Technical Information

GAUGE CALIBRATION T002

Guidance on creating Master to Working Gauge calibration sheets

At least monthly, dependent on the throughput of cylinders, centre technicians must compare the ***Working gauge*** readings to those of the ***Master gauge***.

Readings must be taken while the Master gauge is rising through the pressure readings until it reaches the maximum pressure (1.5 x WP) of the system. A suitable block valve should be inserted at the end of the steelwork and before any correctly pressure rated flexible hoses

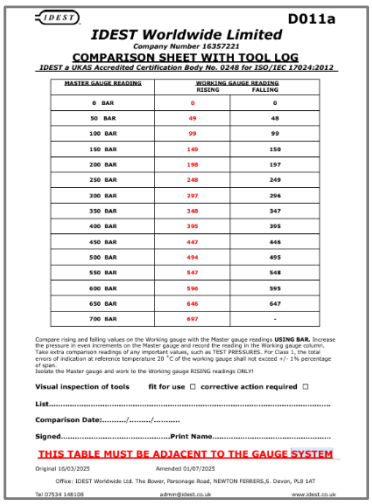
The readings shown on the Working gauge are each recorded on the calibration sheet under the 'Rising' column and again under the 'Falling' column.

Once the calibration is completed the Master gauge must be isolated from the pressure system. ***IT IS NEVER USED DURING A CYLINDER TEST.***

The Master gauge is a calibrated instrument and continued use as a parallel 'Working gauge' will take it out of calibration. The Working gauge does not need to be sent away with master gauge/s. Its accuracy is checked and compared as required against the calibrated master.

A current Calibration Sheet must be displayed adjacent to the gauge system. The Rising values of the Working gauge ***ONLY*** must be used during the testing of a cylinder.

Here is a sample of such a chart:



D011a

IDEST Worldwide Limited

Company Number 16357221

COMPARISON SHEET WITH TOOL LOG

IDEST a UKAS Accredited Certification Body No. 0248 for ISO/IEC 17024:2012

MASTER GAUGE READING	WORKING GAUGE READING RISING	WORKING GAUGE READING FALLING
0 BAR	0	0
50 BAR	49	48
100 BAR	99	99
150 BAR	149	150
200 BAR	198	197
250 BAR	248	249
300 BAR	297	296
350 BAR	348	347
400 BAR	395	395
450 BAR	447	446
500 BAR	494	495
550 BAR	547	548
600 BAR	596	595
650 BAR	646	647
700 BAR	697	-

Compare rising and falling values on the Working gauge with the Master gauge readings **USING BAR.** Increase the pressure in even increments on the Master gauge and record the reading in the Working gauge column. Take extra comparison readings of any important values, such as TEST PRESSURES. For Class 1, the total errors of indication at reference temperature 20 °C of the working gauge shall not exceed +/- 1% percentage of span.

Isolate the Master gauge and work to the Working gauge RISING readings ONLY!

Visual inspection of tools fit for use ☐ corrective action required ☐

List.....

Comparison Date:...../...../.....

Signed.....Print Name.....

THIS TABLE MUST BE ADJACENT TO THE GAUGE SYSTEM

Original 16/03/2025 Amended 01/07/2025

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Note the readings on the Working gauge during the 'rising' of the Master gauge may not compare exactly to those on the Master gauge. Neither will those readings during the 'falling' of the Master gauge values.

The rising and falling of the gauges must be carried out as stated in BS 837-1 to ensure the gauge calibrations are correct but only the rising values are used when testing a cylinder.

Once this Calibration Sheet is produced it must be positioned next to the working gauge and the rising (shown red) readings used. The previous sheet ***must*** be filed for comparative reference. The procedure for creating this calibration sheet is explained on D011a. This sheet can be obtained from IDEST on request.

The Master Pressure gauge is sent to a ILAC/UKAS Accredited Calibration laboratory, accredited to ISO/IEC 17025 ANNUALLY.

Technical Information Sheet