PRODUCT BROCHURE

HEXAGON
METROLOGY

PROFILER R

Tactile sensor for roughness measurement on Leitz CMMs

PROFILER R

COMPLETE YOUR CMM
WITH ROUGHNESS MEASUREMENTS

“Total Inspection” is an increasingly important concept in metrology today. The goal is to have complete control of all relevant parameters of a workpiece in order to ensure full functionality within the lifecycle.

The PROFILER R miniature roughness sensor supplements the existing Hexagon Metrology sensor range. In addition to all standard measurements and evaluations of a CMM, it allows easy and quick measurements in the same setup. Transport and changeover times are reduced, enabling a much more efficient process for quality assurance.

In the past, roughness was typically measured using manual roughness measurement devices. The results were heavily dependent on the awareness and skills of the machine operators. The PROFILER R is the solution for this problem, with the fully automatic CNC integration reducing the potential for mishandling.

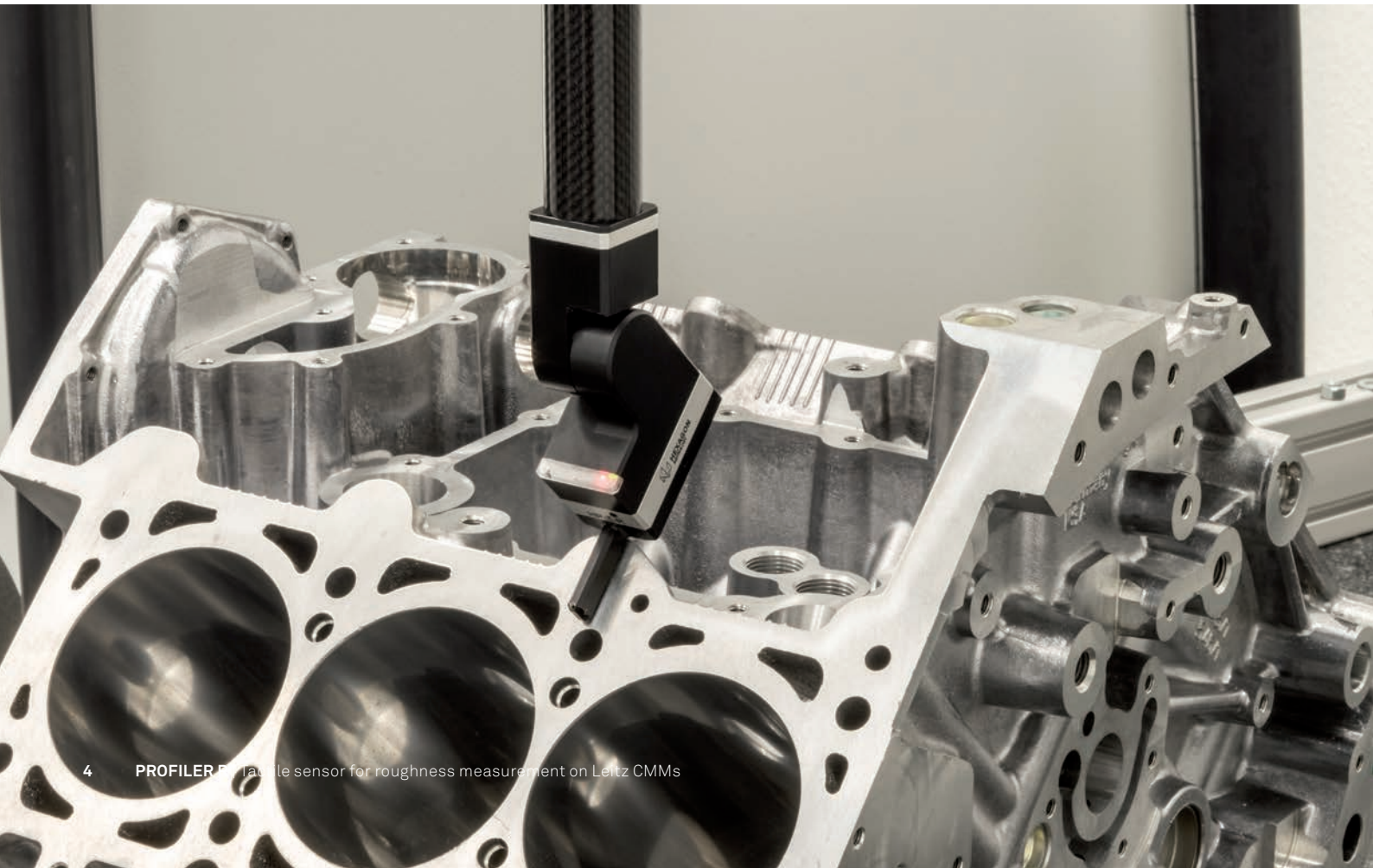
> Save time by avoiding lengthy manual setup and changeover processes.”

