

Talyseries Cylinder Bore

Laboratory accuracy on the shop floor



Cylinder bore measurement systems

Laboratory accuracy on the shop floor



- Taylor Hobson's cylinder bore measurement systems provide a complete inspection solution for cylinder liners.
- These systems can measure all features of the cylinder bore in a matter of minutes, including cylindricity, roundness, surface finish and cross hatch angle.
- All gauges are designed to withstand the rigours of the shop floor environment; both the roundness and surface contact gauges have been designed with stylus protection in mind, with latter having a fully retractable stylus preventing damage to the stylus tip.



Rapid set-up and measurement in seconds



Simple pass/fail tolerancing



Automated reporting and traceable input fields



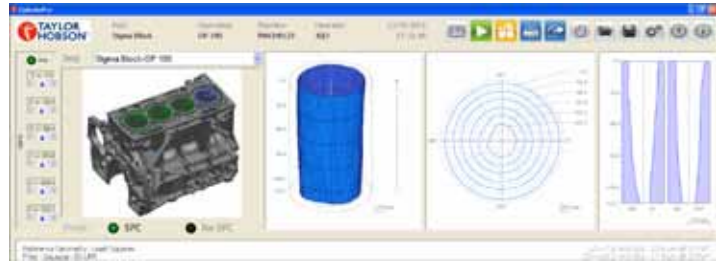
Q-Das accredited



Cylinder bore roundness

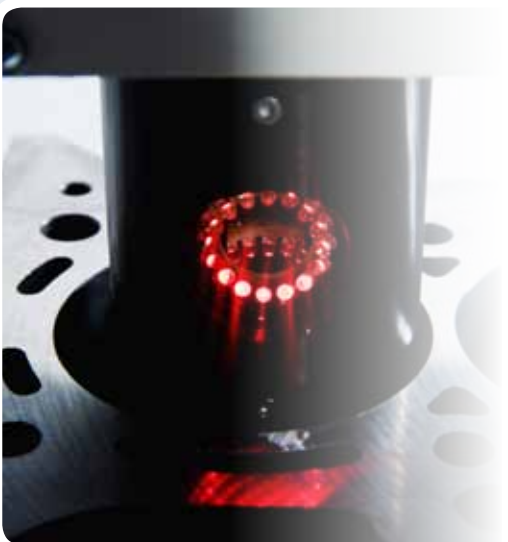
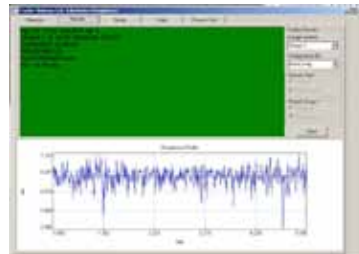
From 5 to 8 gauge heads this precision roundness system can measure a cylinder bore in a matter of seconds.

The software provides a user guided sequence allowing measurement of roundness, cylindricity, parallelism and much more.



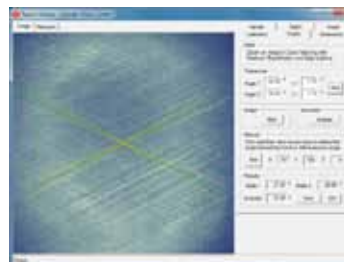
Cylinder bore roughness

A straightness datum and high precision surface gauge ensure measurement integrity. This system comes with a stylus protection system and intuitive software with a full suite of parameters in accordance with international Standards.



Cylinder bore cross hatching

The Cylinder bore vision systems consists have a high resolution camera with motorised movement and an adjustable LED array allowing high quality imaging. All subjectivity is removed by automated pattern recognition and analysis of cross hatching.



Q-Link production interface

A simplified interface designed specifically for production environments

- Q-DAS accredited
- Compatible with surface and roundness products
- Simple operation
- User levels
- Traceable fields
- Simple tolerancing
- Automatic summary reports
- Automatic statistical studies





Cylinder bore specification Roughness

Analysis capability

Standard software

Roughness, waviness and profile parameters including:

Unfiltered parameters: Slope, Pa, Pq, Pt, Pp, Pv, Ppm, PS, PSm, Psk, Pku, Pdq, Plq, PLo, PLn, Pz, PzJIS, Ptp, PHtp, PHSC PPc, PVo.

Roughness parameters: Ra, Rq, Rt, Rtp, Rp, Rv, Rpm, Rz, RzJIS, Ry, Rmax, Rz1max, R3y, Rsk, Rku, Rdq, Rlq, RLo, RLn, Rz, RHtp, RHSC, RS, RSm, RHSC, RPc, RVo.

Waviness parameters: Wa, Wq, Wt, Wp, Wv, Wpm, Wz, WzJIS, Wy, WS, WSm, Wdq, Wlq, WLo, Wln, Wsk, Wku, Wtp, WHtp, WHSC, WPC, WVo, Wt/WSm.

R_W parameters: Pt, R, AR, RX, W, AW, Wx, Wte, SR, SAR, SW, SAW, tc%, Htc.

Qualified Parameters: Tp%, Htp, HSC, Htrc, Pc, Vo, trc%.

Filters

Phase corrected 2CR, 2CR gaussian, robust gaussian, Rk.
Filtering is user selectable from 0.005 mm to 8 mm.

