



ETP Torque Analyzer



Table of Contents

| | |
|-----------------------------------|----|
| Instrument Controls | |
| Description | 2 |
| Switching On / Off | 4 |
| Measurement Process / Modes | 5 |
| Installation of the ETP & Testing | 7 |
| Main Menus | 8 |
| Main Menu: Setup | 9 |
| Main Menu: RS 232 Output | 14 |
| Main Menu: Units | 15 |
| Mechinical Overload Protection | 16 |
| Electronical Overload Protection | 17 |
| Calibration | 18 |

Instrument Controls

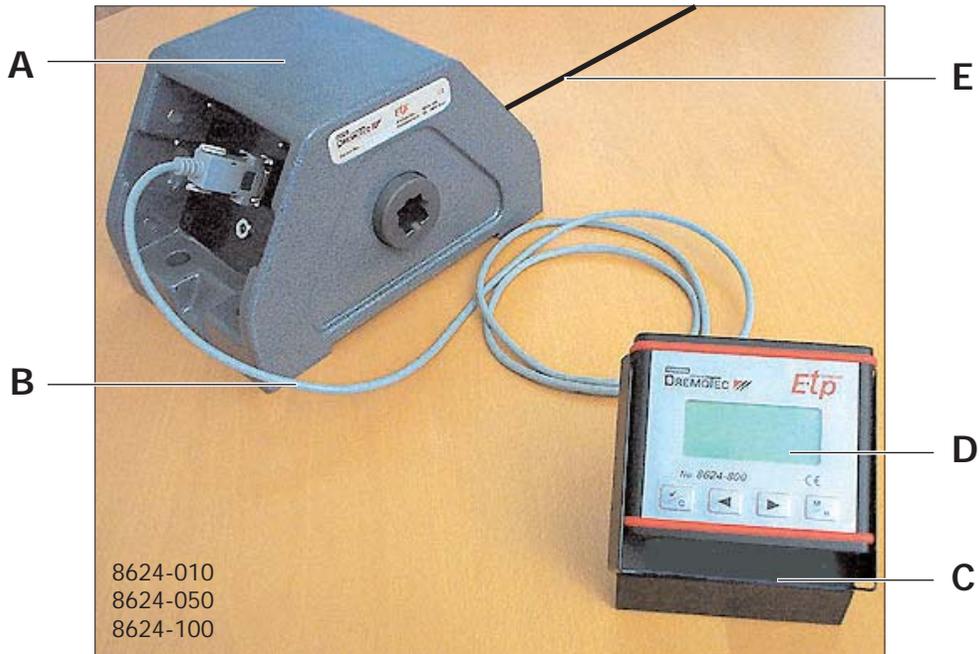
(See page 1) for the diagram of all the ETP items.

- A: Basic Housing
- B: Connection cable
- C: Display-Fixture
- D: Operating Display (8624-800)
- E: Power Supply



Mountz Inc.
1080 N. 111th St
San Jose, CA 95112
Phone: (408) 292-2214
Fax: (408) 292-2733

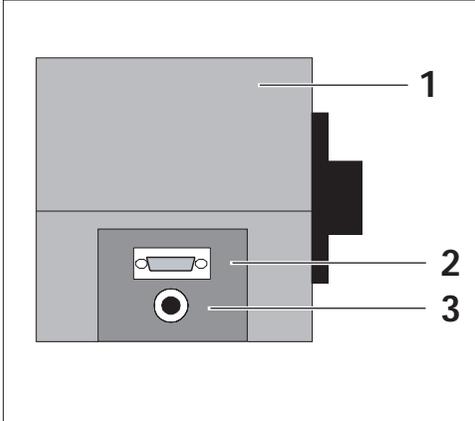
sales@etorque.com
www.etorque.com



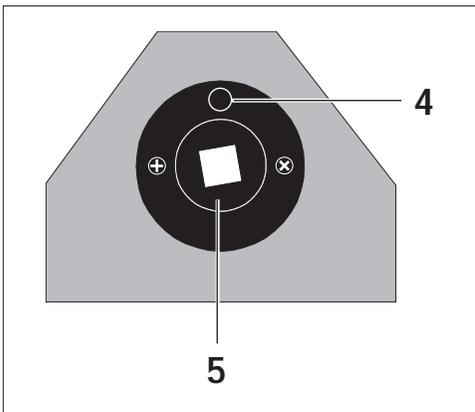
DESCRIPTION

Basic housing 8624-001

- 1 Aluminium housing
- 2 RS 232 interface for display and printer connection respectively (double side)
- 3 One power connection (single side)

