

# RMP600 high accuracy touch probe



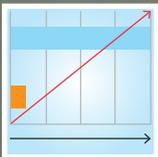
## Unrivalled

3D accuracy and repeatability



## Superior

communication capability



## Outstanding

performance for less scrap and higher profits



# RMP600 – 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 RMP600 radio probe system can facilitate the following measures for enhanced management of your production leading to an **increase in your profits**.

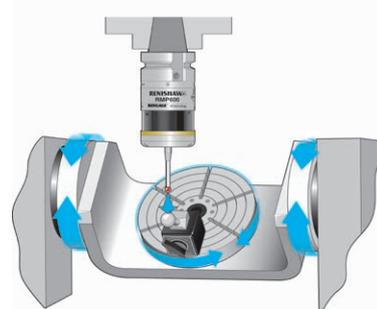


## Process foundation

Optimisation and monitoring of machine tool performance.

RMP600 used in conjunction with Renishaw's machine specific software, **AxiSet™** Check-Up, provides fast, accurate and reliable performance data with powerful yet simple reporting.

- Eliminate machine errors
- Reduce unplanned stoppages
- Produce consistently good parts

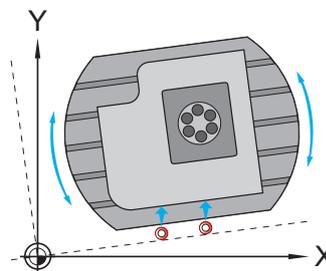


## Process setting

Automated on-machine measurement of component position and alignment.

RMP600 is the most flexible, high precision machine tool radio probe in the world. Unlike conventional probes from other brands, increased stylus lengths can be supported with no significant decrease in probe performance, which means previously difficult job set-ups are more easily accommodated.

- Eliminate costly fixtures and manual setting errors
- Introduce new processes quickly and respond to new customer needs
- Set up faster, improve quality and reduce scrap

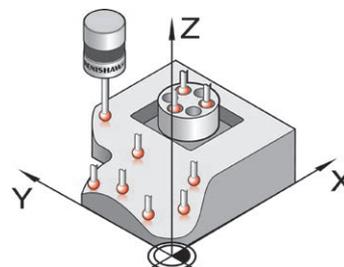


## In-process control

Automated measurement of roughed and finished multi-axis features.

RMP600 submicron 3D performance enables probing of complex geometry not possible with conventional probes from other brands. Adaptive machining can be seamlessly integrated when used in conjunction with Renishaw's Productivity+™.

- Improve process capability and traceability
- Compensate for environmental and machine conditions
- Reduce non-productive time and scrap, increase productivity and profits



## Post-process monitoring

Verification of component conformance prior to removal from machine.

RMP600 used in conjunction with Renishaw's on machine verification software, OMV, enables reliable verification against a CAD model, which means less inspection off-machine and therefore less set-up and rework.

- Reduce off-machine inspection time and costs
- Rapid, traceable reporting of part conformance to specification
- Increase confidence in manufacturing process



# RMP600 – an unrivalled combination of flexibility and accuracy

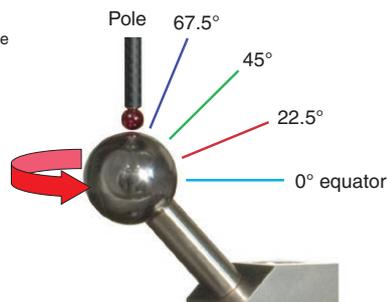
## RENGAGE™ superior 3D performance

Lobing, a characteristic of all probes, is caused by bending of the stylus and movement of the probe mechanism before the probe registers contact with a surface. It is therefore dependent upon:

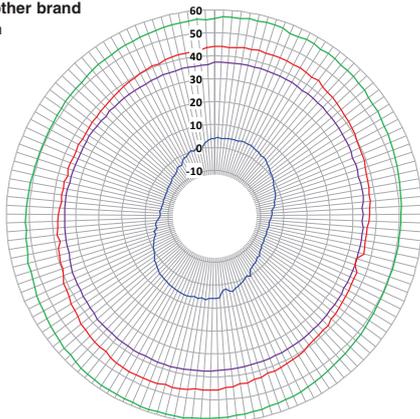
- Length and stiffness of the stylus
- Force required to trigger the probe
- Direction of contact with the surface
- Design of the probe mechanism

Rengage technology as featured in RMP600 was tested for 3D accuracy against products from other brands. The results as illustrated in the error plots below are compelling.

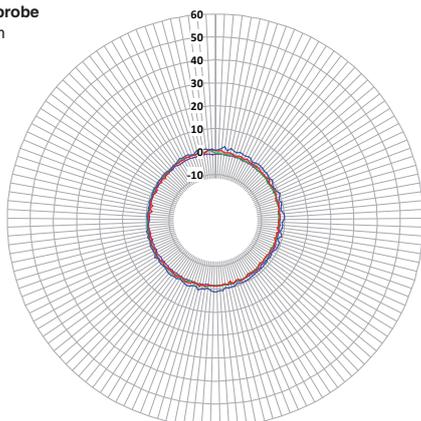
**Test method**  
25 mm calibration sphere probed at 5° increments around XY planes at four different latitudes.



