

PRODUCT INFORMATION SHEET

Non-Contact Femoral Knee Surface Profile Inspection Gauge

Email: tms.sales@torus-group.com
www.torus-group.com



Torus Measurement Systems Surface Profiler measurement system utilizes state of the art Confocal technology for rapid non-contact inspection of Surface Profiles on Orthopedic Femoral Knees, eliminating the need for handheld and subjective profile gauges and comparators. The system is designed for operational use on the shop-floor therefore giving the machine tool operator or quality control personnel a quick and repeatable measurement without having to go to the inspection lab.

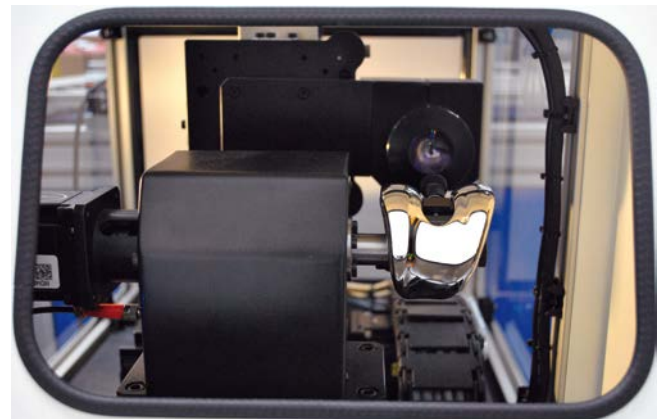
Measurement Principle

Polychromatic white light is focused onto the target surface by a multi lens optical system. The lenses are arranged so that the white light is dispersed into monochromatic light by controlled chromatic aberration. A specific distance to the target is assigned to each wavelength by a factory calibration. Only the wavelength which is exactly focused on the target is used for measurement. This light reflected from the surface is passed through a confocal aperture onto a spectrometer which detects and processes the spectral changes.

This unique measuring principle enables displacements and distances to be measured with high precision and extreme spatial resolution. Cast, Linished and Highly Polished surfaces can be measured without the requirement for surface preparation or machine adjustment.

Since the emitter and receiver are arranged in a single axis, shadowing is avoided, in contrast to conventional triangulation sensors.

The 4-axis motion control system is driven by high accuracy micro-stepping motors giving positional feedback, providing high resolution and high speed with stability and reliability.



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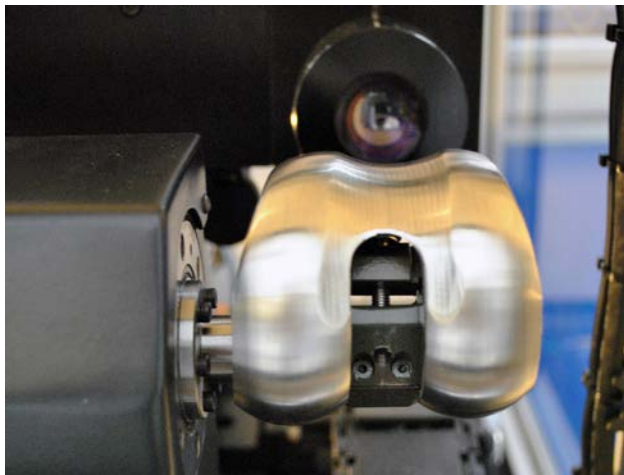
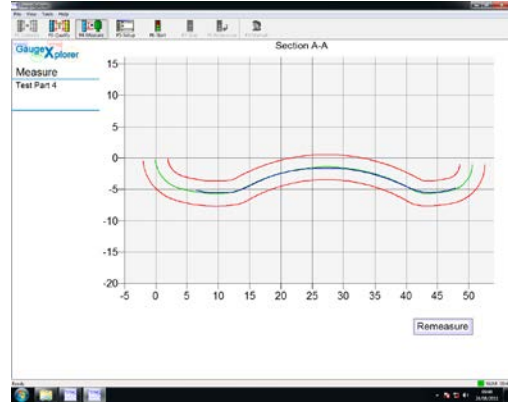
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Software

The data collected from the confocal sensor and the optical encoders is processed by Torus Measurement Systems dedicated metrology software GaugeXplorer which presents the data in graphic, numerical and mimic forms for easy operator interpretation.

GaugeXplorer, operating on Windows 7 Platform, is specifically designed for ease of use, from operator set-up, to new component program generation.



Key Features :

- Non-contact confocal measurement
- Scanning of specular and diffuse surfaces to CAD
- Powerful Measurement and Statistical Software
- Rapid Data Collection and Processing
- Graphical / Numeric Display
- Shop-floor hardened where climate control is operational
- Typical Cycle Time for 5 sectional profiles = 40sec

Technical Measurement Specification:

Component Range
Customer Specific

Features Measured

Sectional Surface Profiles

System Resolution

< = 0.0025mm / 0.0001"

Accuracy

Form +/- 0.025mm

Geometric +/- 0.010mm

Additional Features can be tailored to suit metrology requirements

Using proven High Precision Technology, Certified Calibration Masters from our UKAS accredited Laboratory you can be assured of accurate, repeatable and traceable performance.



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