THE MEASUREMENT SOLUTION FOR **PROFILE AND SURFACE ROUGHNESS ON CMMs**

The texture of the workpiece surface is more important than ever in quality assurance. Using the PROFILER R roughness sensor, this can be measured without reclamping the workpiece on your local CMM. The PROFILER R supports all common roughness parameters according to DIN EN ISO 4287 and DIN EN ISO 13565, for example the arithmetical mean roughness value (Ra), average roughness profile height (Rz) or the mean width of profile elements (RSm).

Features and benefits

- Established measurement process
- All results shown in one report
- User interface in QUINDOS
- Analysis conforming to DIN EN ISO
- Powered by the probe head
- Styli easily interchangeable
- Sensor can be exchanged automatically
- Integrated rotary / pivoting axis (360° / 180°)
- Reduced transport and setup times
- Measurement length of up to 15 mm
- Extremely high positioning accuracy
- Further roughness measurement devices redundant - saving space and investment costs
- Wireless data transmission increases flexibility
- Extremely small measurement cycle

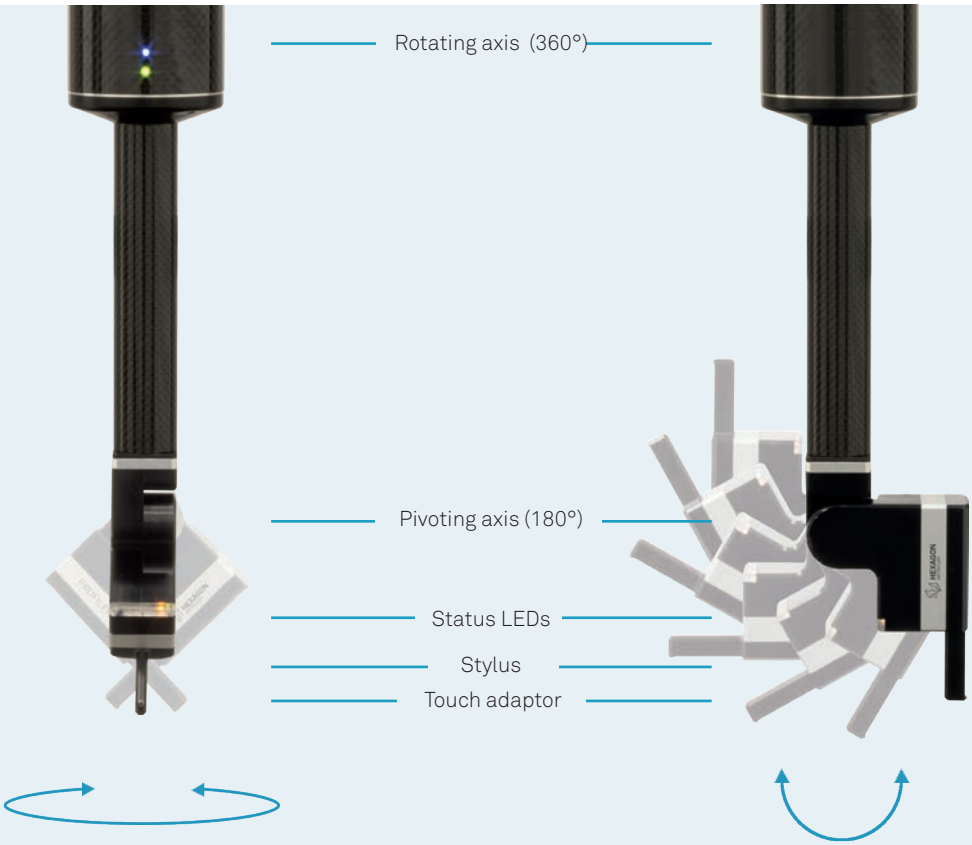


OFFERING THE
BEST POSSIBLE POSITIONING

