



# TorqueMate®

Electronic Torque Wrench



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English help  
PC front user guide

Select port: select communication port you wish to use to communicate with the wrench

View: select pc front view of the wrench which you want, either memory or single function. Also select language for pc display.

Change password: type current password. Type new password. Confirm new password

Current mode: Select mode you wish wrench to operate in. Selection will take effect after data is stored using 'store to wrench button'

Current units: select units you wish wrench to operate in. Selection will take effect after data is stored using 'store to wrench button'

Current language: select language you wish wrench to operate in. Selection will take effect after data is stored using 'store to wrench button'

Wrench span: The span of measurement of the wrench

Period of calibration: Set number of days to next calibration.

Calibrated on: date of last calibration.

Activate calibration: Activates the calibration option in the wrench menu. You must begin calibration before the wrench powers down.

Default calibration: Allows wrench reset. All data /settings stored in the wrench will be cleared and default calibration values for the wrench's specific calibration span will be programmed.

Power off wrench: allows soft power down of the wrench.

Store to wrench: Store all current pc front settings to wrench. Wrench will automatically power down after store.

Load from file: loads a previously created file containing preset data, into the pc front preset window (top left).

Save to file: saves pc front displayed preset data to file.

Clear all presets: clears presets from the pc front presets window.

To set a preset, click on any preset location number in the pc front presets window. Set the required nominal min max and units. Store settings to the wrench.

Continuous upload: allows real time communication of measurements to the pc front. Wrench must be connected to the pc. This feature operates only modes, when the wrench is in peak or preset

Upload all: displays all stored wrench measurement data in the pc front data window (lower left)

Clear: clears the wrench measurement data displayed on the pc.

Clear wrench data: clears the wrench measurement data displayed on the pc and in the wrench

Unit conversion: allows user to change the units of the displayed measurement data on the pc

Sort by preset: sort the displayed measurement data and group according to ascending preset numbers

Save as an excel file: save the current displayed measurement data as an excel file.

The pc front measurement data window displays stored wrench measurements showing wrench memory location, date and time, torque value, the preset torque limits), \* indicator(where measured values are outside preset number, preset nominal, min, max and units.

## Description

The TorqueMate Wrenches are "State of the Art" devices, comprising Intelligent Technology, Large Alphanumeric Display, Menu Driven. Total Tractability, Greater than 1% Accuracy, Simple to Set and Calibrate complete with Outstanding Performance and Ease of Use Features. The Torque Tools are, Hand-held Torque Measuring Instruments provide Precision Accuracy, High Repeatability, Simple Recalibration and Pass Code Operation. Presets can be set to provide Visual & Audio Signal on reaching of Preset Value Approach, Fastener Overload, Range Overload, Maximum Mechanical Overload, Low Battery and Memory Full.

## Recommended Use

The Electronic Wrench are specifically designed for use in all Industrial Sectors and Applications where High Accuracy and Repeatability combined with a Complete Torque Data Management & Control System are Standard Requirements.

## Basic Characteristics

- Accuracy & Linearity** Right hand side torque = 1%, Left hand side = 1% of Actual Reading.
- **Resolution** 0.05
- **Alarms** Preset Value Approach, Fastener Overload, Range Overload, Mechanical Overload, Low Battery, Memory Full.
- **Memory Capacity** 2094 Values
- **Battery Life** Sleep Mode 5,000 Hrs, Operational Mode 160 Hrs.

## Care Guidelines -

These Instruments should be handled with care. Do not subject to Torque Loads in excess of the Model Range.

Do not use Tool to loosen fasteners tightened beyond Max Tool Capacity - Never apply extensions to Tool.

Do not Drop or Subject to Impact Blows - Provide adequate storage to Protect from Damage - Adhere to Safety Instructions

## Changing the Battery on Wrenches -

Unscrew the metal End Cap on the handle of the wrench.

Remove the four AA cell batteries and replace with new.

Screw back the metal End cap.

