PRESSURE CALIBRATION
USING THE PROEDIT PROCEDURE WIZARD
AND CALIBRATING USING PROCAL

3000A SERIES CALIBRATOR - CONNECTION TO ADAPTER INTERFACE
Pressure Calibration - Overview

The Transmille 3000A Series pressure calibration option uses the TPM pressure adapter with attached transducer and ProCal calibration software to provide pressure measurement for pressure gauges and indicators.

Configuration of the adapter (with power supply), transducer and calibrator:
ProEdit – Torque Procedure Wizard

ProEdit incorporates a built-in wizard for creating procedures for torque wrenches and screwdrivers.

The main wizard screen is laid out as follows:

To set up a new procedure enter the following information:

1. **Instrument Information**

   Enter the basic instrument information and a version number (default is 1.00)

   - Manufacturer: EXAMPLE
   - Model Number: EXAMPLE
   - Version Number: 1.00
2. **Test Type**

   1. **Test Type**
      - TPM Pressure Adapter (Measurement Test)
      - Keyboard Entry (General Test)

   Select the TPM pressure adapter test type

3. **Pressure range and test values**

   2. **Indicator Range**
      - Low: 1
      - High: 10
      - Units: Bar
      - Number of Test Points: 10

   Enter the Low and high pressure range values and the number of test points – once selected the values can be viewed in a graph display by clicking 'Show Test Points'.

4. **Accuracy**

   3. **Accuracy**
      - 5 % of Span

   Enter the accuracy (specification of pressure gauge) – this is entered as % of span – the range is determined by the High pressure value.

5. **Accuracy**

   4. **Number of Decimal Places**
      - 2

   Select the number of decimal places for the reading.

6. **Additional Checks**

   Additional 'general operation' YES / NO type test can also be added to the procedure – these tests are performed at the beginning of the procedure.
7. **Final Settings**

Select Analogue or Digital to allow the correct uncertainty statement to be set for the procedure.

To create an entirely new procedure, select **Build Type – NEW**.

If these tests are to be appended to an existing procedure select **Built Type – APPEND**.

Click **BUILD PROCEDURE** to proceed with procedure creation –

Note if any information is detected as being missing, a message will be displayed detailing what information is required before proceeding.

On completion a message will be displayed confirming the procedure details:

![Procedure Builder Wizard: Torque Wrench]

The following procedure was successfully created:

- Manufacturer: EXAMPLE
- Model: EXAMPLE
- Procedure: PRCC13.MDB

[OK]
Running a Pressure procedure using ProCal

Once a procedure is created using the procedure wizard, it is ready to be run using ProCal. The procedure will be set up to read back values automatically from the calibrator if using the TPMxx pressure calibration adapters (with associated transducer).

Image prompts will also have been created and linked to the procedure to aid the user in setting the calibrator to the correct mode and zeroing the calibrator between each test point.

1. Start calibration

Select ‘Search For a Procedure (Calibrate Instrument)’ from the File menu:

Or use the toolbar to select the procedure select function.
2. Select the required procedure from the list

Highlight the required procedure then click Next >

3. Confirm the traceability and uncertainties data is correct

This screen shows a summary of the traceable instrument and uncertainties information set for the selected procedure – click YES if this is correct or NO if this needs to be changed in the procedure (clicking NO will abort the calibration).
4. Begin calibration

Enter serial number, cal. interval, tested by name and customer address as applicable.

5. Select Calibration Option

Select [As Found Readings] or [After Adjustment Readings] as required.
6. General operation check

A PASS / FAIL type test allows the general operation to be recorded – simply click on PASS or FAIL to record result.

7. Pressure Tests – Pre-Test Prompt

An on-screen prompt shows how to set the calibrator to the require torque mode:

i. PRESS THE MODE BUTTON ON THE CALIBRATOR
ii. SELECT THE PRESSURE TRANSDUCER FROM THE MENU USING THE CURSOR KEYS
iii. PRESS SELECT TO CONFIRM CHOICE
iv. PRESS THE ZERO SOFTKEY TO ZERO THE CALIBRATOR READING (ENSURE TRANSDUCER IS CONNECTED PRIOR TO PRESSING ZERO)

Click NEXT >> to continue to measurement screen
8. Pressure Tests – Calibration Screen

Apply pressure to transducer – the measured value will be displayed by ProCal.