**A typical other brand**  
Scale in  $\mu\text{m}$

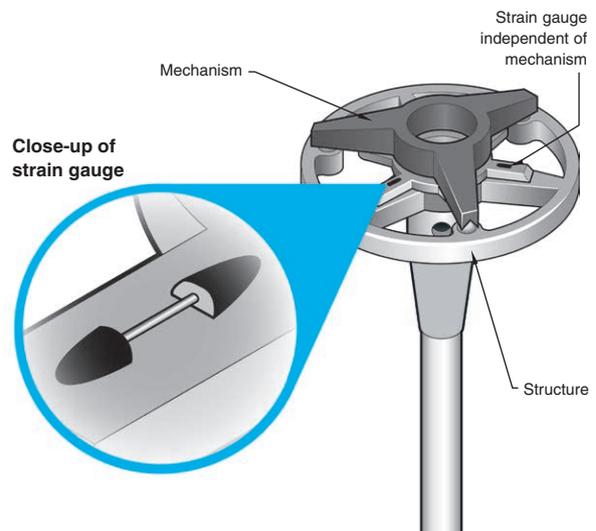


**Rengage probe**  
Scale in  $\mu\text{m}$



## RENGAGE™ technology

Rengage combines proven silicon strain gauge technology and ultra compact electronics to achieve unparalleled performance and capabilities. Suitable for a wide range of machine tool applications and able to address the 3D performance limitations of many alternative probe designs, only Renishaw's MP250, OMP400 and RMP600 probes feature this technology.



Sensing is independent of the probe mechanism which means that probes with Rengage technology provide capabilities not associated with conventional design.

### Advantages

- Unbeatable 3D accuracy and repeatability enables reliable on-machine gauging/measurement
- Improved accuracy with long styli means difficult parts can be probed more easily
- Ultra low trigger force for delicate work helps eliminate surface and form damage
- Compact design enables better access in restricted spaces and small machines
- Robust, even in the harshest environment, means reliable measurement and long service life

### Key benefits

- Reduced set-up and calibration time
- Improved control processes and quality set-up
- Reduced costs

For further details regarding lobing and superior 3D performance please refer to:  
[www.renishaw.com/rengage](http://www.renishaw.com/rengage)

## RMP600 and radio machine interface (RMI or RMI-Q) optimised for reliable and safe operation

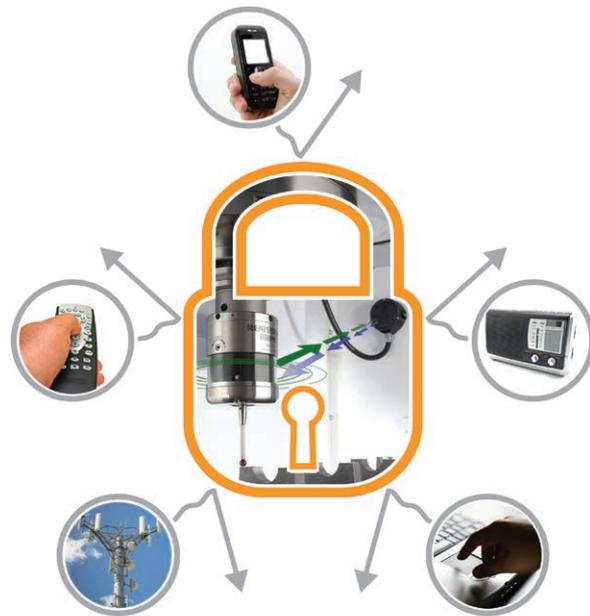
### The benefits of FHSS

In addition to its high performance optical systems Renishaw offers a reliable radio solution for larger machines and/or installations where line-of-sight applications are not possible.

Frequency hopping spread spectrum (FHSS) is a robust and proven technology, that enables devices to jump from channel to channel.

Unlike other protocols which may require manual intervention, Renishaw's products will continue to work as other devices such as Wi-Fi, Bluetooth and microwave enter the same environment.

Operating within the recognised 2.4 GHz frequency band, RMI-Q is compliant with radio regulations in all major markets. It is the preferred choice of many leading machine builders and experienced users.



### Ease of use and reliability

Unique to Renishaw, Trigger Logic™ is a simple method enabling the user to quickly adjust probe mode settings for specific applications.

Constructed from the highest grade materials, Renishaw probes are robust and reliable in the harshest environments including shock, vibration, temperature extremes and even continual liquid immersion.



### Engineered for superior performance

Through the optimisation of transmission and power, RMI-Q partnered with Renishaw's radio transmission probes provides high operational integrity, long battery life and the superior capabilities required in demanding machine shop environments.

