



PH20 5-axis touch-trigger system

Fast, accurate 5-axis technology for touch-trigger applications on all sizes of CMM

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The PH20 system transforms co-ordinate measuring machine (CMM) performance with 5-axis measurement capability.

5-axis technology developed for the multi-award winning REVO® measurement system is available for touch-trigger applications on all sizes of CMM.

Improved touch-trigger metrology performance

- **Repeatability** – improved when 'head touch' method is used
- **Accuracy** – improved with feature orientation based calibration, 'head touches' and automatic compensation of pre-travel variation
- **Flexibility** – automatic module changing with tip offset correction

Increased throughput

The PH20 system's unique 'head touches' allow measurement points to be taken by moving only the head rather than the CMM structure. Using only the rapid rotary motion of the head, points can be taken faster, and with improved accuracy and repeatability.

Furthermore, 5-axis motion eliminates time spent indexing the head. These speed increases typically result in a 3-fold improvement in throughput over conventional systems.

Easy access to features at any angle

The PH20 system's infinite positioning capability guarantees optimal feature access, minimising stylus changes.

5-axis simultaneous motion allows larger parts to be measured on the CMM by minimising the space required around the part for head rotation.

PH20 system automatically aligns itself with the part coordinate system, avoiding stylus collisions and the accuracy required fixturing the part.



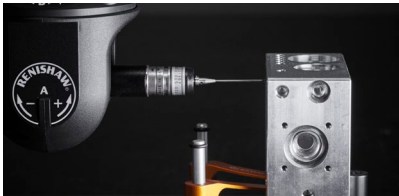
Faster calibration

The 'inferred calibration' technique developed for the PH20 system determines the head orientation and probe position in a single operation, allowing subsequent measurement at any head angle. (Enhanced metrology performance is available if needed by calibrating the probe tip at the feature orientation).

These dramatic time savings accumulate as the calibration process is repeated on a regular basis to comply with quality procedures or following a probe crash.

Available with new CMM or as retrofit to existing equipment

- **Compact design** – suitable for a wide range of CMMs using shank or quill mounting
- **Renishaw CMM controller** – I++DME communication, wide selection of metrology software
- **Index head compatibility** – no requirement to modify existing programs in the majority of cases
- **Integral TP20 probe** – allows re-use of existing equipment
- **Mechanical bearings** – no air supply required



Integral industry standard TP20 probe

Users of the PH20 probe head will immediately have access to the range of proven TP20 probe modules, providing a wide selection of trigger forces, directional sensing options and extensions to meet application requirements*.

The detachable modules provide crash protection and can be automatically changed using the TCR20 change rack.



UCC T5



5-axis touch-trigger motion and head control are provided by the powerful contribution of Renishaw's UCC T5 and SPA3-2 amplifier. The UCC T5 is part of the comprehensive range of UCC controllers.

*Excluding the extended force module

A history of innovation

Renishaw is an established world leader in engineering technologies with a strong history of innovation in product development and manufacturing. Our metrology leadership and our reputation for engineering excellence have put us at the forefront of our markets since 1973.

We design, develop, and deliver solutions and leading-edge products that help manufacturers maximise production output, significantly reduce the time taken to produce and inspect components, and keep their machines running reliably.

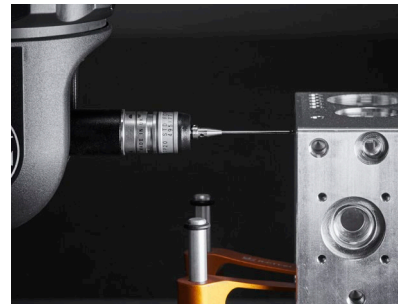
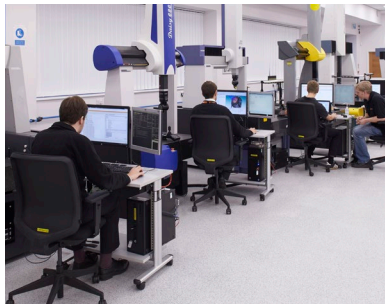
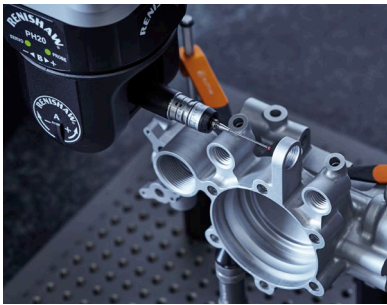
A worldwide network of subsidiary companies and distributors provides exceptional service and support for our customers.

Solutions for CMM users

- Probe systems
- Controllers and interfaces
- Diagnostics and calibration systems
- Position encoders
- Styli
- Metrology fixtures
- Software solutions
- Racks and accessories


Additional smart manufacturing solutions

- Probing and measurement systems for automated machining
- Machine diagnostics and preventative maintenance
- Renishaw Central manufacturing data platform
- 3D scanning on machine tools
- Equator™ shopfloor gauging for process control close to the point of manufacture



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