TORQUE CALIBRATION
USING THE PROEDIT PROCEDURE WIZARD
AND CALIBRATING USING PROCAL

3000A SERIES CALIBRATOR - CONNECTION TO ADAPTER INTERFACE

TORQUE TRANSDUCER WITH BENCH STAND

TORQUE ADAPTER [ER014]
Torque Calibration - Overview

The Transmille 3000A Series torque calibration option uses the EA014 Torque adapter, a transducer with bench stand and ProCal calibration software to provide torque measurement for torque screwdrivers and wrenches.

Configuration of the adapter, transducer and
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:

1. **Instrument Information**
   - Enter the basic instrument information and a version number (default is 1.00)

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. Torque range and test values

1. Torque Range

<table>
<thead>
<tr>
<th>Low Value</th>
<th>1Nnm</th>
<th>1.0Nnm</th>
<th>2.0Nnm</th>
<th>3.0Nnm</th>
<th>4.0Nnm</th>
<th>5.0Nnm</th>
<th>6.0Nnm</th>
<th>7.0Nnm</th>
<th>8.0Nnm</th>
<th>9.0Nnm</th>
<th>10.0Nnm</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Value</td>
<td>1ONm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step Size</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Enter the Low and high torque values and the step size – once selected the values will be automatically displayed in the list. A single point can be edited by double clicking the value and entering a new one.

3. Accuracy

2. Accuracy

| % Of Range | 5 |

Enter the accuracy (specification of torque tool) – this is entered as % of range – the range is determined by the High torque value.

4. Additional Checks

3. Additional Checks

Check for General Operation

An additional 'general operation' YES / NO type test can also be added to the procedure – this is created at the beginning of the procedure.

5. Final Settings

Settings:
- EA014 Torque Adapter (Measurement Test)
- Keyboard Entry (General Test)

Build Type:
- New
- Append

Build Procedure

The procedure is set as default to use an EA014 Torque adapter for automatic Readback for torque value.

For users performing torque measurements using external equipment, a Keyboard Entry type test can be selected which allows test readings to manually typed in.
To create an entirely new procedure, select **Build Type – NEW**.
If these tests are to be appended to an existing procedure select **Build 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 : PRC13.MDB

**OK**
Running a Torque 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 EA014 Torque calibration adapter (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:
2. **Select the required procedure from the list**

![Procedure List - 13 Match(es) found](image)

Highlight the required procedure then click **Next >>**

3. **Confirm the traceability and uncertainties data is correct**

![Confirm Procedure Settings - EXAMPLE EXAMPLE procedure [PROC13]](image)

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. Torque Tests – Pre-Test Prompt

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

i. PRESS THE MODE BUTTON ON THE CALIBRATOR

ii. SELECT THE REQUIRED TORQUE 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. Torque Tests – Calibration Screen

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

Between each measurement test the torque adapter should be reset to zero the reading – this is shown in a prompt screen before each measurement (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 Uncert</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>General Operation</td>
<td>1.09N</td>
<td>1.05N</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>General Operation</td>
<td>2.08N</td>
<td>2.04N</td>
<td>48</td>
</tr>
<tr>
<td>3</td>
<td>General Operation</td>
<td>3.05N</td>
<td>3.15N</td>
<td>30</td>
</tr>
<tr>
<td>4</td>
<td>General Operation</td>
<td>4.08N</td>
<td>3.97N</td>
<td>6</td>
</tr>
<tr>
<td>5</td>
<td>General Operation</td>
<td>5.06N</td>
<td>4.82N</td>
<td>26</td>
</tr>
<tr>
<td>6</td>
<td>General Operation</td>
<td>6.03N</td>
<td>6.10N</td>
<td>20</td>
</tr>
<tr>
<td>7</td>
<td>General Operation</td>
<td>7.08N</td>
<td>7.15N</td>
<td>30</td>
</tr>
<tr>
<td>8</td>
<td>General Operation</td>
<td>8.05N</td>
<td>8.04N</td>
<td>32</td>
</tr>
<tr>
<td>9</td>
<td>General Operation</td>
<td>9.03N</td>
<td>8.86N</td>
<td>28</td>
</tr>
<tr>
<td>10</td>
<td>General Operation</td>
<td>10.02N</td>
<td>9.57N</td>
<td>6</td>
</tr>
</tbody>
</table>

Click on any test to repeat. CurrentView: All Tests

#### Certificate Comments

Enter any required certificate comments below. To import an external text file click on 'Import Comments' and select the required file. To edit the contents of the 'drop down' lists click on the button marked '...'

Instrument was placed in lab and allowed to stabilise before calibration...
Instrument Status Information

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
## Print Certificate

<table>
<thead>
<tr>
<th>Number of Copies</th>
<th>Print Options</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Print Calibration Certificate(s)</td>
<td>Ready</td>
</tr>
<tr>
<td></td>
<td>Print Certificate of Conformance(s)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Print Label(s)</td>
<td>Print Cal Due?</td>
</tr>
</tbody>
</table>

[Image: Print Certificate window with options for number of copies, print options, and status.]