- Multiple Renishaw radio probes will reliably co-exist in machine shops of any size
- Combine up to four second generation\* probes and/or tool setters with a single RMI-Q
- Negligible interference from other radio sources ensures consistent and reliable performance
- Does not require a carefully managed radio/wireless environment
- Renishaw probes work with widely available "off-the-shelf" batteries

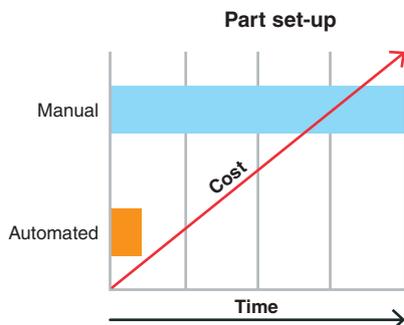
\* Second generation radio probes are easily identified by a 'Q' symbol.

## Probing pays...

Machine tools that are optimised to cut more metal, more reliably and more accurately will quickly **maximise productivity, profits and your competitive edge.**



Automated part setting with the Renishaw RMP600 probe is up to 10 times faster than manual methods, which means immediate and **significant cost savings.**



Scrap and rework reduce productivity and profits. The Renishaw RMP600 probe helps guarantee “right first time” parts which means **reduced waste and increased profits.**

### RMP600 key features

- Compact design with radio transmission for medium to large machining centres and mill-turn centres
- **RENCAGE™** technology — proven and patented
- Trigger Logic™ for quick and easy set-up
- Delivers interference free transmission through the use of frequency hopping spread spectrum (FHSS)
- Globally recognised 2.4 GHz waveband — compliant with radio regulations in all major markets

### ... the Renishaw way

Renishaw, an established world leader in metrology solutions invented the touch-trigger probe in the 1970s.

Decades of customer focus and investment in development, coupled with our own manufacturing experience enables us to provide **innovative** and **exceptional products** that are unmatched for technical excellence and performance.



### Customer comment

*“There’s hardly a part or a die in our shop without a parabolic, compound curved or cone shape. Rapid, precise measurement of machining work on these parts, whilst fixtured on the machine tool is essential to our lean manufacturing. The RMP600 probe provides the “in-process” performance needed for consistent, high-accuracy measurement of small hole diameters, contours and geometric tolerances”.*

**Gary Medlock, Triumph Fabrications**

## About Renishaw

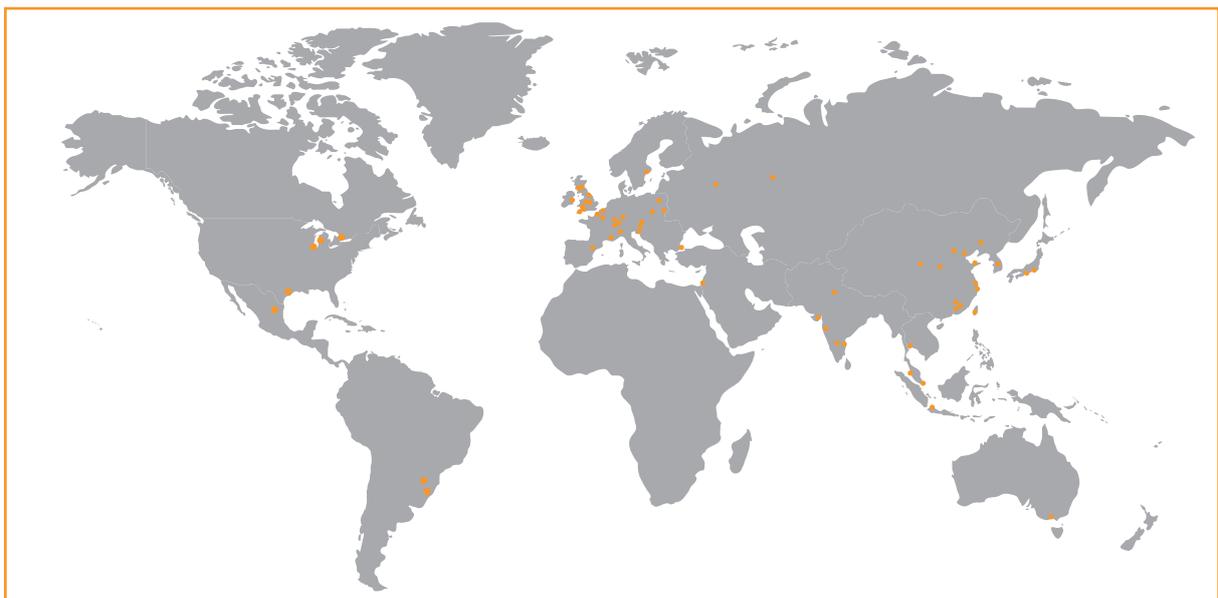
Renishaw is an established world leader in engineering technologies, with a strong history of innovation in product development and manufacturing. Since its formation in 1973, the company has supplied leading-edge products that increase process productivity, improve product quality and deliver cost-effective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

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

### Products include:

- Additive manufacturing, vacuum casting, and injection moulding technologies for design, prototyping, and production applications
- Advanced material technologies with a variety of applications in multiple fields
- Dental CAD/CAM scanning and milling 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, please visit our main website at [www.renishaw.com/contact](http://www.renishaw.com/contact)



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