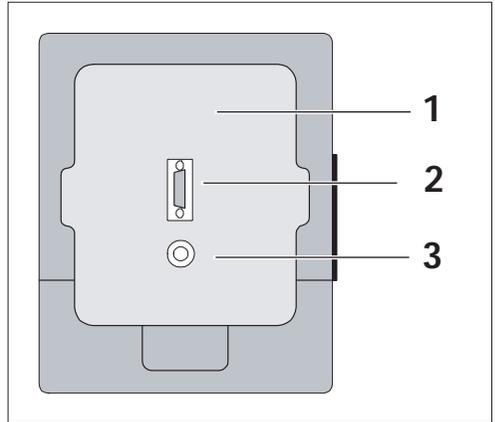


- 4 Overload protection (see page 21)
- 5 Female square drive 1/4"



Basic housing 8624-010 / -050 / -100

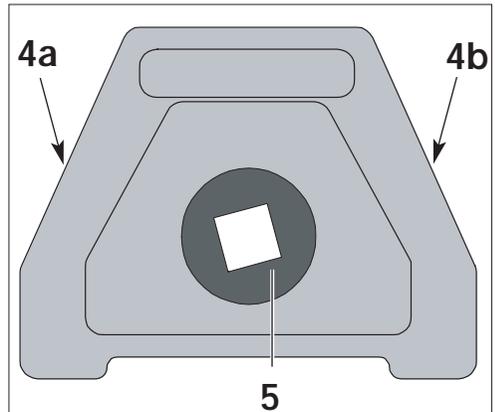
- 1 Plug-in connection for operating display
- 2 Display, RS 232 interface connection for PC- und printer (only left side)
- 3 Power connection port



4a Fitting for display, RS 232 interface for PC- and printer, power connection port

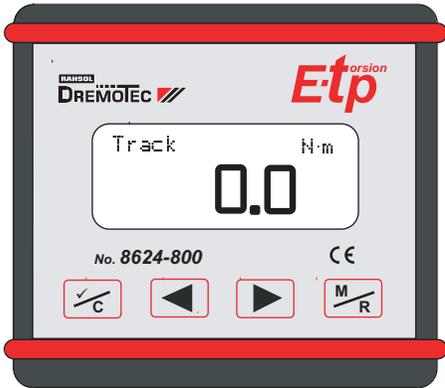
4b Fitting for display, power connection port

5 Tool fitting (additional adapters are part of the scope of delivery)

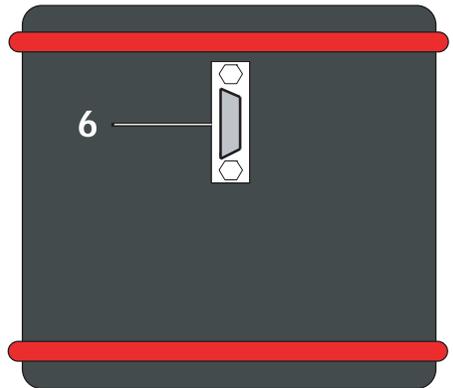


OPERATING DISPLAY (FRONT VIEW)

