Schedule of Accreditation

issued by

United Kingdom Accreditation Service

2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

0726

Accredited to ISO/IEC 17025:2017

Torque Calibration Ltd trading as Quality System Services

Issue No: 022 **Issue date:** 12 August 2022

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Calibration performed at the above address only

Calibration and Measurement Capability (CMC)

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks
RANGE IN MILLIMETRES AND UNCERTAINTY IN MICROMETRES UNLESS OTHERWISE STATED			
LENGTH			
Plain plug gauges (parallel), cylindrical setting standards	1 to 50 diameter 50 to 100 diameter	0.80 1.0	Using a length measuring machine.
Plain ring gauges (parallel) and setting standards	1 to 10 diameter 10 to 50 diameter 50 to 150 diameter 150 to 300 diameter	1.5 0.80 2.0 3.0	Using a length measuring machine.
Plain gap gauges (parallel)	1 to 100 100 to 200	3.0 5.0	Using end standards or a length measuring machine
Feeler Gauges	As BS 957:2008 0.03 to 1.00	2.0	
Length gauges (flat & spherical ended)	25 to 3000	1.0 + (8.0 x length in m)	Using a length measuring machine.
Steel, ceramic, ruby and tungsten carbide balls	0.5 to 30 diameter	1.0 on diameter	Using a length measuring machine.
Screw plug gauges (parallel) including check and setting plugs	1 to 50 diameter	2.5 on pitch diameter	Single start, symmetrical thread forms only. Using a length measuring machine.
Screw plug gauges (taper)	5 to 65 diameter	5.0 on pitch diameter	Single start, symmetrical thread forms only. Using a length measuring machine.
Screw pitch	0.2 to 8	1.5	Using a length measuring machine.
Screw flank angle	0° to 52°	5.0 minutes of arc	Using a Projector.
RANGE IN MILLIMETRES AND UNCERTAINTY IN MICROMETRES UNLESS OTHERWISE STATED			

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Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks
MEASURING INSTRUMENTS AND MACHINES			
Micrometers			
External	As BS 870:2008 0 to 2000	Heads: 2.0 between any two points Setting and extension rods: 1.0 + (8.0 x length in m)	
Internal	As BS 959:2008 0 to 2000		
Depth	As BS 6468:2008 0 to 300		
Micrometer heads	As BS 1734:1951 0 to 100	1.0	
3 Point Bore Micrometers	3 to 100 100 to 225	5.0 6.0	Using setting rings.
Vernier gauges			
Caliper	As BS 887:2008 0 to 1500	Overall performance 10 + (30 x length in m)	
Height	As BS 1643:2008 0 to 1500		
Depth	As BS 6365:2008 0 to 600		
Height gauges - (Simple) including vernier, dial and digital types which are designed only for measuring distances parallel to the beam.	As BS EN ISO 13225:2012 (0 to 1500)	Length measurement error (E): 12 + (14 x length in metres)	
Dial gauges and dial test indicators	As BS 907:2008 and BS2795:1981 0 to 50	1.5	
Bevel Protractors	As BS 1685:2008 0 to 360 Degrees	6.0 minutes of arc	
ANGLE			
Squares, Blade	As BS 939:2007 50 to 300 300 to 600	 3.0 5.0	
TORQUE			
Hand Torque Tools	BS EN ISO 6789-2:2017 0.1 N·m to 1500 N·m	1.0 %	The uncertainty quoted is for both the application of the calibration torque and the characteristics of the device being calibrated.
	BS EN ISO 6789:2003 (Withdrawn) 0.1 N·m to 1500 N·m	1.0 %	

NOTES
1) Calibration results may be given in imperial units of measurement where appropriate.
2) Conformance statements cannot be made against specifications whose magnitudes are smaller than the specified CMC values.

END

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Appendix - Calibration and Measurement Capabilities

Introduction

The definitive statement of the accreditation status of a calibration laboratory is the Accreditation Certificate and the associated Schedule of Accreditation. This Schedule of Accreditation is a critical document, as it defines the measurement capabilities, ranges and boundaries of the calibration activities for which the organisation holds accreditation.

Calibration and Measurement Capabilities (CMCs)

The capabilities provided by accredited calibration laboratories are described by the Calibration and Measurement Capability (CMC), which expresses the lowest measurement uncertainty that can be achieved during a calibration. If a particular device under calibration itself contributes significantly to the uncertainty (for example, if it has limited resolution or exhibits significant non-repeatability) then the uncertainty quoted on a calibration certificate will be increased to account for such factors.

The CMC is normally used to describe the uncertainty that appears in an accredited calibration laboratory's schedule of accreditation and is the uncertainty for which the laboratory has been accredited using the procedure that was the subject of assessment. The measurement uncertainty is calculated according to the procedures given in the GUM and is normally stated as an expanded uncertainty at a coverage probability of 95 %, which usually requires the use of a coverage factor of $k = 2$. An accredited laboratory is not permitted to quote an uncertainty that is smaller than the published measurement uncertainty in certificates issued under its accreditation.

Expression of CMCs - symbols and units

It should be noted that the percentage symbol (%) represents the number 0.01. In cases where the measurement uncertainty is stated as a percentage, this is to be interpreted as meaning percentage of the measurand.
Thus, for example, a measurement uncertainty of 1.5 % means $1.5 \times 0.01 \times q$, where q is the quantity value.

The notation Q[a, b] stands for the root-sum-square of the terms between brackets: $Q[a, b] = [a^2 + b^2]^{1/2}$