors considering the inspection of parts on their machine tools, the new [OMV Pro software](http://derby:8073/en/6253.aspx) includes more advanced CMM-type capabilities with an extended range of geometric dimensioning and tolerancing (GD&T) functionality, plus the ability to work with multiple alignments in a single program, an advantage in working with multi-axis machine tools. The software includes simulation capability, an intuitive graphical interface and crystal-clear reporting format that make it accessible to shop-floor staff. OMV Pro's GD&T measurement wizard helps users create standardised report elements based on internationally recognised symbols, allowing operators to compare part measurement results on the machine with those on the manufacturing drawing.

**Absolute optical encoder and 1 nm resolution incremental encoder**Renishaw is a world leader in position encoders and at EMO Hannover the company will highlight its latest products, including [RESOLUTE™, the world's first true absolute encoder](http://derby:8073/en/10852.aspx) which is capable of 27 bit resolution at 36,000 rpm. The fine-pitch system offers excellent dirt immunity, while delivering market-leading resolution of just 1 nanometer at up to 100 m/s, for both linear and angle encoding applications.

Renishaw's range of [TONiC™ incremental optical encoders](http://derby:8073/en/10186.aspx) provide the accuracy of fragile fine-pitch encoders, but in a rugged, simple-to-install package. Advanced optical design and innovative electronics are featured in a compact readhead (35 mm x 13.5 mm x 10 mm L-W-H) for great design/application flexibility and installation even on micro-manufacturing systems. New additions to the TONiC range of linear and rotary encoders include 1 nm and 2 nm resolutions, a dual output encoder interface, and compatibility with Renishaw's Dual Signal Interface (DSi) for high accuracy angle encoding.

For full details of Renishaw's range of metrology products visit [www.renishaw.com](http://derby:8073)

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