AMETEK®
ULTRA PRECISION TECHNOLOGIES

TAYLOR HOBSON®

Centre of Excellence

AMECARE
PERFORMANCE SERVICES

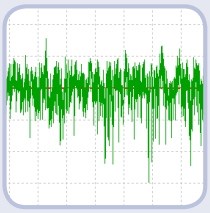
Calibration & Contract Measurement Services

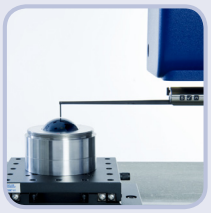
Expand your capabilities without capital investment

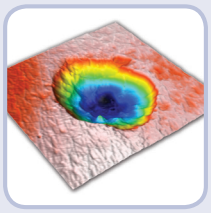
Contracted inspection services from Taylor Hobson is an excellent way to maintain quality where capital investment may not available for new equipment.

The Measurement of Roundness, Dimension and Surface Roughness is of critical importance in both the manufacture and the function of a wide variety of engineered components.

Customers may send in golden parts, manufactured components, prototypes or component failures for measurement.







Unbeatable benefits

Whatever their individual reasons for using our inspection services, all of our customers benefit in many similar ways.

- ☑ Access to expert metrologists
- ☑ Authoritative, unbiased reports
- ☑ Cost effectiveness

For more details please contact:

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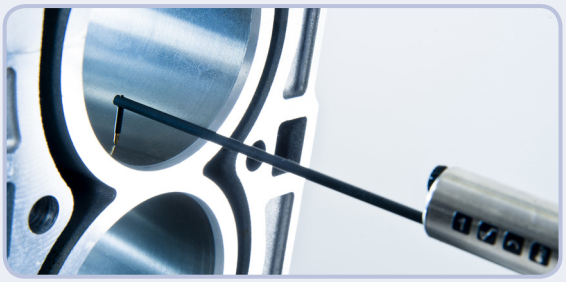
Batch production inspection

Many of our customers are fully capable of measuring production parts with their own resources; they turn to us for assistance in special circumstances.

- **Equipment breakdown**
- **Short-term production increase**
- **100% inspection of parts due to end user audit or rejection**

Other users of our measurement services are unable or have chosen not to invest in the instruments having a one off inspection requirement.



UKAS Test Measurements - certified, traceable laboratory inspection

Our world renowned calibration laboratory is also authorised to perform Test Measurements to UKAS standards that are fully supported by UKAS Traceable Certification.

The Taylor Hobson UKAS laboratory can provide measurement using the same instrumentation and metrology experts that are used to certify calibration standards and artifacts.

UKAS CALIBRATION 0026 | UKAS TESTING 2624 | UL REGISTERED FIRM TAYLOR HOBSON A8248 ISO9001 | UKAS QUALITY MANAGEMENT 62

With an AMECARE Support Agreement you are entitled to discounts on all of our Measurement Services and Training Courses

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Roundness

The glass hemisphere is a high precision artifact used to both calibrate and evaluate the performance of roundness measuring instruments.

By means of error separation techniques, the UKAS laboratory is able to calibrate the hemisphere to a resolution of 1 nanometer, with a measurement uncertainty of ±5.0 nanometers.

Our calibration certificate includes a polar plot of the profile of the measured plane, which allows users to accurately ascertain any errors in their own system.

Measurement	Best capability
Roundness of standards and workpieces	±0.005 µm
Cylindrical magnification test specimens (flick standards)	±0.10 µm
Straightness, parallelism	Dependent on precision of item
Diameter and length	±0.5 µm
Roundness instruments	Dependent on quality and performance

Surface texture

Our UKAS laboratory is the only laboratory able to measure all traceable surface finish artifacts inline with ISO 5436-2001 which includes step height , spacing , profile and roughness measurement standards.

The laboratory holds the lowest uncertainties outside the National Physical Laboratory for the calibration of roundness and surface texture.

Tungsten carbide or ceramic spherical artifacts are used to calibrate the Form Talysurf Series range of instruments and CMMs. We calibrate the radius, roundness and surface texture of each spherical artifact to provide a high precision multi-purpose standard.

Measurement	Best capability
Roughness standards (Ra)[1]	±(2% + 0.004 µm)
Workpiece or component surface texture (Ra)[1]	±3% of measured value per track
Radius (derived)	±0.4 µm

Straightness

Assessment of the accuracy of a straightness and parallelism measuring instrument can be achieved at any time by measuring a precision cylinder. The result can then be compared with the calibrated profile on the UKAS Certificate.

1. Other parameters available on request
2. Best capability is dependent on quality, sensitivity and overall performance of the instrument.
3. Uncertainties for on-site procedures are dependent on the site environment which is continually monitored for the duration of the calibration and also during the stabilization period.

Diameter and length

Our UKAS laboratory is currently accreditated for the calibration of spheres, plug and ring gauges. Temperature corrected measuring techniques are used in conjunction with sophisticated control software to achieve diametrical uncertainties of ±0.5µm.

Measurement	Best capability
Spheres (diameter)	±0.5 µm
Spheres (radius)	±0.4 µm
Plug gauges	±0.5 µm
Ring gauges	±0.8 µm

Autocollimators

A small angle generator (sine bar) is normally used with traceable gauge blocks to calibrate autocollimators. Both progressive and periodic errors are measured and certified.

Clinometers and levels

Block levels, clinometers, and electronic levels are calibrated by use of lever techniques.

Polygons and prisms

The basic methods employed for angle measurement are either the accurate division of a circle, by using a high precision index table, or the generation of a known angle by means of a precision sine bar.

Telescopes

Micro Alignment Telescope displacement errors and line of sight errors are assessed by viewing into fixed and variable focus collimators.

Measurement	Best capability
Angle gauges	±1.0 arc second
Alignment telescopes, targets & collimators	Replace with ±2.0 seconds (see note 2)
Autocollimators	±0.2 seconds
Clinometers, spirit and electronic levles	Replace with ±1.0 second (see note 2)
Prisms, polygons & optical squares	±0.6 arc second
Rotary tables	±1.0 arc second

On-site calibration

Our UKAS Accreditation also allows our Approved Operators to undertake calibration and/or verification of measuring instruments and machine tools on customer's premises.

Measurement	Best capability
Surface Texture	±3% (see note 3)
Angle	±1.0 arc seconds (see note 3)
Roundness	±0.05µm (see note 3)

For the full shedule visit www.ukas.com