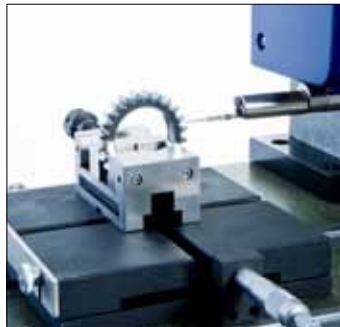




Talysurf® i-Series

A low noise high resolution instrument for roughness and waviness measurement



The new Talysurf® i-Series

A low noise high resolution instrument for roughness and waviness measurement

Ideally suited for automotive, bearings, gears and many other applications

The Talysurf i-Series is a simple to operate high accuracy instrument capable of roughness and waviness measurement. The systems low noise axes and high resolution gauge ensures measurement integrity.

Reproducible measurement results

Decades of experience, ultra precision machining expertise and FEA optimized design combine to provide low noise and near flawless mechanical execution of the measuring axes. Further enhancement via the use of traceable standards and exclusive algorithms effectively eliminates instrument influence from the measurement results.



Gauge

Gauge range 1000 μm

Resolution down to 0.16 nm



Roughness

Noise
Less than 8nm Rq



Form

Form optimization
For flat and curved profiles



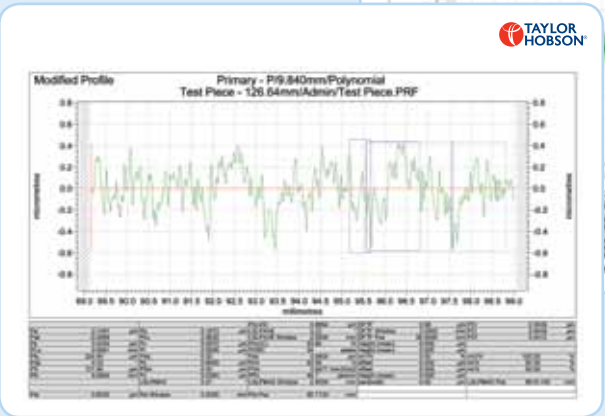
Implementation

Easy to learn
Simple to operate

Unparalleled measurement capability

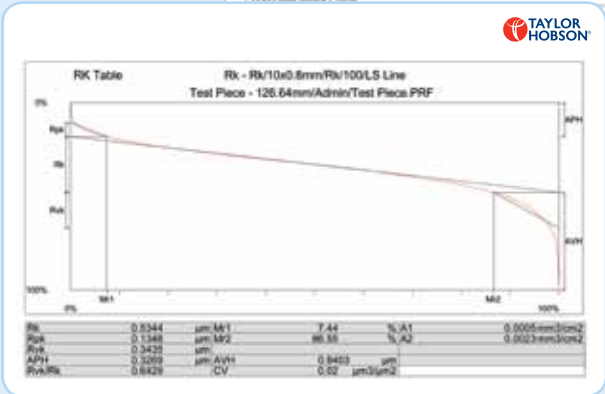
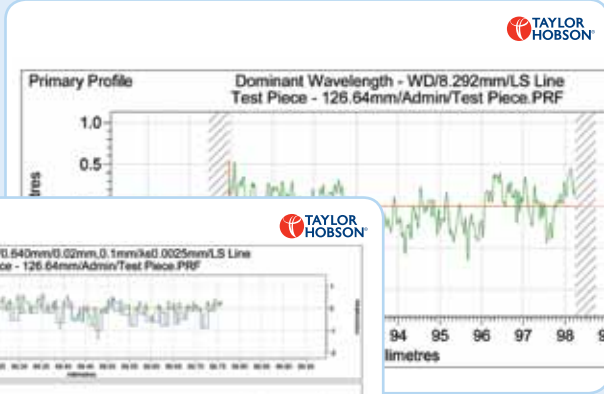
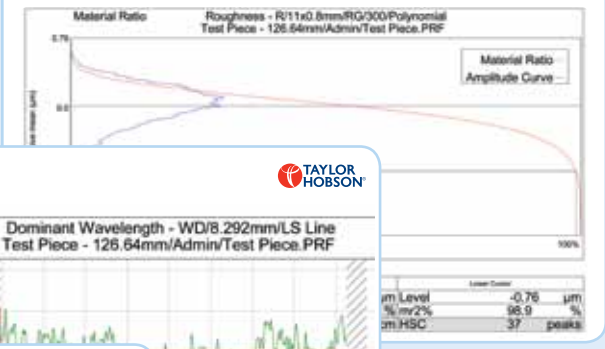
Surface detail

High resolution gauges with low noise enables roughness and waviness measurement.



