Brochure

RENISHAW
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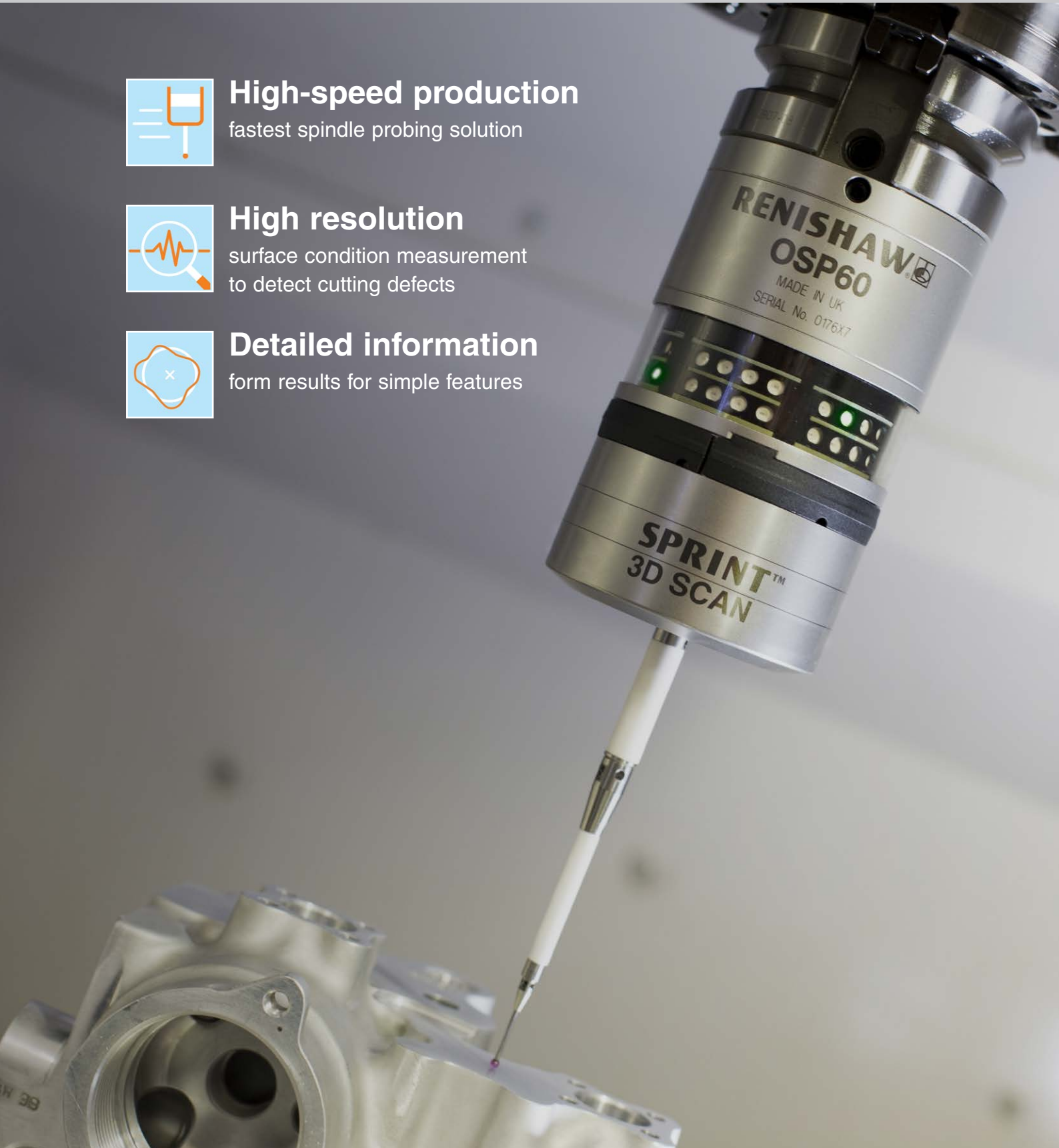
SupaScan – ultra-fast scanning system



High-speed production

fastest spindle probing solution

High resolution

surface condition measurement
to detect cutting defects

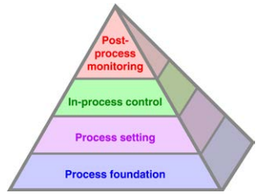
Detailed information

form results for simple features

SupaScan – innovative process control

Tackle process variation at source, and reap the rewards

The higher the degree of human involvement in the manufacturing process, the higher the risk for error. Automated in-process measurement using Renishaw probes can help eliminate the risk. The Renishaw SupaScan system can facilitate the following measures for enhanced management of your production, leading to an increase in your profits.



Process setting

Implement just before manufacturing to ensure processes run smoothly.

- Eliminate costly fixtures and manual setting errors
- Automatically update machine offsets for accurate positioning and alignment
- Introduce new processes quickly and respond to new customer needs
- Set up faster, improve quality and reduce scrap

In-process control

Adapt processes to, and adjust for, inherent variation during machining.

