RENISHAW
apply innovation™

Your partner for innovative manufacturing

End to end manufacturing solutions

Streamline your manufacturing process

Additive manufacturing

Build complex metal components using our new laser melting systems and software

Software and hardware

Solutions to improve your manufacturing

Latest innovations from Renishaw

Renishaw is a global company with core skills in measurement, motion control, spectroscopy, precision machining and additive manufacturing. We develop innovative products that significantly advance our customers operational performance – improving manufacturing efficiencies and raising product quality, with fully traceable production history. Renishaw products serve a range of industries including: aerospace, automotive, defence, oil and gas, electrical, electronic, energy, marine, medical, manufacturing, motion control, and petrochemical.

Our latest innovations include:

SFP2 surface finish probe for the REVO® system

The SFP2 probe increases the surface finish measurement ability of the REVO system, which offers a multi-sensor capability providing touch-trigger, high-speed tactile scanning and non-contact vision measurement on a single CMM.

Combining surface finish measurement and dimensional inspection on the CMM presents unrivalled advantages over traditional inspection methods requiring a separate process. Powered by 5-axis measurement technology, the SFP2's automated surface finish inspection offers significant time savings, reduced part handling and greater return on CMM investment.

The SFP2 system consists of a probe and a range of modules and is automatically interchangeable with all other probe options available for REVO, providing the flexibility to easily select the optimum tool to inspect a wide range of features, all on one CMM platform. Data from multiple sensors is automatically referenced to a common datum.

SFP2 surface finish probe

For more information visit: www.renishaw.com/sfp2

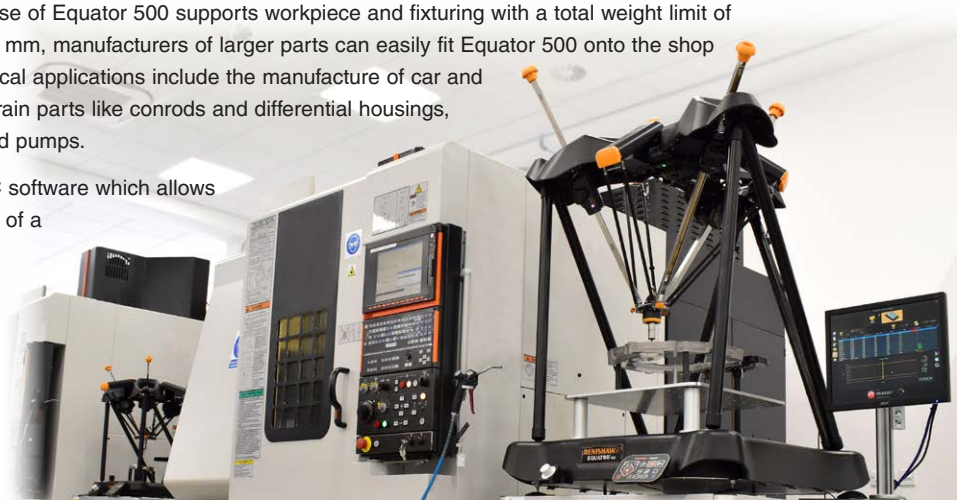
Renishaw Equator™ 500 - intelligent process control for larger parts

Equator gauging systems have helped to improve yield and increase process capabilities of production lines around the world, by providing high accuracy dimensional inspection data next to turning and machining centres, at the point of manufacture. The new larger Equator 500 system now enables the gauging of larger parts, with a working volume of 500 mm in diameter and up to 400 mm in height.

The Equator 500 has a gauging volume of 500 mm diameter in the X/Y plane and 250 mm in Z when used with the SM25-2 scanning module. This can be expanded to 400 mm in Z with the SM25-3 scanning module, which allows styli up to 200 mm in length to reach many more features. The base of Equator 500 supports workpiece and fixturing with a total weight limit of 100 kg. With a footprint of just 920 mm by 924 mm, manufacturers of larger parts can easily fit Equator 500 onto the shop floor alongside their production machines. Typical applications include the manufacture of car and truck transmission and engine casings, drive-train parts like conrods and differential housings, suspension castings, pressed parts, valves and pumps.

