

1. Document Information

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2. Revision History

Version/Revision	Date	Description of change	Author	Approved by
1	Nov-21	Document created	ST	Quality
2	Nov-24	New format	AP	Quality
3	Dec-25	Updated to include all types of calibration disciplines	AP	Quality

3. Document Distribution

Department(s)	Distribution Method & Location	Access Level
Quality	Hard Copy / T: Drive	Internal
Customer	https://www.avon-dynamic.co.uk/quality/	External

4. Related Documents

Document Number	Document Name
-	-

5. ISO Related Clauses

Standard	Title	Clause
ISO 17025	Process requirements	7
ISO 9001	Operation	8

Scope:

The document details the standard procedure that the laboratory will follow for calibrating the specified equipment, concerning conformity reporting, decision rules, and standard features recorded, as well as the calibration method employed, unless otherwise advised by the end user. Additionally, this document outlines the calibration intervals and their application to customer orders.

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Calibration Intervals - Customer Guidance

- To help you maintain the accuracy of your equipment and stay on top of your calibration schedule, please confirm the required calibration interval(s) for the equipment listed on your purchase order.
- If no calibration interval is provided, we will proceed without one, and your calibration label will display a blank due date.
- Should you choose to add or amend the calibration interval after the calibration has been completed, please note that an administration fee will apply

Method of Calibration – Customer Guidance

- **Option A:** In accordance with the British or ISO standard or the manufactures specification.
- **Option B:** No specification, results reported “as received”
- **Option C:** Customer specification

Please note: For option C – Customers should submit their requirements in writing prior to calibration activities commencing.

Please note: Charges may apply for creation of customer templates that are not designed around the British standard or manufacturers guidance of the calibration method.

- The laboratory shall inform the customer when the method requested by the customer is inappropriate or out of date

Expected Uncertainty Intervals – Torque Wrenches & Drivers to BS 6789-2:2017

Scope:

The below information outlines the process the laboratory will take as standard process for the calibration of torque wrenches to the above referenced specification, unless consulted otherwise from the end user.

Expected Uncertainty Intervals

Where customers have requested a UKAS Calibration to BS EN ISO 6789-2:2017 there is a requirement to request the expected measurement error and expected uncertainty intervals. For expected measurement error we recommend the manufacturers specification (if known) or BS EN ISO 6789-1:2017 (5.1.5).

If you have no expected uncertainty interval for the torque tool, we recommend & will apply BS EN ISO 6789-1:2017 plus 2%.

If you have a requirement for a different expected uncertainty interval, please let us know prior to the calibration of the item.

All torque wrenches will be calibrated in the clockwise direction unless stated by the customer.

Please note: Calibration costs only include one direction, so charges will occur for both a direction calibration

Clarification of the expected uncertainty interval.

The new standard defines an 'uncertainty interval' for the torque tool at each set point calibrated. This term is derived from the mean error of the torque tool + the maximum error of the measuring device used to calibrate it + the expanded uncertainty of the measurement. We will compare this value to the customers 'Expected Uncertainty Interval' requested above. The addition of the 2% that we have recommended is to cover our calibration uncertainty and measuring device error.

Conformity Statement – Torque Wrenches & Drivers to BS 6789:2003 (Withdrawn Standard)

Scope:

The below information outlines the process the laboratory will take as standard process for the calibration of torque wrenches to the above referenced specification, unless consulted otherwise from the end user.

Conformity Statement that will be applied:

Where statements of conformity are used i.e., calibrated to Customers, manufacturers, BS EN ISO 6789:2003 (Withdrawn standard) are used. Avon Dynamic Ltd will provide a simple acceptance shared risk decision as stated below.

“Conformity / Non-Conformity statements are based on simple acceptance rule (ILAC G8:09/2019) Where, Acceptance Limit (AL) equals Tolerance Limit (TL). Provided that the Tolerance Uncertainty Ratio (TUR) $\geq 1:1$.”

All torque wrenches will be calibrated in the clockwise direction unless stated by the customer.

Please note: Calibration costs only include one direction, so charges will occur for both a direction calibration

Conformity Statement – Torque Meters to BS 7882:2017

Scope:

The below information outlines the process the laboratory will take as standard process for the calibration of torque meters to BS 7882:2017, unless consulted otherwise from the end user.

Contract Review:

- Devices sent in for calibration will be calibrated and the 'As Found' readings recorded.
- Where possible the unit will be adjusted with "as left" results.
- The calibration will be performed to the appropriate British Standard BS 7882 2017 unless requested otherwise.
- The range of Calibration will be 0.04 to 1500Nm and calibration will be carried out in Nm unless otherwise requested or the unit under test dictates units measured.
- Transducers must be supplied with associated display to ensure calibration as a system.
- Calibration will be carried out to BS 7882 Fig A.1e unless stated otherwise.
- All calibrations will be in the clockwise direction unless otherwise requested.

Please note: Calibration costs only include one direction, so charges will occur for both a direction calibration

Decision Rule

- Classification is inherent in BS7882:2017. The uncertainty of the applied torques are directly accounted for and no further consideration was made when the unit under test was classified.

Conformity Statement – Gauge Blocks:

Scope:

The below information outlines the process the laboratory will take as standard process for the calibration of gauge blocks, unless consulted otherwise from the end user.

Conformity Statement that will be applied:

Where customers have requested a UKAS Calibration or gauge blocks, the calibration certificate will provide the status information of gauges that are either within or exceed the tolerance bandwidth of the appropriate specification (conforming or non-conforming).

The decision rule associated with the statement of conformity / non-conformity can be found below and will appear on the certificate of calibration.

Conformity / Non-Conformity statements are based on simple acceptance rule (ILAC-G8:09/2019) where, Acceptance Limit (AL) equals Tolerance Limit (TL). Provided that the Tolerance Uncertainty Ratio (TUR) $\geq 1:1$.

External Micrometers – Standard Calibration Offering

Scope:

The below information outlines the process the laboratory will take as standard process for a calibration of an external micrometer, unless consulted otherwise from the end user.

Method of calibration

Calibration will be performed in accordance with the British Standard specification. Feature "Error in alignment" is not included in the scope of the calibration as this is deemed a non-critical feature, however, please ensure this satisfies your own internal requirements. All other specified parameters and functional checks will be verified and calibrated as part of the standard process to the relevant standard.

If you require different procedure to the above, please specify this at the quoting stage prior to the work commencing.