- Compensate for environmental and machine conditions
- Update machine parameters to adjust processes mid-cycle
- Implement adaptive machining processes
- Reduce non-productive time and scrap
- Increase productivity and profits

Post-process monitoring

Obtain information about a process once it is complete, and enhance future production.

- Determine surface condition characteristics
- Rapid, traceable reporting of part conformance to specification
- Identify in-process changes to increase yield or accuracy
- Reduce off-machine inspection time and costs
- Increase confidence in manufacturing process

For more information about the Productive Process Pyramid™ visit www.renishaw.com/processcontrol.

SupaScan – ultra-fast point measurement and scanning system

SupaScan is an easy-to-use machine tool probing system capable of exceptionally fast point measurement and workpiece scanning.

Powered by SPRINT™ technology, SupaScan is the fastest on-machine probing solution for workpiece set-up. Surface condition and form can also be monitored – greatly enhancing your on-machine inspection capability.

SupaScan – compatible with existing touch cycles

When used with SupaScan, the OSP60 probe can perform point measurement faster than any other probing system.

Swap your touch probe for the OSP60 probe and obtain immediate cycle-time advantages

SupaScan is compatible with the Renishaw Inspection Plus macro suite: replace your existing touch probe and speed up your probing cycle without changing your existing programs.

Inspection Plus can be programmed manually using G-code, or via the GoProbe and Set and Inspect programming apps.

For more information about the Renishaw suite of machine tool apps, visit www.renishaw.com/onmachineapps.

SupaScan – reduce measurement cycle time by up to 60%

Rapid point measurement

The SupaScan QuickPoint macro can be used by those looking to get the fastest possible point measurement cycle time.

By using the analogue capability of the OSP60 probe rather than the trigger signal, the macro allows point measurement to be performed up to 60% faster than traditional touch-trigger systems.

Super-fast scanning

SupaScan provides up to 60% inspection cycle time reduction on simple prismatic components when compared with touch-trigger measurement.

Workpiece set-up cycles return accurate measurement results even when performed at up to rapid (G0) feedrates – as fast as it is physically possible for the probe to traverse the surface of the workpiece.

SupaScan – reduce scrap by detecting form and surface condition defects on the machine

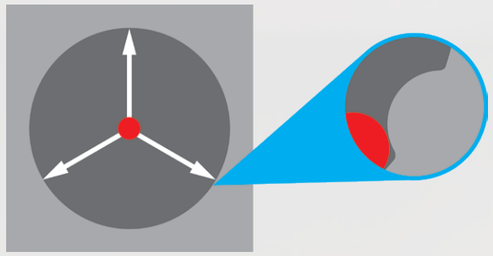
Detect problems with feature form

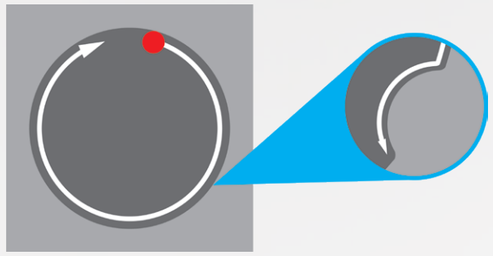
As SupaScan uses the OSP60 analogue scanning probe, the system can identify defects in feature form that would be missed by traditional touch probes.

Use the scanning macro cycles to detect:

- minimum circle diameter;
- maximum circle diameter;
- surface high point;
- surface low point.

Form data can be output to NC variables to control downstream machining processes.





Monitor surface condition

SupaScan can measure common surface defects such as excessive surface waviness, surface peaks, and steps on the surface.

Automating surface condition monitoring allows these issues to be resolved and corrections to be made whilst the components are still in the machine tool; improving measurement reproducibility, reducing rework and scrap.

View live surface traces using the Surface Reporter app

A complementary application – Surface Reporter – provides a real-time, graphical representation of workpiece surface condition. Colour-coding clearly indicates to the operator whether the component surface is in or out of tolerance.

SupaScan – system components

OSI-S interface

An optical interface providing input/output communication with the machine tool.

DPU-1 data processing unit

Processes and stores scanned measurement data. Saves results into machine variables (via the CNC API) for use in downstream processes.

OMM-S receiver

An optical receiver specific to the OSP60 probe.

SupaScan macros

G-code macros specific to SupaScan, generated and configured using software on the DPU-1, for scanning and QuickPoint cycles.

```
( PROBE ON )
G65 P9832
( POSITION )
G55 G43 G0 X-78. Y-64. Z-6. H1
( POINT 1 )
G65 P9811 Y-60
( POINT 2 )
G0 X78. Y-64.
G65 P9811 Y-60.
( POINT 3 )
G0 X84.
G0 Y-58.
G65 P9811 X80.
```

Inspection Plus for OSP60

G-code macros specific to the OSP60 probe for touch cycles.