Parameter detail

Additional analyses include R_k , R&W, dominant wavelength and more...

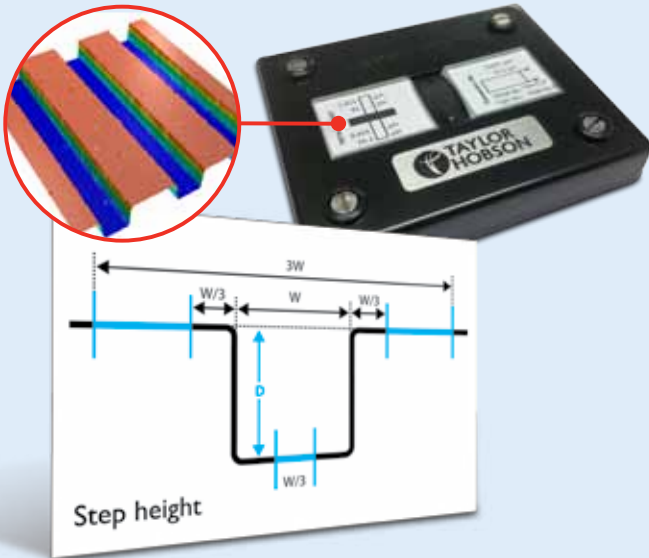


Versatile and easy to use...

Utilizing powerful control and analysis software the measurement of roughness and waviness have never been easier

Gauge calibration

The Talysurf i-Series uses a fast and simple process to calibrate the gain of the system. Utilizing a traceable step height standard calibrated to international standards, the automated routine calibrates the system without operator influence or manual intervention.



Q-Link production interface

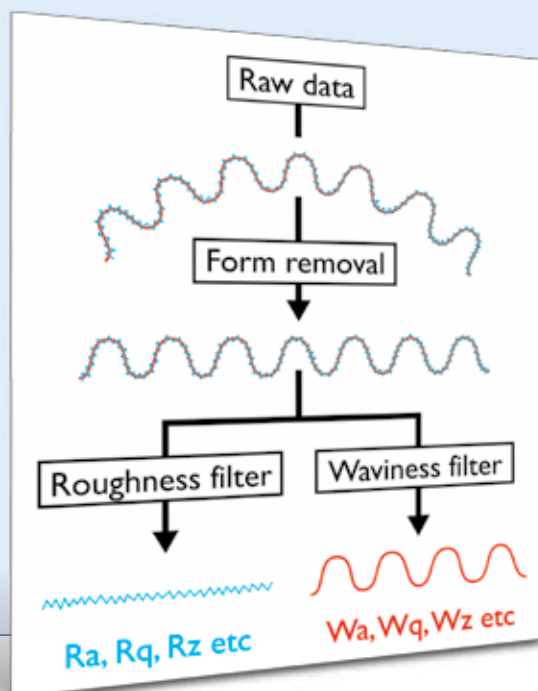
A simplified interface designed specifically for production environments

- Q-DAS accredited
- Compatible with all instruments
- Simple operation & tolerancing
- User levels
- Traceable fields
- Automatic summary reports & statistical studies



Form optimization

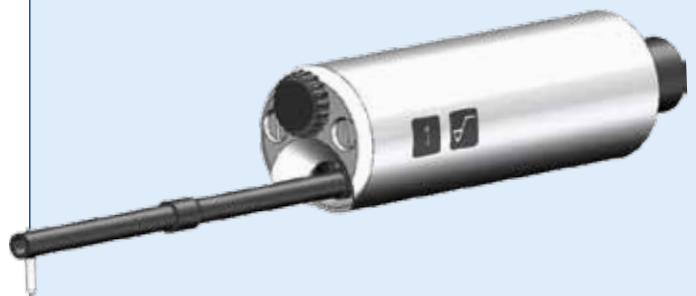
The Talysurf i-Series uses a fast and simple algorithm to remove slope, curved and conic form. This quick and simple technique allows roughness and waviness to be analysed over flat and curved surfaces.