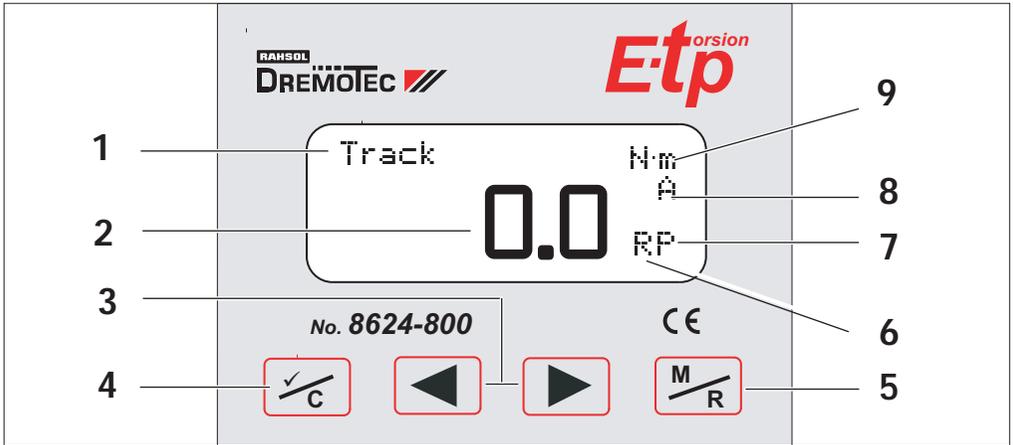
Display screen and operating keys

**OPERATING DISPLAY (REAR VIEW)**

6 RS 232 interface for display connection

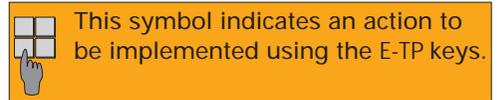


LED GRAPHIC DISPLAY



- 1 Measuring mode
- 2 Measuring value
- 3  Arrow keys to adjust values (up/down), changing menus in the menu mode and setting of the different measuring modes (track, 1. peak, 2. peak).
- 4 Confirmation key 
Switch ON / OFF
✓ = Confirm entry /
C = Calibration mode
- 5 Menu (Return) key 
M = Menu call up /
R = Return (back)
- 6 Direction display
R = clockwise; L = anti-clockwise
- 7 Direct measured value output via RS 232 interface to printer (P = print)
- 8 Reset display:
A = Auto-Reset; M = Manual Reset
- 9 Units display:
Scale in N·m and lbf·ft / lbf·in
(in cN·m and ozf·in for 8624 – 001)

SWITCHING ON / OFF



Switching on

The E-TP is switched on automatically after connecting the power supply.

► The basic housing measuring electronic starts functioning and, after a few seconds, the display will show the current measurement mode of the E-TP.

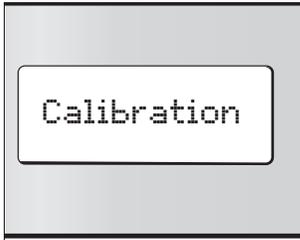
 The E-TP is manually switched on by pressing the confirmation key  (4).

Switch off

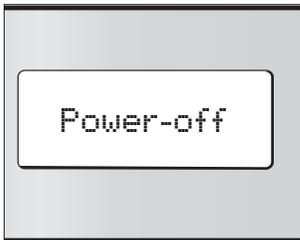


To switch off the E-TP, press the confirmation key for ca. 3-4 seconds.

The display then shows the message:



and, after another 2 seconds, the message:



Please release the key now; the display goes out and the E-TP is switched off.

i Notice:

The background lighting of the electronic unit remains active even after the E-TP is switched off. The background lighting can only be deactivated by disconnecting the torsion torque tester from the power supply

MEASUREMENT PROCESS / MEASUREMENT MODES

The E-TP can be operated with three different measurement processes

A): Track-Mode

✔ The **Track-Mode** is a "Continuous value measurement".

✔ This means that the current torque is continually displayed on the display during tightening.

✔ The peak value is not retained on the display or saved during the measurement and after release.

B): 1. Peak

✔ The **1. Peak** is a "Break point measurement" that displays the trigger moment of the test object.

✔ During tightening, the current torque is continuously displayed. If the torque falls during tightening, the maximum tightening torque is shown on the display.

✔ If a maximum tightening torque (break point) is reached, this tightening torque is shown for ca. 2 seconds (when the Autoreset function is active) in the display.

The display then returns to the actual torque.



To implement a manual RESET, briefly press the confirmation key once. 

C): 2. Peak

✔ The **2. Peak** is an "End value measurement".

✔ In this measurement process, the actual end torque of a measurement is displayed.

✔ If a maximum tightening torque (**2.Peak**) is reached, this tightening torque is shown for ca. 2 seconds (when the Autoreset function is active) in the display. The display then returns to the actual torque.



To implement a manual RESET, (when the Autoreset function is deactivated) briefly press the confirmation key once. 