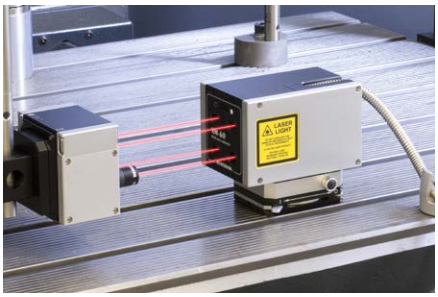
The Equator range is compatible with new IPC software which allows constant monitoring and automatic adjustment of a machining operation, keeping part dimensions close to nominal and well within process control limits, therefore improving part quality and manufacturing capability whilst reducing scrap.

For more information visit: www.renishaw.com/equator500


Equator 500 gauging system for larger parts

XM-60 multi-axis calibrator - measure six degrees of freedom from a single set-up

The XM-60 can measure all six degrees of freedom from a single set-up, in any orientation for linear axes. It offers significant improvement in simplicity and time saving over conventional laser measurement techniques.



XM-60 multi-axis calibrator

The multi-axis calibrator provides a highly accurate laser system that incorporates unique technology with a patented optical roll measurement and fibre optic launch system. The compact launch unit is remote from the laser unit, reducing heat effects at the point of measurement. It can be mounted directly to the machine on its side, upside down and even on its back, which is particularly beneficial in areas with difficult machine access.

The Renishaw XM-60 has been designed to measure machine errors directly, reducing the inaccuracies which can result from complex mathematics used in some alternative measurement techniques.

The performance of each XM-60 multi-axis calibrator is traceable to international standards and every unit is also certified before shipment. This provides users with the confidence that their system will deliver the specified accuracy day-after-day where it counts - in the workplace.

For more information visit: www renishaw.com/xm60

SPRINT™ system with SupaScan

The SPRINT system with SupaScan is an easy-to-use touch-trigger and on-machine scanning measurement system. In addition to providing the fastest available workpiece set-up, system capability also includes surface condition and form monitoring.

SPRINT™ system with SupaScan

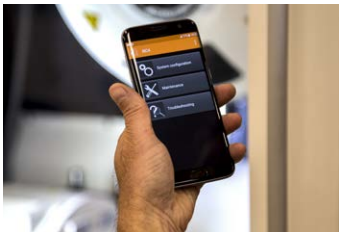
Scanning using the SPRINT™ system with SupaScan provides up to 70% inspection cycle time reduction on simple prismatic components when compared to touch-trigger measurement.

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

For more information visit: www.renishaw.com/supascan

Machine tool apps

We are committed to developing a range of machine tool apps for our customers which make installing, configuring, using and maintaining our systems even easier.



Machine tool apps

Smartphone apps provide information at a user's fingertips in a simple, convenient format. Available globally in a wide range of languages, our free-of-charge apps are perfect for new and less experienced users.

On-machine apps can be seamlessly integrated with a wide range of CNC controls. Apps are installed onto a Microsoft® Windows®-based CNC control or a Windows tablet connected to the control via Ethernet.

With touch interaction and intuitive design, smartphone and on-machine apps provide significant benefits to machine tool probe users.

For more information visit: www.renishaw.com/machinetoolapps

Download on the App Store | GET IT ON Google Play

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Additive manufacturing (AM) for industrial production

RenAM 500Q - ultra high productivity multi-laser AM system

RenAM 500Q is Renishaw's multi-laser AM system. With four high power 500 W lasers, each able to access the whole powder bed surface simultaneously, RenAM 500Q achieves build rates up to four times faster than single laser systems. Its compact galvanometer assembly has been designed and additively manufactured in-house, using aluminium for high thermal conductivity, and includes conformal cooling fluid channels resulting in excellent thermal stability of the optical system. The system features automated powder and waste handling systems that enable consistent process quality, reduce operator intervention time and ensure high standards of system safety. RenAM 500Q features a digital control system and is fully compatible with Renishaw's InfiniAM process planning and monitoring tools.