Superior gauging

The Talysurf i-Series gauge gives unique performance and its attributes include:

- Balanced beam giving any orientation measurement
- Constant stylus force throughout its range
- Integral lift / lower as standard
- Small gauge diameter for greater accessibility



Ultra surface finish parameters

Powerful software for the analysis of surface finish

Surface finish parameters

Primary parameters: DFTF, LSLP Ave, LSLP Max, Pa, Pc, PCf, PCI, PCr, Pda*, Pdc*, Pdq*, PHSC*, Pku, Pln, PLo, Plq, Pmr*, Pmr(C)*, Pp, PPc*, Pq, PS, Psk, PSm, Pt, Pv, PVo*, Pz, Pz(JIS)

Roughness parameters: R3y, R3z, Ra, Rc, RCf, RCI, RCr, Rda*, Rdc*, Rdq*, RHSC*, Rku, Rln, RLo, Rlq, Rmr*, Rmr(C)*, Rp, Rp1max, Rpc*, Rq, RS, Rsk, RSm, Rt, Rv, Rv1max, RVo*, Rz, Rz(DIN), Rz(JIS), Rz(n)*, Rz1max

Waviness parameters: Wa, Wc, WCf, WCI, WCr, Wda*, Wdc*, Wdq*, WHSC*, Wku, Wln, WLo, Wlq, Wmr*, Wmr(C)*, Wp, WPC*, Wq, WS, Wsk, WSm, Wt, Wv, WVo*, Wz, Wst, Wsa

Rk parameters and Rk curve: A1, A2, APH, AVH, CV, Mr1, Mr2, Rk, Rpk, Rvk, Rvk/Rk

R & W parameters: AR, AW, Pt, R, Rke, Rn, Rpk, Rvke, Rx, Sar, Saw, Sr, Sw, W, Wn, Wte, Wx

Dominant wavelength: WD1c, WD1Sm, WD1t, WD2c, WD2Sm, WD2t, WDSmMax, WDSmMin

Note: Also includes Roughness VDA and Rk VDA

Form removal and analysis functions

Angle (slope): Surface tilt can be removed prior to parameter analysis by means of a best fit Least Squares straight line algorithm.

Radius: When the surface is a curved or a more complicated involute shape etc the form is removed prior to parameter analysis by use of a Polynomial form fit algorithm.

Filters and additional features

Filters: Gaussian, Robust Gaussian, Spline, VDA, Morphological, ISO 2CR, 2CR PC, Rk

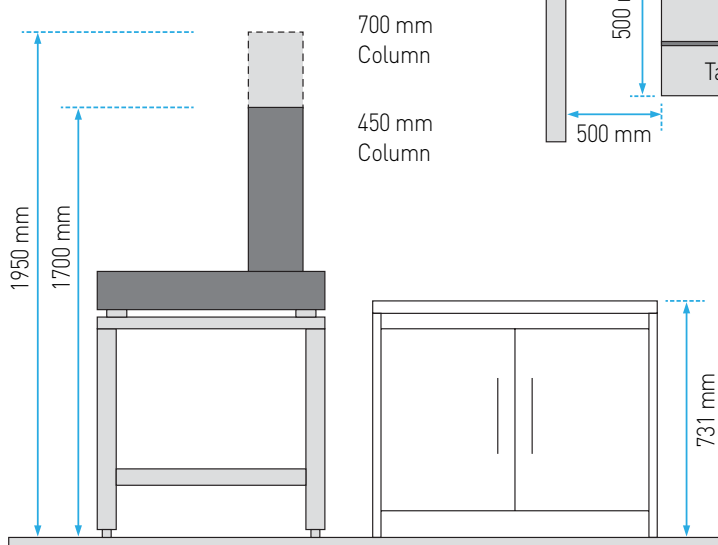
Cut-off (Lc): 0.08, 0.25, 0.8, 2.5, 8mm and 25mm