Check to ensure the date and time are correct

**Note: Battery life should last 160hrs+**

## Ratchet head guidelines

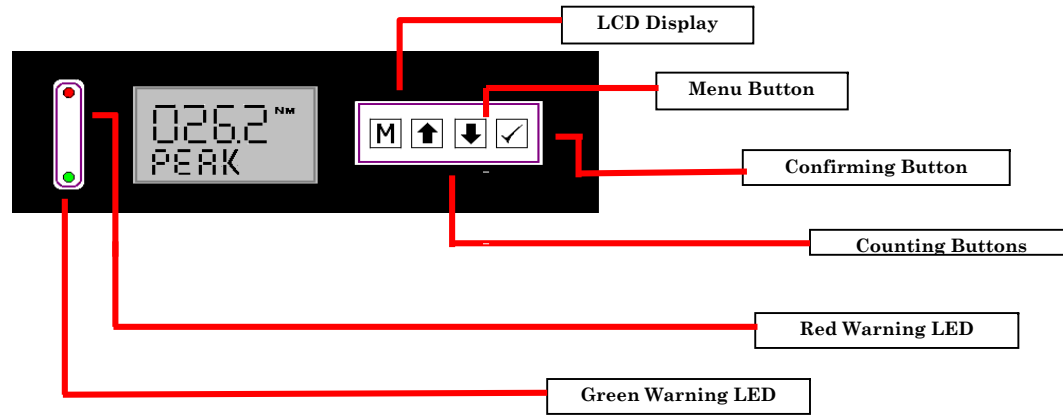
Max Torque for 1/4" Ratchet = 30 Nm

Max Torque for 3/8" Ratchet = 135 Nm

Max Torque for 1/2" Ratchet = 340 Nm

- 1) Store in a dry location
- 2) Oil Frequently to prevent Ratchet head seizing
- 3) Do not exceed specified torques
- 4) Do not use external forces on Ratchet ( i.e. Hammer)

## The LCD Display



Reading starts at 2% of Maximum with an Accuracy of 1% beginning at 10% of Maximum (Threshold to Maximum Span).  
When Reading under Threshold LCD will display "Under"

### BACKLIT MODE






#### Backlit Mode - Keypad Function

- |         |                            |                               |
|---------|----------------------------|-------------------------------|
| 1 Press | <input type="checkbox"/> M | to Scroll to the Backlit Menu |
| 2 Press | <input type="checkbox"/> ✓ | to enter Backlit Menu         |
| 3 Press | <input type="checkbox"/> ✓ | to Switch on Backlit          |
| 4 Press | <input type="checkbox"/> ✓ | to Switch off Backlit         |

#### Backlit Mode User Information

This function allows the User to light the display






**Language Mode - Keypad Function**

1. Press  to Scroll to the Language Menu  
2. Press  to enter Lang Menu  
3. Press   to Scroll to Language Required  
4. Press  to Confirm operation in this Language.

**Language Mode User Information**

The Languages of Operation available to the User are .....  
EnG - English, Frn - French, Ger - German, itA - Italian, SPn - Spanish.





**Unit Mode - Keypad Function**

1. Press  to Scroll to Units Menu  
2. Press  to enter Units Menu  
3. Press   to Scroll to Units Type Required  
4. Press  to confirm selected units

**Unit Mode User Information**

The following Units of Measure are available  
- kgf.cm - kgf.m - cN.m - N.m - ozf.in - lbf.in - lbft.ft



**Date Mode - Keypad Function**

1. Press  to Scroll to the Date Menu  
2. Press  to enter Date Menu  
3. Press   to to Set the Hour  
4. Press  to Set the Hour Required  
Day Set / Year Set - repeat Steps 3 & 4




**Date Mode User Information**

This function allows the User to set Hour, Day & Year.  
The "Hour" will automatically change as the Minuets are increased / decreased using the Up / Down Keys.  
The Month will automatically change as the Days are increased / decreased using the Up / Down Keys.







**Track Mode - Keypad Function**

- 1 Press  to Scroll to Trac Mode  
2 Press  to operate in Trac Mode

**Peak Mode - Keypad Function**

- 1 Press  to Scroll to Peak Mode  
2 Press  to operate in Peak Mode  
3 Press  to store the Peak Value Recorded if required. If Storage is not required then apply New Torque

**Preset Mode - Keypad Function**

- 1 Press  to Scroll to Preset Mode  
2 Press  to Enter Preset Mode  
3 Press   to select your preferred Pre-set No. (1 TO 99)  
4 Press  to operate within this preset parameter.  
5 Press  to store the applied Torque if required.