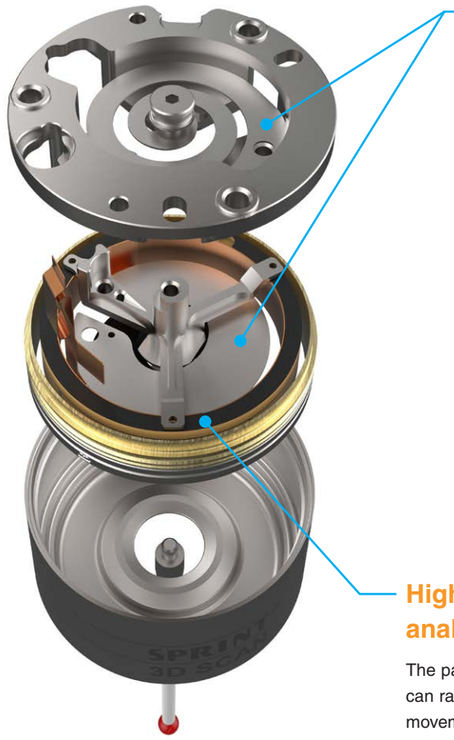
OSP60 probe

An analogue scanning probe for machine tools, capable of scanning and touch measurements.

Surface Reporter app

An app displaying surface condition trace, part pass/fail and W_t value.
Resides on a device running Microsoft® Windows connected to the machine tool.

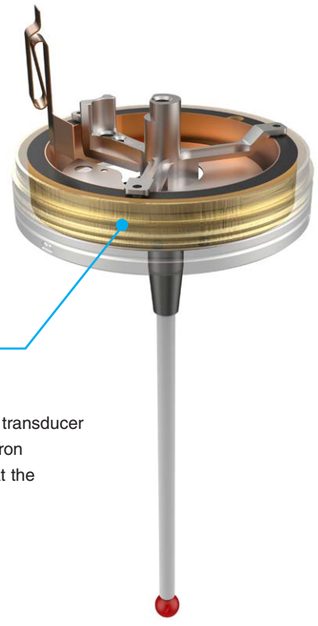
SupaScan – powered by SPRINT technology



Exceptionally responsive design

To achieve highly accurate measurements, the OSP60 probe's stylus tip must precisely follow the surface of the workpiece.

Two parallel planar springs support the probe stylus, allowing it to pivot and move in Z with no mechanical pivot. Stylus movement is undamped – allowing the probe to be exceptionally responsive.



High-resolution analogue sensor

The patented 3D capacitive transducer can rapidly register sub-micron movement in all directions at the stylus tip.

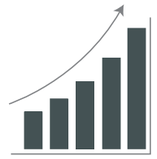
A vast amount of data every second

The OSP60 probe sends 1000 XYZ measurement data points back to the OMM-S receiver every second using a high-speed, noise-resistant optical transmission system.

Advanced fitting algorithms are used to process the data, calculating feature position, size and form.

Probing pays with Renishaw

Optimise your cutting process



Ensure parts are machined "right first time".

Reduce scrap and rework

Set parts up to ten times faster than when using manual methods.

Save time and money

Produce more parts reliably and accurately.

The Renishaw advantage

At Renishaw, we enjoy an excellent reputation for offering strong support to our customers through a network of over 70 service and support offices worldwide.

Technical assistance

We supply technical assistance to all our global customers.

Support and upgrades

We provide a variety of support agreements bespoke to your individual needs.

Training

We offer standard and bespoke training courses to meet your requirements.

Spares and accessories

Buy spares and accessories online or obtain quotes for Renishaw parts 24/7.

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About Renishaw

Renishaw is an established world leader in engineering technologies, with a strong history of innovation in product development and manufacturing. Since its formation in 1973, the company has supplied leading-edge products that increase process productivity, improve product quality and deliver cost-effective automation solutions.

A worldwide network of subsidiary companies and distributors provides exceptional service and support for its customers.

Products include:

- Additive manufacturing and vacuum casting technologies for design, prototyping, and production applications
- Dental CAD/CAM scanning systems and supply of dental structures
- Encoder systems for high-accuracy linear, angle and rotary position feedback
- Fixturing for CMMs (co-ordinate measuring machines) and gauging systems
- Gauging systems for comparative measurement of machined parts
- High-speed laser measurement and surveying systems for use in extreme environments
- Laser and ballbar systems for performance measurement and calibration of machines
- Medical devices for neurosurgical applications
- Probe systems and software for job set-up, tool setting and inspection on CNC machine tools
- Raman spectroscopy systems for non-destructive material analysis
- Sensor systems and software for measurement on CMMs
- Styli for CMM and machine tool probe applications

For worldwide contact details, visit www.renishaw.com/contact

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