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**High productivity machining cell showcases process control at IMTS 2016**

Renishaw, a world leader in precision engineering technologies, will be exhibiting its extensive range of metrology and additive manufacturing equipment at IMTS 2016 which takes place September 12-17 in Chicago, USA. Visitors to Renishaw’s booth at E-5509 will also be able to see its new high productivity machining cell concept. The cell demonstrates how complementary technologies can contribute, throughout the manufacturing process of a CNC machined part, to achieving high levels of productivity and manufacturing capability.

Intelligent machining processes are a critical element in advanced manufacturing technology. Widely publicised trends such as Industry 4.0, Industrial Internet Of Things, cloud computing and data mobility provide manufacturers with an unparalleled opportunity to develop processes which deliver improved productivity and process capability. Improvements in interconnectivity between systems and easy access to automation will also be important in enabling the effective adoption of new processes and technology.

Renishaw will demonstrate how the ability to monitor key process inputs, analyse data and continuously improve manufacturing processes facilitates increased productivity and higher accuracy. Simply measuring the output of a manufacturing process using ‘tailgate’ inspection is not enough and, more often, too late to control all the variability in a manufacturing process. It is critical that checks and measurements are also made before, during and immediately after machining to control both common-cause and special-cause variation.

Automation, measurement and feedback can deliver process control throughout the stages of manufacturing. Optimised processes monitor not only the condition of parts, but also the performance of machines, process trends, interventions and environmental effects. Renishaw’s high productivity machining cell will use the machining of an enclosure housing to show how measurement data and connectivity can enable highly automated accurate manufacturing with low overall labour costs to be realised.

The cell will demonstrate the effects of machine tool performance on the quality of parts produced, and show how manufacturers can monitor and control their machines to ensure they are capable of producing good parts. Renishaw will also demonstrate rapid automated setting of tools and workpiece location using standard user-programmable cycles.

To integrate off-machine gauging the cell uses robot handling and data connectivity. It provides automatic tool offset control and point-of-manufacture quality assurance, keeping the machining process centred and giving confidence in the quality of parts before they progress to the next process. When all machining and finishing processes are complete, CMM inspection is used to verify the final parts meet specifications.

The Renishaw booth will provide a one-stop opportunity to explore the full breadth of technologies required to measure many of the key process variables in CNC machining and other forms of manufacturing. It will also showcase Renishaw’s latest additive manufacturing systems and position encoders.

For further information, visit [www.renishaw.com](http://www.renishaw.com).

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