The PROFILER R can be automatically loaded into the scanning sensor HP-S-X5 HD and the multisensor probe heads Leitz LSP-S2 and LSP-S4. This integration into the probe head enables an extremely high positioning accuracy and the probing is controlled. Even hard to reach areas can be measured without reclamping the workpiece.

The sensor can be rotated through 360° and pivoted by 180°. This makes it easy to adjust to the workpiece conditions and provides maximum flexibility and accessibility.

The complete measurement process takes place within the compact sensor, enabling an extremely short process time. This means a distortion of the measuring data is impossible. During the measurement, the CMM stays absolutely still, avoiding any vibrations or disturbances.

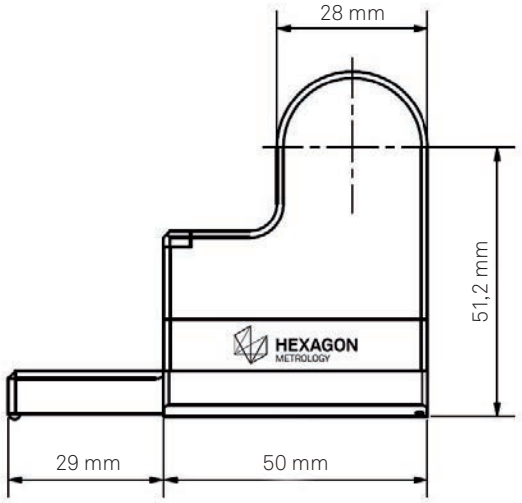


EXTEND YOUR LEITZ CMM **WITH THE PROFILER R**

TECHNICAL DATA

Measuring principle	Stylus instrument (reference plane)
Measuring section	Max. 15 mm
Stylus radius	2 µm (5 µm available on request)
Stylus elbow	90°
Filter	Gauss*
Integrated axis	Rotating: 360° Pivoting: 180°
Weight	630 g
Software	QUINDOS
Evaluation standards	According to ISO 4287 / 13565
Roughness parameters (Stylus radius 2 µm)	Rz, Rt: Up to 10 µm Ra: 50nm to 2 µm