For more information visit: www.renishaw.com/renam500q

RenAM 500Q multi laser AM system

Solutions Centres

Renishaw Additive Manufacturing Solutions Centres provide a secure development environment in which businesses can build their knowledge and confidence using additive manufacturing (AM) technology. Equipped with the latest AM systems and staffed with knowledgeable engineers, a Solutions Centre offers a fast and accessible way to rapidly deploy this exciting technology into their business. Each Solutions Centre features Incubator Cells – private development facilities containing a Renishaw AM machine, design workstation and all the ancillary equipment needed to design, build and refine a new product design.
As the product and process design matures, Renishaw also provides pre-production capacity where the productivity and capability of the AM process can be established. Renishaw provides support in the form of operators and applications engineers, as well as access to a range of machining, finishing, treatment and metrology processes. In turn this assists customers throughout their investigation and business case development process, helping to optimise design, build confidence in the process, and gain the evidence needed to make investment decisions.

For more information visit: www.renishaw.com/solutioncentres

Additive Manufacturing Solutions Centres

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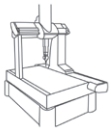
Customer testimonials

Hope Technology

In 2013, Renishaw produced the world's first 3D printed metal bicycle frame for UK company, Empire Cycles. The pedal cranks and other components used to create the fully built bike were produced using more conventional machining processes, at Barnoldswick based Hope Technology. In its high-tech, high-volume production factory, the company employs Renishaw's non-contact tool setting and breakage detection technology, CMM contact scanning probes and modular fixturing to maximise machine up-time and to ensure consistent component precision.

Read the full story: www.renishaw.com/hopetechnology



CMM probes, software and retrofits

Machine tool probing systems

Metrology fixtures

FMC Technologies

For companies operating in the oil and gas equipment-manufacturing sector, recordkeeping and traceability are vital. As part of its company-wide quality protocol, FMC Technologies in Dunfermline, Scotland invests continually in a preventive maintenance programme that employs Renishaw machine tool probes and calibration products such as the QC20-W wireless ballbar, a XL-80 laser measurement system and 11 RMP600 touch probes to check and verify the dimensional accuracy of its CNC machine tools.

Read the full story: www.renishaw.com/fmc

Machine tool probing systems

Machine tool calibration systems

Doncasters Precision Castings

Doncasters Precision Castings – Deritend, is a leading manufacturer of investment cast and machined industrial gas turbine airfoils. Due to its commitment to growth and willingness to invest in continuous improvement it has seen considerable growth in demand for its's machining services. This resulted in further investment in 12 Mazak machine tools equipped with Renishaw RMP600 high-accuracy probes and NC-PerfectPart and NC-Checker software from MSP. Before the addition of the RMP600 and MSP software it would take four hours to set and machine a typical industrial gas turbine nozzle. Now that same part can be probed, machined and checked in under two hours, so Doncasters has increased productivity by 50%.

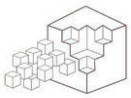
Read the full story:
www.renishaw.com/doncasters

Machine tool probing systems

KOMET® Group

The KOMET® GROUP is one of the world's leading suppliers of precision cutting tools and has supplied innovation to the machining industry for almost 100 years. KOMET is using Renishaw metal additive manufacturing technology to produce new ranges of innovative cutting tools. As well as allowing special cutters to be produced more quickly, the use of additive manufacturing enables more complex shapes to be generated, both for the external shape of the tooling and for the internal cooling channels.

Read the full story: www.renishaw.com/komet



Additive manufacturing systems

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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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