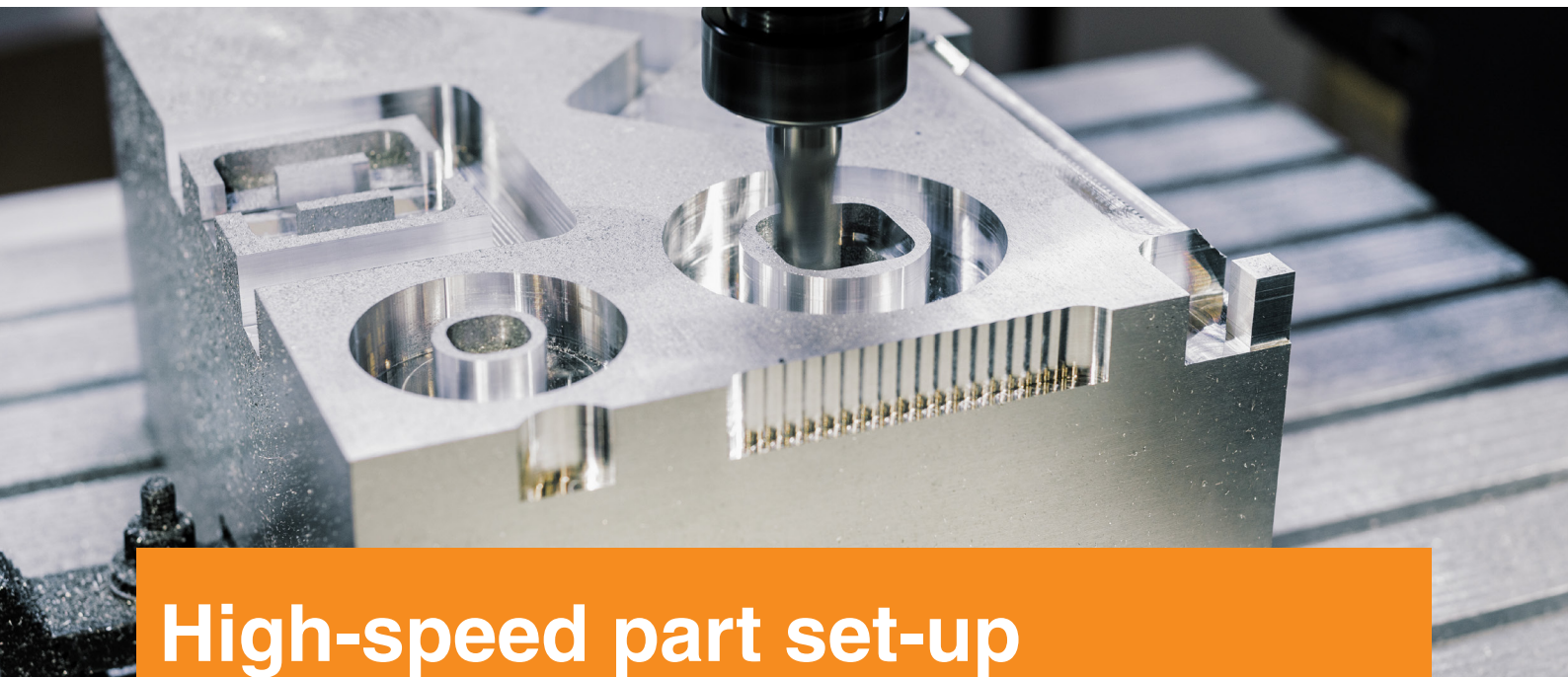




High-speed part set-up and verification

Scanning capability for CNC machine tools

The Renishaw OSP60 on-machine scanning probe with SPRINT™ technology provides a rapid, high-accuracy solution for automated part setting and on-machine component verification. It significantly and consistently outperforms the capabilities of traditional touch-trigger probing solutions, offering reduced cycle times and increased data density. Although probing cycle time savings will always be application dependent, reductions of up to 90% have been achieved.