Measurement capability

Workstation dimensions	
Width	INSERT TEXT
Height	INSERT TEXT
Weight	INSERT TEXT

Gauge dimensions	
Total length	TBA
Weight	TBA

Measuring capacity	
Minimum bore diameter	60 mm
Maximum bore diameter	150 mm
Minimum bore length	80 mm
Maximum bore length	300 mm
Bore range	INSERT TEXT

Traverse unit	
Traverse length	18mm
Traverse speed	0.5, 1 or 2 mm / sec
Straightness over 18 mm	0.3 um
Straightness over 10 mm	0.2 um
Run-up distance	User selectable (minimum 0.3 mm)
Return speed	3.5 mm / sec nominal
Data spacing	0.125 um
Maximum number of data points	160000 (measurement length/data spacing)
Minimum Ra value	0.05 um
Measurement range	1-18 mm

Radial unit	
Movement range	360°
Positional control	1°

Calibration unit	
Type	Ra patch
Calibration uncertainty	± 2%

Gauge unit	
Range	1 mm
Resolution	15 nm
Range to resolution	65,536:1
Linearity	TBA
RMS (Rq) noise value	20 nm
Measurement attitude / orientation	Any attitude
Gauge force	300 – 500 mg
Lift lower	Yes on return stroke
Gauge under / over range detection	Yes
Stylus tip size	2 and 5 (conical diamond)

Technical

Electrical supply	
Connection	USB
Power consumption	INSERT TEXT

Environment	
Operating temperature	10-35 °C
Storage temperature	0-40 °C
Operating humidity	30 to 80% relative humidity non-condensing
Storage humidity	10 to 90% relative humidity non-condensing
Maximum vibration	3 µm / sec at <50 Hz and 6 µm / sec at >50 Hz

Data output	
Data output	CSV, PRF, MOD

Software	
Operating system	Windows 7

Cycle time	
Typical cycle time (at 1mm/sec)	For 6 mm measurement <10 seconds



Cylinder bore specification Vision

Analysis capability

Parameters

Cross hatch angle, distance between two points in a bore, width of a feature, radius of honing stone reversal.

Measurement capability

Gauge dimensions

Diameter of body	TBA
Total length	TBA
Weight	6 Kg Max

Measuring capacity

Minimum bore size	60 mm
Maximum bore size	150 mm
Maximum bore depth	300 mm
Minimum bore depth	0 mm

Axial motion

Type	Motorised (via software or push button)
Direction	Up / Down
Maximum traverse length	150 mm or 200 mm
Axial display resolution	TBA
Position control	0.1 mm

Radial unit

Type	Motorised (via software or push button)
Rotation	360°
Display resolution	1024 X 1024
Position control	<0.2°

Camera unit

Field of view	15x15 (Minm Zoom) and 2x2 (Maxm zoom) CHECKTHIS
Working distance	90 mm
Measurement attitude / orientation	± 45°
Camera resolution	1024 X 1024
Lighting	LED ring light
Camera magnification	Minimum zoom 12.4 mm x 12.4 mm Maximum zoom 2.3 mm x 2.3 mm

Technical

Electrical supply

Connection	USB
Power consumption	<500mA

Environment

Operating temperature	10-35°C
Storage temperature	0-40°C
Operating humidity	30 to 80% relative humidity non-condensing
Storage humidity	10 to 90% relative humidity non-condensing
Maximum vibration	3 µm / sec at <50Hz and 6 µm / sec at >50Hz

Data output

Data output	CSV or bitmap, jpeg CHECKTHIS
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Software

Operating system	Windows 7
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Cycle time

Typical cycle time	<10 seconds
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Cylinder bore specification

Roundness

Analysis capability

Standard software

Roundness, concentricity, cylindricity, eccentricity, coaxiality, run-out, departure from true circle (DFTC), harmonics, slope, cylinder parallelism, straightness, axial straightness, diameter.

Filters

Phase corrected 2CR , gaussian and robust gaussian
Filtering is user selectable from 1-500 upr.

Measurement capability

Workstation dimensions	
Width	INSERT TEXT
Height	INSERT TEXT
Weight	INSERT TEXT
Gauge dimensions	
Total length	287 mm
Weight	8 Kg
Measuring capacity	
Minimum bore diameter	60 mm
Maximum bore diameter	150 mm
Minimum bore length	80 mm
Maximum bore length	300 mm
Spindle	
Measuring speed	6 rpm
Radial accuracy	0.25 um
Maximum number of data points	18000
Gauge unit	
Range	± 0.4 mm
Resolution	0.01 um
Bore diameter difference (without gauge change)	8 mm CHECK THIS
Maximum number of gauges	8
Minimum gauge separation	8 mm
Gauge under / over range detection	Yes
Stylus tip radius	2 mm
Measurement orientation maximum tilt	± 45°
Gauge force	400 mN
Calibration unit	
Magnification accuracy	INSERT TEXT
Diameter accuracy	INSERT TEXT
Roundness accuracy	± 0.25µm
Centre and level unit	
Centering unit	Manual
Level unit	Manual

NB Centre and level is not required after initial set-up

Technical

Electrical supply	
Connection	USB
Power consumption	INSERT TEXT
Environment	
Operating temperature	10-40 °C
Storage temperature	10-50 °C
Operating humidity	10-80
Storage humidity	INSERT TEXT
Maximum vibration	INSERT TEXT
Data output	
Data output	CSV, PLN, MOD
Software	
Operating system	Windows 7
Cycle time	
Typical cycle time (at 1 mm / sec)	20 seconds

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