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Reduce cycle times on your manual and automatic CMMs with TP20

Fast stylus changing without re-qualification. Easily retrofitted to existing TP2 or TP6 installations.

Use on manual or automated CMMs. Now the accepted industry standard for measuring performance.

Automatic and manual stylus changing, with MCR20 and MSR1 racks.

Renishaw's TP20 modular probe system allows you to choose the optimal stylus arrangement for accuracy… whatever your measurement task

TP20 probe system

The TP20 is a touch-trigger probe that gives its users the ability to change stylus configurations manually or automatically, without re-qualification.

The TP20 is now widely accepted as the industry standard replacement for the TP2-5W probe, offering a range of new benefits. It can be easily retrofitted to manual and DCC co-ordinate measuring machines (CMMs).

The range of modules

A range of seven, application specific, stylus modules is available:

The **low force module (LF)** for high accuracy with short styli and delicate materials.

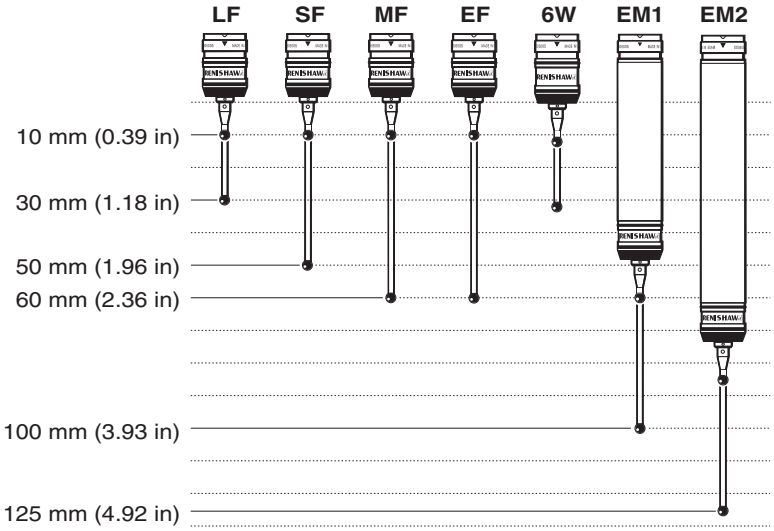
The **standard force module (SF)** is suitable for most applications.

The **medium force module (MF)** is suitable for vibration resistance when using longer styli.

The **extended force module (EF)** is suitable for very large stylus arrangements.

The **6-way module (6W)** for measuring grooves and undercuts, has significantly improved metrology performance over the TP2-6 way.

Two extension modules (EM1 and EM2) improve reach and offer better metrology performance than using equivalent length styli.



TP20 probe body

The TP20 probe comprises two parts – a probe body and a detachable stylus module which contains the kinematic touch sensor and carries the stylus assembly.

The probe body has a standard M8 screw connector, which enables direct fitting to all CMMs with a Renishaw PH1, PH6, MH8 or PH10T probe head. Fitment to PH10M/PH10MQ and MIH probe heads is simply achieved using a Renishaw PAA adaptor.

The probe body also contains a magnetic proximity switch to inhibit triggering of the probe during automatic module changing with the MCR20 module change rack.

TP20 NI probe body

The TP20 NI probe body differs from the TP20 body in that it is not affected by magnetic fields. However, the probe trigger must be inhibited through the software during change cycles using the MCR20.

TP20 stylus modules

The stylus module is connected to the probe body by a highly repeatable magnetic coupling. This enables the exchange of modules without the need to re-qualify the stylus tips, giving significant time savings for inspection routines. The kinematic coupling between the probe body and module affords some crash protection in the X and Y axes.

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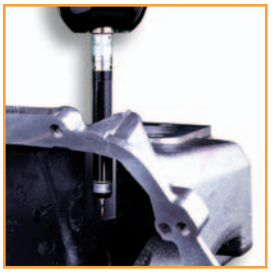

Probe extension modules

The EM1/EM2 extension modules increase probe reach, allowing the inspection of features with restricted access. The extensions available are 70 mm (EM1) or 95 mm (EM2). The standard trigger force module is integral to both EM1 and EM2. The use of an extension module gives improved metrology performance compared to using the equivalent length of stylus with a standard length module. The ability to change modules without re-qualification and to automate the changing process (using the MCR20 rack), offers advantages over the use of existing probe extension bars, such as the Renishaw PEL1.

Fast, repeatable stylus changing

The MCR20 module change rack

The optional MCR20 module changing rack has the capability of storing up to six probe modules for automatic changing under measurement program control. Probe triggers are inhibited during module changing by a proximity switch system when using a TP20 probe body. When using a TP20 NI probe body the probe trigger must be inhibited through the software. Therefore, the MCR20 rack is passive and does not require an electrical connection to the CMM. The MCR20 is designed to securely hold the stored probe modules and to protect them from contaminants that may be present in the working environment.

The MSR1 module storage rack

The MSR1 can store up to 6 probe modules for manual stylus changing and safe keeping when not in use. Pre-qualified stylus arrangements on probe modules can be selected and switched when needed.

TP20 system's key benefits

The TP20 system extends the availability of fast stylus changing to users of manual CMMs. For users of automated CMMs, software available from the machines' suppliers facilitates automatic stylus changing in most TP2 or TP6 applications.

- Reduced cycle times achieved through fast stylus changing without re-qualification.
- Optimised probe and stylus performance with seven specialised probe modules.
- Easily retrofitted to all Renishaw standard probe heads.
- Compatible with existing touch-trigger probe interfaces.
- Fitting to Renishaw's autojoint probe heads with PAA adaptors/ extensions.
- Industry standard metrology performance.
- Provides X and Y crash protection.
- Compatibility with Renishaw's SP25M scanning probe system.

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Renishaw applies innovation to provide solutions to your problems

Renishaw is an established world leader in metrology, providing high performance, cost-effective solutions for measurement and increased productivity.

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

Renishaw designs, develops and manufactures products which conform to ISO 9001 standards. Renishaw provides innovative and cost-effective solutions using the following products:

- Probe systems for inspection on CMMs (co-ordinate measuring machines).
- Systems for job set-up, toolsetting and inspection on machine tools.
- Scanning and digitising systems.
- Laser and automated ballbar systems for performance measurement and calibration of machines.
- Encoder systems for high accuracy position feedback.
- Spectroscopy systems for non-destructive material analysis in laboratory and process environments.

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Printed in England 0305
US hybrid part no. H-1000-3226-04-A

Printed in England 0305 Part no. H-1000-3220-04-A