**Note:**

The electronic torsion torque tester (E-TP) normally always determines the 1.Peak and 2.Peak during every measurement.

In order to display these determined values, proceed as following described.

Setting the measurement procedure:

When first switched on, the E-TP is always in the **Track-Mode**.

In order to switch to a different measurement procedure, select the required mode using by means of the arrow keys.

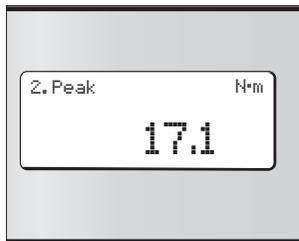
Example:

"End value measurement".



Press the arrow keys   until **2. Peak** appears in the display.

You can now read the determined value of the 2.Peak measurement.



INSTALLATION OF THE E-TP AND TESTING OF A TORQUE WRENCH

► The basic housing of your E-TP should be screwed to a stable vertical or horizontal support such that there is free access to both sides for connection.

► The tool cavity of the basic housing can be used for left-hand or right-hand testing of the torque wrench.

► Observe during installation that there remains sufficient place for the torque wrench to be tested. Free turning of the wrench must be possible.

► All components of the E-TP shall be connected carefully.

► The operating display may be attached in one of the two receptions of the basic housing (only for 8624-010 / -050 / -100). For model 8624-001 the operating display can only be connected with the display cable.

► Use of the display holder is recommended in the case that during testing of a longer torque wrench the operating display is not visible from the basic housing. This will enable you to bring the operating display into your direct view by means of display cable and holder.

► Attach the suitable adapter to your torque wrench.

► Please check whether the operating display shows "0". If not, briefly press the confirmation key  for calibration.

► Place your torque wrench with the slip-on adapter into the input square drive of the E-TP at a right angle.



Attention!

Avoid tilting and slipping! Never use an adapter! Bring the torque wrench as close as possible to the E-TP.

► Operate your torque wrench exclusively by the handle using one or both hands and apply load uniformly until the preset torque is reached.



Attention!

The torque transmission is dependent on the lever arm. The use of the tool outside the handle area, or the use of extension tubes or special additional tools, has a negative effect on the torque values. Do not use any extension! If you have any questions contact our Service Hotline or request our Technical Compendium.



If you want to see the trigger moment and/or the actual end torque in the track mode after testing switch-over using the arrow keys.



(See chapter "Measurement process/ Measurement Modes" on page 10.)

► Repeat the test to determine a safe value for comparison.

MAIN MENÜ

If you want to change the settings of the E-TP, you can call up different sub menus from the main menu for changing the preset values.



To reach the main menu, switch on the E-TP and simply press the Menu- (Return-) key .



An example description is given, based on the following main menu "Setup", on how to call up a sub menu, change settings and return to the active measurement mode.

The graphic display will switch from the measurement mode to the main menu.

The display shows:

Setup



Use the arrow keys to select the required main menu.

The following menu items are available:

In English operating

=> Setup

=> RS 232 output

=> Units



Once the required menu has been selected, confirm by pressing the confirmation key. .

MAIN MENU: SETUP

First switch from the current measurement mode to the main menu overview:



Press the Menu-(Return)-key .

The main menu overview shows the first main menu "Setup" on the display



Confirm the "Setup" display with the confirmation key .

The main menu "Setup" is opened. The first sub menu will be displayed: "Language".



The following sub menus are available:

- => Language
- => Autoreset
- => Date - Time



Use the arrow keys   to select the required sub menu.

Sub menu Language



Use the arrow keys to select the sub menu "Language" and press the confirmation key .



Press the arrow keys   to obtain the required language setting.

The following menu languages can be selected:

- => German
- => English



Once you have selected the required menu item, confirm the selection with the confirmation key .



To get out of the sub menu "Language" press the Menu-(Return)-key .



To return to the measurement mode, press the Menu-(Return)-key twice .

Sub menu Autoreset

i The E-TP has the function of an automatic reset of the displayed measured value. This means that the value displayed on the display after the measurement is automatically reset to "zero" after ca. 3 seconds. This function can be switched on or off.

In the "Setup" menu use the arrow keys



to select the sub menu "Autoreset".



 Confirm the display „Autorest“ with the confirmation key .

The current setting, e.g. "ON" is shown in the display.