As a scanning solution, the OSP60 can measure features such as arcs, circles, and planes at exceptionally high speeds. Feedrates of 15 m/min (590 in/min) are possible without compromising accuracy. This allows almost any existing touch-trigger set-up or inspection routine to be replaced with scanning cycles, returning more detailed information – up to 1,000 3D data points per second – in a fraction of the previous cycle time.

Prismatic data collection is key in many applications. For example, automotive engine block refurbishment where probing is typically used to determine the lowest point of corrosion. A tool length update is then applied before a skimming operation is performed across the face of the engine block.

Prismatic inspection routines can be generated using a variety of programming techniques. G-code macro programming, CAD/CAM-style programming (where probe toolpaths are generated through the selection of component solid model geometry), parameterised programming, and complementary Renishaw apps (including Set and Inspect and GoProbe) are all supported. Dependent on the programming method selected, additional functionality such as probe path visualisation, crash detection, on-screen reporting, and graphical representation of real-time feature scanning, is also available.

Measurement results returned can be used for a wide range of purposes including:

- setting or updating work co-ordinate systems and machine variables;
- tool length and geometry updates;
- logic (control) statements to intelligently determine if and how the machining program should proceed;
- simple go/no-go checks;
- quality assurance purposes and report generation.

In addition, the system provides comprehensive geometric data, including circularity, flatness, straightness and material condition.

Associated scanning software features enhanced data handling capacity and analytical capability when compared with traditional software offerings. Functionality includes user-selectable fitting routines – such as least squares and minimum circumscribed – allowing tailored form analysis for individual applications.

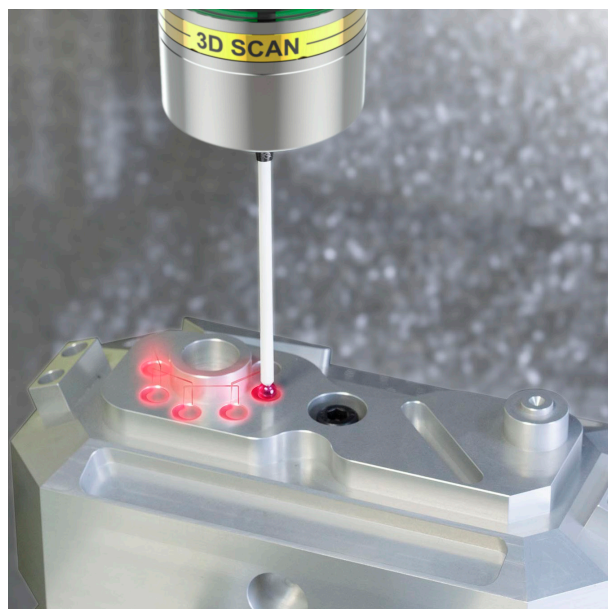
Benefits of on-machine scanning

On-machine scanning is an intelligent, automated, enabling technology that offers numerous operational benefits.

- Significant reductions in part setting, inspection cycle times and scrap.
- Data-dense inspection results. The OSP60 captures up to 1,000 3D data points every second.
- Automated setting and updating of machine parameters.
- Comprehensive feature information including dimensional data, geometric data, positional offset, angular offset and true feature form.
- Perform multiple applications such as part setting, on-machine component verification, surface condition monitoring, and machine performance verification, with a single probe and stylus configuration.
- Absolute confidence in measurement results due to continual communication between the scanning system and machine tool position data.
- Improved manufacturing capability, productivity and process optimisation.
- Complementary software solutions providing application-specific inspection capability.

Adoption of on-machine scanning solutions can introduce game-changing capability for companies in high-value manufacturing sectors. These include aerospace, automotive, consumer electronics, medical, mould and die, and power generation.

The OSP60 is just one of Renishaw's many products that help you to achieve the factory of the future today.



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