Schedule of Accreditation

issued by

United Kingdom Accreditation Service

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

4699

Accredited to ISO/IEC 17025:2017

The Original Gauge Company Ltd

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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 UNCERTAINTIES IN MICROMETRES UNLESS OTHERWISE STATED			
LENGTH			
Plain plug gauges (parallel),	1 to 30 diameter 30 to 100 diameter 100 to 150 diameter	0.80 0.80 1.0	Plain cylindrical limit gauges are calibrated using a single axis or 3 axis measuring machine with suitable accessories except where indicated.
Plain plug gauges (taper)			
Taper parallel to 1 in 8 on diameter	3 to 50 diameter 50 to 100 diameter 100 to 150 diameter	2.0 3.0 4.0	
Taper 1 in 8 to 1 in 3 on diameter	3 to 50 diameter 50 to 100 diameter 100 to 150 diameter	4.0 5.0 6.0	
Plain ring gauges (parallel)	1 to 6 diameter 6 to 25 diameter 25 to 50 diameter 50 to 150 diameter	1.5 2.0 2.0 2.0	
Plain ring gauges (taper) by check plug			By comparison with reference check plugs
Taper parallel to 1 in 8 on diameter	2 to 50 diameter 50 to 100 diameter 100 to 150 diameter	3.0 4.0 5.0	
Taper 1 in 8 to 1 in 3 on diameter	2 to 50 diameter 50 to 100 diameter 100 to 150 diameter	5.0 6.0 7.0	

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks
RANGE IN MILLIMETRES AND UNCERTAINTIES IN MICROMETRES UNLESS OTHERWISE STATED			
LENGTH cont.			
Screw plug gauges (parallel) including check and setting plugs	1 to 100 diameter 100 to 300 diameter	2.5 5.0	Thread gauges are calibrated utilising methods based on those described in NPL Notes on Applied Science No. 1 and using either a single or 3 axis measuring machine with suitable accessories.
Screw plug gauges (taper) See Note 2	2 to 100 diameter 100 to 150 diameter	5.0 8.0	
Screw ring gauges (parallel) See Notes 3	1 to 100 diameter 100 to 150 diameter	5.0 6.0	
Screw ring gauges (taper) Using check plugs See Note 2	6 to 75 diameter	7.0	
Screw pitch	0.2 to 8	2.0	
Screw flank angle	0° to 52°	5.0 minutes of arc	
MASTER GEARS AND INVOLUTE SPLINE GAUGES			Internal and external gears and Plug and ring gauges
Bore diameter	10 to 100 diameter 1000 to 200 diameter	1.5 3.2	
		Even teeth / Odd teeth	Horizontal measuring machine or floating carriage micrometer and reference setting standards.
Tip diameter (external)	5 to 100 diameter 100 to 200 diameter	2.5 / 5.0 4.2 / 6.8	
Major diameter (external/plug)	5 to 100 diameter 100 to 200 diameter	2.5 / 5.0 4.2 / 6.8	
Minor diamater (internal/ring)	10 to 100 diameter 50 to 200 diameter	2.5 / 4.8 4.2 / 6.8	
Dimension over pins or rollers (external)	10 to 200 diameter	4.5	
Dimension between pins or rollers (internal)	2 to 200 diameter	4.5	Using horizontal measuring machine, FCM or gauge blocks
Spline width	2 to 150mm	2.2	Gauge blocks

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks
RANGE IN MILLIMETRES AND UNCERTAINTIES IN MICROMETRES UNLESS OTHERWISE STATED			
MASTER GEARS AND INVOLUTE SPLINE GAUGES cont.			
Tooth profile total deviation (Fα)	200 diameter maximum	2.5	CNC gear measuring machine
Tooth helix (lead) total deviation (Fβ)	Max 200 diameter, 150 face width and 0° helix angle only	2.5	CNC gear measuring machine
Radial runout of tooth space (Fr)	200 diameter maximum	3.3	CNC gear measuring machine
Single pitch (fp)	200 diameter maximum	2.1	CNC gear measuring machine
Adjacent pitch difference (fu)	200 diameter maximum	2.5	CNC gear measuring machine
Cumulative pitch (Fp)	200 diameter maximum	2.5	CNC gear measuring machine
SERRATION GAUGES AND STRAIGHT SIDED (BS2059) PUGS AND RINGS.			
		Even teeth / Odd teeth	
Major diameter (external/plug)	5 to 100 diameter 100 to 200 diameter	2.5 / 5.0 4.2 / 5.8	
Minor diamater (internal/ring)	6 to 100 diameter 100 to 200 diameter	2.5 / 4.8 4.2 / 6.8	Horizontal measuring machine or floating carriage micrometer and reference setting standards.
Dimension over pins or rollers (external)	10 to 200 diameter	4.5	
Dimension between pins or rollers (internal)	6 to 200 diameter	5.0	
Angular measurement of serrations	6 to 150 diameter	10 minutes of arc	CNC gear measuring machine
Single pitch (fp)	6 to 150 diameter	2.1	CNC gear measuring machine
Adjacent pitch difference (fu)	6 to 150 diameter	2.5	CNC gear measuring machine
Cumulative pitch (Fp)	6 to 150 diameter	2.5	CNC gear measuring machine

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks

NOTES

1 The uncertainty quoted is for the departure from flatness, straightness, parallelism, or squareness, i.e., the distance separating the two parallel planes which just enclose the surface under consideration.

2. Single start, symmetrical thread forms only.

3. Includes use of check plugs for screw rings from 1 mm to 16 mm diameter.

4. Functional test of size using check plugs calibrated with a CMC of 2.5 µm

END

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: $Q[a, b] = [a^2 + b^2]^{1/2}$