 By pressing the arrow keys  you can switch off the "Autorest" function. Confirm it with the confirmation key .

i **Note:**

In the measurement mode, the display will show either an A = ON or M = OFF, depending on the selection (A => automatic Reset; M => manual Reset)

 Press the Menu-(Return-)key , to return to the main menu "Setup".

 To return to the measurement mode, press the Menu-(Return-)key.

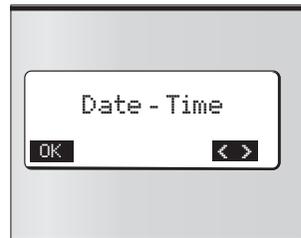
Sub menu Date - Time

▣ Normally, these settings are default set during initial commissioning of the torsion torque tester in the factory.

▣ However, there may be circumstances, where date and time settings need to be changed (e.g. other time zones).

▣ To change or display these settings, proceed as described below:

From the main menu item "Setup" use the arrow keys to select the menu item "Date - Time"





Confirm the selection with the confirmation key .

Following confirmation, the menu "Display - Time" will appear in the display.

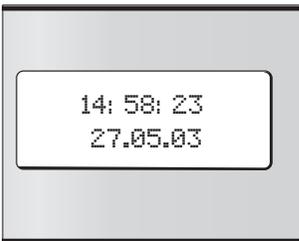


The set time and date can be displayed here.



Confirm this with the confirmation key .

The currently set time and date will be displayed.

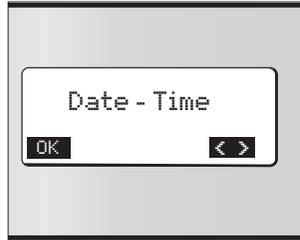


To leave this display, press the Menu-(Return-)key .



To leave the sub menu at this point, press the Menu-(Return-)key  again.

This calls up the sub menu item "Date - Time" again.

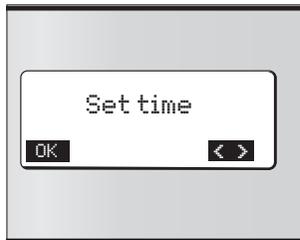


i To return to the measurement mode, press the Menu-(Return-)key again and continue as described at the end of this example.

i If the menu "Set time" was selected to change the displayed time, continue as described below



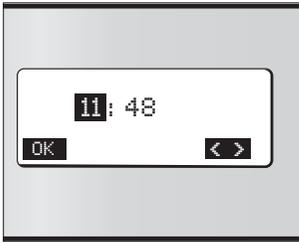
To set the time, use the arrow keys   to select the menu "Set time".



Confirm this with the confirmation key .

After confirmation, the time in hours and minutes appears in the display.

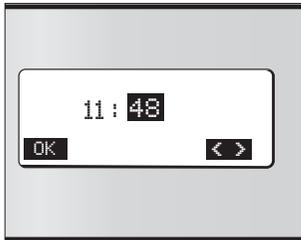
The hour display is marked in black.



 The hour can now be changed using the arrow keys  .

 Once the required hour is set, confirm the settings with the confirmation key .

The black marking now changes automatically to the minutes



 The minutes can also be changed with the arrow keys  .

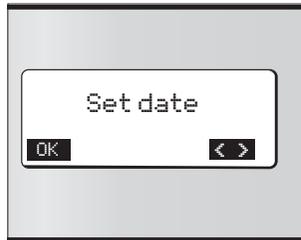
 These settings must then be confirmed with the confirmation key .

The menu "Set time" will then appear again in the display.



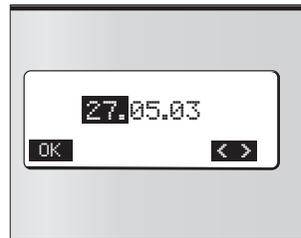
Set date

To set the date, select the menu "Set date" with the arrow keys  .



 Confirm the selection with the confirmation key .

The date will then be shown in the display, with the day displayed on a dark background.



i | Changing the date is the same procedure as described in "Set time"



Confirm the set date with the confirmation key .



Press the Menu-(Return-)key once to return to the sub menu "Date - Time". .



i | Press the Menu-(Return-)key again to return to the main menu "Setup"



In order to return to the measurement mode, press the Menu-(Return-)key  again.