Between each measurement a prompt is shown detailing measurement method (as shown above).
9. Finishing & Saving the calibration

**Calibration Results (As Found)**

<table>
<thead>
<tr>
<th>No.</th>
<th>Test Title</th>
<th>Test Value</th>
<th>Reading</th>
<th>% Spec</th>
<th>Uncert.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>General Operation Tests</td>
<td>---</td>
<td>Pass</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>2</td>
<td>Device Condition</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>3</td>
<td>Pressure Rising</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>4</td>
<td>Pressure Rising</td>
<td>1.00Bar</td>
<td>1.00Bar</td>
<td>1.02Bar</td>
<td>2.5</td>
</tr>
<tr>
<td>5</td>
<td>Pressure Rising</td>
<td>1.25Bar</td>
<td>1.25Bar</td>
<td>1.28Bar</td>
<td>2.3</td>
</tr>
<tr>
<td>6</td>
<td>Pressure Rising</td>
<td>1.50Bar</td>
<td>1.50Bar</td>
<td>1.55Bar</td>
<td>3.5</td>
</tr>
<tr>
<td>7</td>
<td>Pressure Rising</td>
<td>1.75Bar</td>
<td>1.75Bar</td>
<td>1.82Bar</td>
<td>3.5</td>
</tr>
<tr>
<td>8</td>
<td>Pressure Rising</td>
<td>2.00Bar</td>
<td>2.00Bar</td>
<td>2.06Bar</td>
<td>3.5</td>
</tr>
<tr>
<td>9</td>
<td>Pressure Rising</td>
<td>2.50Bar</td>
<td>2.50Bar</td>
<td>2.58Bar</td>
<td>3.5</td>
</tr>
<tr>
<td>10</td>
<td>Pressure Rising</td>
<td>3.00Bar</td>
<td>3.00Bar</td>
<td>3.10Bar</td>
<td>3.5</td>
</tr>
<tr>
<td>11</td>
<td>Pressure Rising</td>
<td>3.50Bar</td>
<td>3.50Bar</td>
<td>3.60Bar</td>
<td>3.5</td>
</tr>
<tr>
<td>12</td>
<td>Pressure Rising</td>
<td>4.00Bar</td>
<td>4.00Bar</td>
<td>4.10Bar</td>
<td>3.5</td>
</tr>
<tr>
<td>13</td>
<td>Pressure Rising</td>
<td>4.50Bar</td>
<td>4.50Bar</td>
<td>4.60Bar</td>
<td>3.5</td>
</tr>
<tr>
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<td>5.00Bar</td>
<td>5.00Bar</td>
<td>5.10Bar</td>
<td>3.5</td>
</tr>
<tr>
<td>15</td>
<td>Pressure Rising</td>
<td>5.50Bar</td>
<td>5.50Bar</td>
<td>5.60Bar</td>
<td>3.5</td>
</tr>
<tr>
<td>16</td>
<td>Pressure Rising</td>
<td>6.00Bar</td>
<td>6.00Bar</td>
<td>6.10Bar</td>
<td>3.5</td>
</tr>
<tr>
<td>17</td>
<td>Pressure Rising</td>
<td>6.50Bar</td>
<td>6.50Bar</td>
<td>6.60Bar</td>
<td>3.5</td>
</tr>
<tr>
<td>18</td>
<td>Pressure Rising</td>
<td>7.00Bar</td>
<td>7.00Bar</td>
<td>7.10Bar</td>
<td>3.5</td>
</tr>
<tr>
<td>19</td>
<td>Pressure Rising</td>
<td>7.50Bar</td>
<td>7.50Bar</td>
<td>7.60Bar</td>
<td>3.5</td>
</tr>
<tr>
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<td>Pressure Rising</td>
<td>8.00Bar</td>
<td>8.00Bar</td>
<td>8.10Bar</td>
<td>3.5</td>
</tr>
<tr>
<td>21</td>
<td>Pressure Rising</td>
<td>8.50Bar</td>
<td>8.50Bar</td>
<td>8.60Bar</td>
<td>3.5</td>
</tr>
<tr>
<td>22</td>
<td>Pressure Rising</td>
<td>9.00Bar</td>
<td>9.00Bar</td>
<td>9.10Bar</td>
<td>3.5</td>
</tr>
<tr>
<td>23</td>
<td>Pressure Rising</td>
<td>9.50Bar</td>
<td>9.50Bar</td>
<td>9.60Bar</td>
<td>3.5</td>
</tr>
<tr>
<td>24</td>
<td>Pressure Rising</td>
<td>10.00Bar</td>
<td>10.00Bar</td>
<td>10.10Bar</td>
<td>3.5</td>
</tr>
</tbody>
</table>

**Certificate Comments**

Enter any required certificate comments below. To import an external test file click on 'Import Comments' and select the required file. To edit the contents of the 'drop down' lists click on the button marked '...'.
Select an instrument status from the available options below.

**Instrument Status Selection**
- Calibration Complete
- Adjustment Required
- Awaiting Customer Response / Information
- Calibration Incomplete
- Other

**Set Certificate Number & Save Calibration**

Check the certificate number below. If not acceptable, change to the required number and then click 'Finish' to save the calibration.

Note: If the certificate number already exists, a warning will be shown and another number may be chosen.

Certificate Number

STD00057