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**Renishaw’s game-changing contact scanning system at MACH 2014**

Renishaw, the global engineering specialists, will be giving a UK exhibition premiere to its new SPRINT™ high-speed contact scanning system for CNC machine tools at MACH 2014, which takes place from 7 – 11 April at the NEC in Birmingham, UK.

The SPRINT system incorporates a new generation of on-machine scanning technology that will deliver a step-change in the benefits of process control, enabling fast and accurate form and profile data capture from both prismatic and complex 3D components.

Drawing on Renishaw’s partnerships with major businesses in key industrial sectors, the SPRINT machine tool scanning system has been designed to provide a game-changing capability for high value CNC manufacturing processes.

Visitors to hall 5, stand 5730 will see that for blade manufacture, the SPRINT system provides unprecedented capability for blade tip refurbishment and root blending applications. The high-speed measurement of blade sections coupled with high data integrity (even on leading and trailing edges) ensures the indication of true part condition leading to an adaptive machining capability. Automated routines, such as set-up, blade alignment, blade scanning and data collection result in significant accuracy and cycle time improvements over touch-trigger systems.

For multi-task machining applications, the SPRINT machine tool scanning system offers users completely new process control capabilities, including exceptionally repeatable diameter measurement cycles. By employing master part comparison, the SPRINT system becomes an “active” control enabling measure-cut processes to be automated for accurate diameters on large parts. This capability can result in the size of diameters being automatically controlled to within a few microns of tolerance. Measurement functionality such as part run out, machine centreline and circularity, also serves to significantly enhance the manufacturing capability of multi-tasking machine tools.

Additional functionality offered by the SPRINT system provides a rapid health-check of a CNC machine tool’s linear and rotary axes in seconds, making it possible to implement a daily machine monitoring regime with little or no operator involvement.

Each SPRINT application is enabled and supported by a software toolkit package which is dedicated to a specific industrial task, for example, the SPRINT blade toolkit. The toolkits include on-machine data analysis tools which run automatically in-cycle and provide measurement feedback to a CNC machining process.

At the core of the SPRINT system is the revolutionary OSP60 scanning probe. The OSP60 probe has an analogue sensor with 0.1 μm resolution in three dimensions, providing exceptional accuracy and the greatest understanding of workpiece form. The analogue sensor technology in the probe provides a continuous deflection output that is combined with machine position to derive the true location of the part surface. Measuring 1000 true 3D data points per second, the system’s superior analytical capabilities provide unparalleled opportunities for workpiece measurement, inspection, adaptive machining and on-machine process control, whilst optimising machine utilisation and cycle time. This new scanning technology opens up new process control methods not previously possible with other measurement methods.

In parallel to extremely fast and accurate 3D measurement the SPRINT scanning system has also been designed to facilitate automated process control with no requirement for operator intervention.

Incorporating multiple patented technologies, the SPRINT system enables unrivalled high-speed, high-accuracy 3D surface data collection through powerful compensation of the static and dynamic volumetric errors which are often associated with high-speed machine movement.

The SPRINT system is a ground-breaking high-speed, high-accuracy tool with an exceptional range of potential applications, enabling a wide range of measurement and process control methods, reducing scrap and rework, while increasing machine capacity by reducing measurement cycle times.

To find out more about SPRINT, you can visit us at MACH to speak to our engineers, or you can visit our website at www.renishaw.com/sprint.

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