Abbreviated procedure description

▀ The remainder of these instructions will use an abbreviated procedure description.

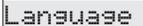
▀ Example for the displayed screen:



▀ Sign for "Action" / "Result": =>

▀ Key depiction: 

Procedure example 1:

 =>  =>  means:

Press the confirmation key in the main menu "Setup". Result:
This calls up the first sub menu "Language".

Procedure example 2:

 =>  =>  => 

=>  means:

Press the menu key in the sub menu "Language" the Menu-(Return-)key .

Result:

Return to the main menu "Setup".

Action:

Press again the Menu-(Return-)key .

Result:

This leaves the menu mode and returns to the active measurement mode.

MAIN MENU: RS 232 OUTPUT

► The E-TP is equipped with an RS 232 interface (see page 7 at point 4a). This gives you the option, to transfer the measured values directly to a printer.

► This means that, after each test object is activated, the value of the "break point or 1.Peak" will be transferred via the interface to the printer or PC.

Sample printout:

```

***   RAHSOL   DREMOTEC   ***
*** Partner in the GEDORE Group ***

E-TP 8624-010 SNo. 3010002

DATE: 12.02.2004 TIME: 15:18

WRENCH NUMBER: _____

No.                               MEAS. VALUE

001                               009.88 Nm
  
```

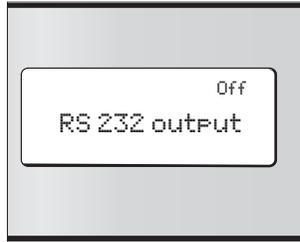
RS 232 output, switch on/off

 Switch into the menu mode to the main menu "RS 232" and confirm the selection.

=>  => **Setup** =>   =>

RS 232 output => 

The graphic display shows:



Now press the arrow keys to activate the "RS232 output" or, if it is already active, to deactivate it.

 =>   =>  => 

 Confirm the selection with the confirmation key .

 To return to the measurement mode, press the Menu-(Return)-key .

i If you need a new print head for another test object, change to the menu item "RS 232 output" as described above.

 When there, and with the RS232 output active, press confirmation key  twice.

 To return to the measurement mode, press the Menu-(Return)-key .

MAIN MENU: UNITS

► The following default units are available for the E-TP on factory setting (for models 8624 – 010 / – 050 / – 100):

- => N·m
- => Lbf·ft
- => Lbf·in

Only for model 8624 – 001:

- => cN·m
- => lbf·in
- => ozf·in

► Other measurement units can be programmed if requested (p.ex. "Kg·m").

► In order to set the units, you need to switch from the measuring mode to the main menu mode.



First switch from the current measurement mode to the main menu overview:
Press the Menu-(Return-)key .

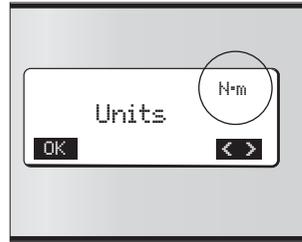
Track 0.0 N·m => => Setup



Use the arrow keys to select the main menu "Units" and press the confirmation key.

=> Units =>

=> The display shows the current set unit.



Use the arrow keys to select the required unit.



To confirm the selection and return to the main menu "Units", press the confirmation key .



To return to the current measurement mode, press the Menu-(Return-)key.

Units => => Track 0.0 N·m

MECHANICAL OVERLOAD PROTECTION

(Model 8624 – 001 only)

► To protect the E-TP 8624 – 001 from overload, the mechanical overload protection is triggered when an excessive torque is applied ($> 16 \text{ N}\cdot\text{m}$). This mechanical overload protection is applicable for left-hand as well as for right-hand tests.



Note:

This way you will notice a significant turning movement of approx. 20° . Apart from a clear click sound, the green display on the measurement shaft will no longer be visible.