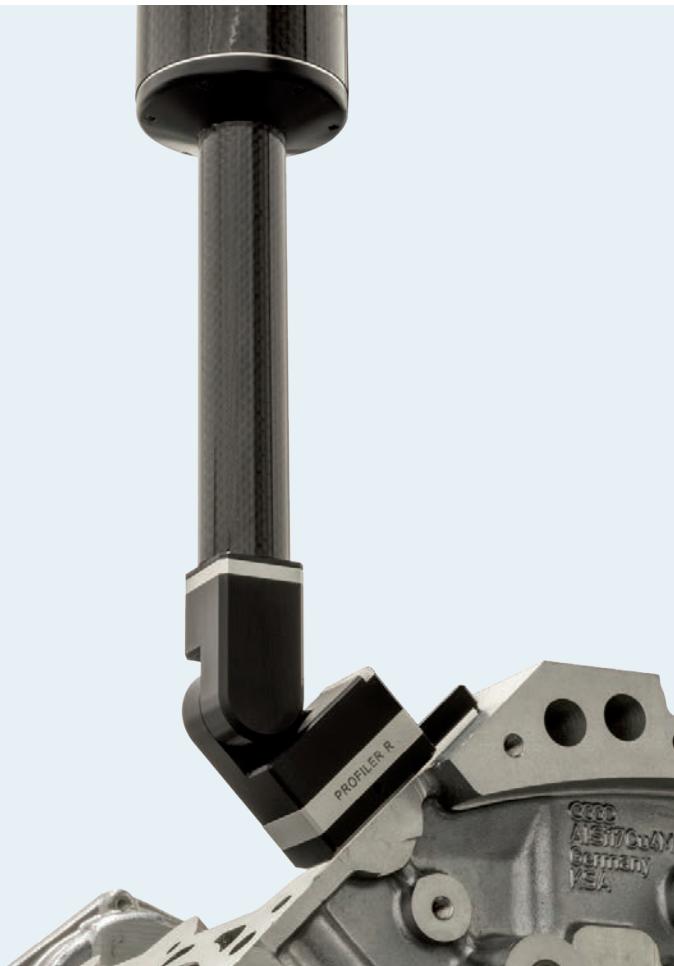
* Others available on request



Measurement process

With the help of its built-in rotary and pivoting axes, the sensor can be perfectly positioned for measurements. After the support adaptor touches the workpiece, the measuring stylus is extended. It moves along the surface, collecting the measurement data, whereas PROFILER R remains still throughout the whole measurement.

The surface data gathered is sent to the CMM controller and automatically analysed and illustrated in QUINDOS.



SYSTEM INTEGRATION
FOR MAXIMUM COMPATIBILITY

The PROFILER R sensor is optimised for use with Leitz ultra-high accuracy CMMs.
The tactile sensor can be loaded into the multisensor probe heads HP-S-X5HD, LSP-S2 and LSP-S4 on Leitz PMM-C and Leitz Reference line machines.

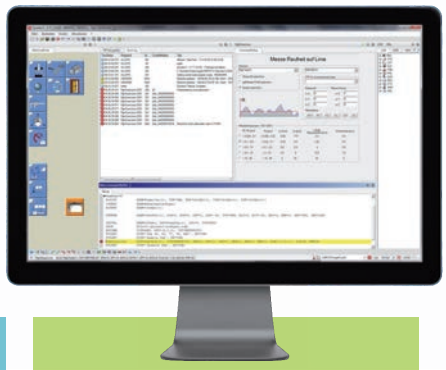
HP-S-X5 HD

The HP-S-X5 is a centre-mounted, highly-accurate and robust probe head. It features a sophisticated anti-collision system and can accept probe extensions up to 800 mm in length and 650 g in weight.

LSP-S2 I LSP-S4

The LSP-S2 and LSP-S4 probe heads allow the measurement of features deep inside a workpiece. The heads can carry styli configurations up to 1000 g in weight and up to 800 mm in length.

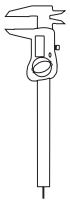
The extremely low Single Stylus Form Error PFTU of the probe heads enables the measurement of complex geometries in very tight tolerances.



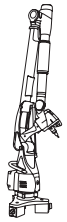
QUINDOS SOFTWARE

The “Roughness“ option enables the evaluation and analysis of all roughness parameters established in QUINDOS.

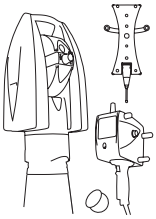
The data can be illustrated on a measuring report.



PRECISION MEASURING INSTRUMENTS



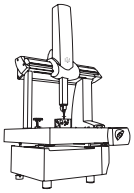
PORTABLE MEASURING ARMS



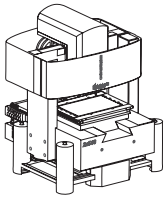
LASER TRACKERS & STATIONS

WHITE LIGHT SCANNERS

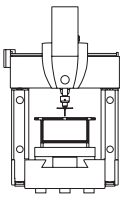
SENSORS



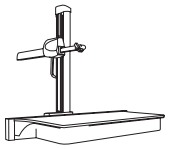
BRIDGE CMMS



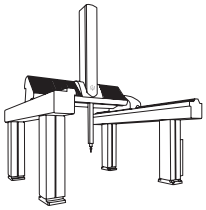
MULTISENSOR & OPTICAL SYSTEMS



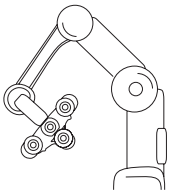
ULTRA HIGH ACCURACY CMMS



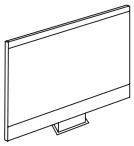
HORIZONTAL ARM CMMS



GANTRY CMMS



AUTOMATED APPLICATIONS



SOFTWARE SOLUTIONS

HEXAGON
METROLOGY

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