Bandwidth: 10:1, 30:1, 100:1, 300:1 and 1000:1 or as defined by data spacing (VDA2006)

Qualifiers: All parameters marked with an asterisk require user assigned single or multiple qualifiers. For example, material ratio (mr) may be assessed at one or more slice levels within a single measurement.

Note: Where applicable the parameters conform to and are named as per the standards ISO4287-1997, ISO13565-1-2 and ISO 12085.

Talysurf i-Series floor plan





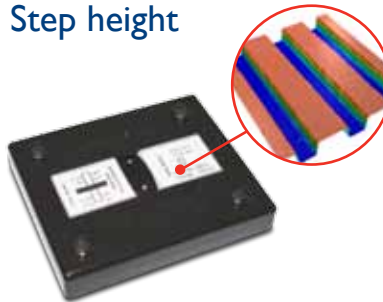
Traceability

Full traceability to international standards

Grating correction

All our traverse units are tested and enhanced using interferometric techniques ensuring accurate dimensional and surface texture measurement in the x direction.

Step height



To ensure the correct gain setting of your instrument, high precision step height standards are available; calibrated uncertainties down to $\pm 4\text{nm}$.

Traceability



All calibration standards can be provided with traceability to international standards using Taylor Hobson's own UKAS laboratory.

Arcuate correction



Patented ball calibration routine

The Form Talysurf systems use a patented ball calibration routine to ensure that both dimensional measurement capability and gauge linearity are dealt with in a single, automated operation.

This fast and simple process uses high-precision spherical calibration artefacts that have been produced to exacting standards and then calibrated for radius and form traceable to international standards.

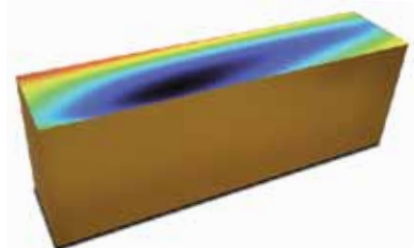
Surface finish



Taylor Hobson can provide glass or metal roughness standards calibrated to an uncertainty of $\pm(2\% + 4\text{ nm})$ providing measurement confidence and compliance for peak parameters with respect to ISO standards.

Spacing standards are also available to an uncertainty of $\pm 0.6\ \mu\text{m}$.

Datum straightness



To check the traverse unit conforms to specifications Taylor Hobson can supply Zerodur straightness standards. These standards combined with special software routines enhance the measuring axis for correct geometrical form.

Serving a global market

Taylor Hobson is world renowned as a manufacturer of precision measuring instruments used for inspection in research and production facilities. Our equipment performs at nanometric levels of resolution and accuracy.

To complement our precision manufacturing capability we also offer a host of metrology support services to provide our customers with complete solutions to their measuring needs and total confidence in their results.

Contracted services from Taylor Hobson

Sales department

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Tel: **+44 (0)116 246 2034**

- **Design engineering**
special purpose, dedicated metrology systems for demanding applications
- **Precision manufacturing**
contract machining services for high precision applications and industries

Service department

Email: taylor-hobson.service@ametek.com

Tel: **+44 (0)116 246 2900**

- **Preventative maintenance**
protect your metrology investment with an Amecare support agreement

Centre of Excellence department

Email: taylor-hobson.cofe@ametek.com

Tel: **+44 (0)116 276 3779**

- **Inspection services**
measurement of your production parts by skilled technicians using industry leading instruments in accord with ISO standards
- **Metrology training**
practical, hands-on training courses for roundness and surface finish conducted by experienced metrologists
- **Operator training**
on-site instruction will lead to greater proficiency and higher productivity
- **UKAS calibration and testing**
certification for artifacts or instruments in our laboratory or at customer's site



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