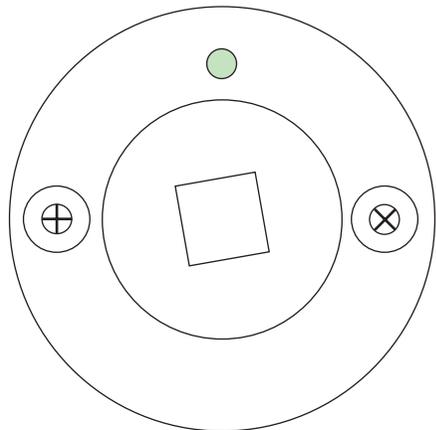
► In order to activate the overload protection, use the reset wrench provided in the scope of delivery ($1/4$ "-square) and rotate the torsion shaft back to its original state.



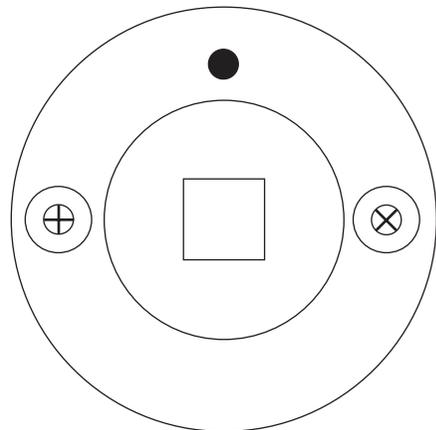
Note:

The correct position is reached when you can feel a clear engagement whilst rotating. The green display should also be visible again.

Overload protection activated



Overload protection released



ATTENTION / WARNING:

To ensure that no damage has been caused to the torsion shaft as a consequence of excessive overload, it is recommended that you have the E-TP checked (recalibrated). For this please contact our Service Hotline (Tel. ++49(0)1804 37 36 68).

ELECTRONIC OVERLOAD PROTECTION

For model 8624-001

✔ In addition to the mechanical overload protection you will also see the following information in the electronic unit display after an overload:

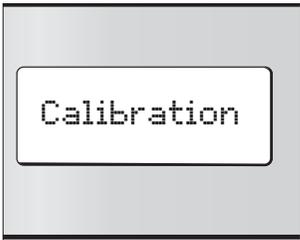


Deleting the overload display



Once you have deactivated the mechanical overload protection, press the confirmation key as long as the message "CALIBRATION" is shown in the display.

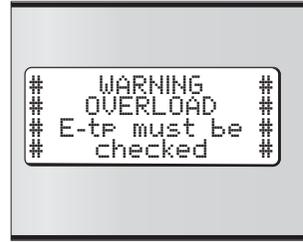
=>  => Calibration



For models 8624-010; 8624-050; 8624-100

✔ These instruments only have an electronic overload protection.

✔ After an overload of the torsion shaft, the following information is shown in the operating display:

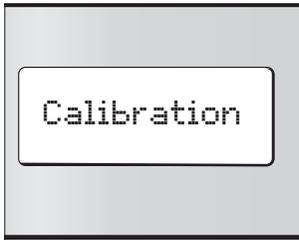


Deleting the overload display



Please press the confirmation key on the operating display as long as the message "CALIBRATION" is shown in the display.

=>  => Calibration



ATTENTION / WARNING:

To ensure that no damage has been caused to the torsion shaft as a consequence of excessive overload, it is recommended that you have the E-TP checked (recalibrated). For this please contact our Service Hotline (Tel. ++49(0)1804 37 36 68.

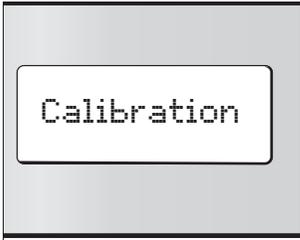
CALIBRATION

► If the E-TP displays small deviations from the zero point 0 when not loaded, the torsion torque tester must be recalibrated.



To do this in the measurement mode, simply press the confirmation key when the E-TP is not loaded .

The display shows the message "Calibration".



Note:

It is important that the torsion torque tester is not loaded during the calibration!
Any load will lead to an incorrect zero point setting and to measurement inaccuracies.

Explanation

Calibration

► Action to determine measurement inaccuracy without implementing modifying measures to the measuring device.
Only the relationship between the input and output parameters - the difference between the set and actual value - is determined.

The calibration result can then be used for: => "Adjusting".

Adjusting

► Action that places the measuring device in an operational condition.

All falsifying measurement inaccuracies are reduced by modifying the measurement device until the pre-defined error limits (e.g. DIN ISO Standards) are again met.