**Track Mode User Information**

As Torque is applied the Wrench will actively display the applied Torque reading to the Max Span of the Device. On removal of the Torque pressure the display will return to Zero.

**Peak Mode User Information**

In Peak Mode the Torque Reading will remain Displayed when the Torque Pressure is removed. The User has the option to store the reading in Memory. If storage of the reading is not required the User may continue to the next measuring task.





**Preset Mode User Information**

This Mode allows the User to take measurements based on the Nom, Min & Max of Torque Settings with the relevant Warning Signals activated.  
**Min Value** - The Green LED & Buzzer will Flash and Sound intermittently  
**Nom Value** - The Green LED & Buzzer will sound continuously  
**Max Value** - The Red LED will Flash continuously and the Buzzer will sound continuously.

### Set Mode - Keypad Function

- 1 Press  to Scroll to Set Mode
- 2 Press  to enter Preset No Menu
- 3 Press   to Scroll to required Preset No. (1 to 99)
- 4 Press  to Confirm Preset No. selected
- 5 Press   to Set your Nominal Value
- 6 Press  confirms Nominal Value
- 5 Press   to Set Your Low Value
- 6 Press  confirms Low Value
- 5 Press   to set your High Value
- 6 Press  confirms High Value





### To set a Preset as a +/- % Deviation of the Nominal Value,

- 1 Repeat all steps 1 to 6 and set the Max & Min Value = Nom Value
- 2 Press  asks for % Deviation Value
- 3 Press   to select % Deviation
- 4 Press  to confirm % Deviation settings.

### Set Mode User Information

In Set Mode 99 Individual Preset showing Nominal, Min and Max Values can be set from Wrench Keypad or PC.










#### Recall Mode - Keypad Function

- 1 Press  to Scroll to Recall Mode
- 2 Press  to enter Memory Locations
- 3 Press   to scroll through locations that contain data.

#### Recall Mode User information

This mode allows the User to view the Stored Applied Torque Data.  
Only Locations containing data will be displayed. Note that as data is stored the locations are populated sequentially from 01 to 2094









#### Clear Mode - Keypad Function

- 1 Press  to Scroll to Clear Mode
- 2 Press  to enter Clear Mode
- 3 Press   to select "From Location" in range to be cleared.
- 4 Press  to confirm "From Location" of range to be cleared
- 5. Press   to select "To Location" of range to be cleared
- 6 Press  to confirm range of locations "From - To" to be cleared.
- 7 Press  When asked "Are you sure ?" to confirm.

#### Clear Mode User Information

This Mode allows the User to Clear the Stored Torque Data from an individual or range of locations.  
Note: Before clearing the selected range and as a safety precaution, the user will be asked are they sure they wish to clear selected data. This can be done by pressing the confirm button.

#### Upload Mode - Keypad Function

- 1 Press  to scroll to Upload Mode
- 2 Press  to enter Upload Mode
- 3 Press   to select "From Location" of range to be Uploaded.
- 4 Press  to confirm "From Location" of range to be Uploaded
- 5 Press   to select "To Location" of range to be Uploaded
- 6 Press  to confirm and Upload Data from the range of locations.

#### Up Load Mode User Information

From the Wrench, this Mode allows the User to

Upload Stored Torque Data from an individual or range of locations.

In Upload Mode, the Wrench must be connected to a PC running the PC FRONT-END Software (PCFE) via the RS232 Ports on the Wrench and PC.

**Calibrate Mode** **Note: Ensure date & time on wrench are correct**

- 1 Connect wrench to PCFE software and Click the Activate Calibrate Button.
- 2 Press  on the Wrench to scroll to Calibrate Mode  
Place Wrench onto Calibration Unit. Destress on on Right Hand Side
- 3 Press  to activate Calibrate Mode (The Wrench LCD will now display a reading of 10% of the Max Span of the Wrench)
- 4 Apply Torque to the Wrench until the Reading on the Calibration Rig is equal to the Reading on the Wrench (10% of Max Span)
- 5 Press  to confirm that the First Point of Calibration is now set.
- 6 Now Measurement Point No.2 (20% of Max Span) will appear on the Wrench LCD Display. Therefore repeat Steps No.4 & No. 5
- 7 Now Measurement Point No.3 (60% of Max Span) will appear on the Wrench LCD Display. Therefore repeat Steps No.4 & No. 5
- 8 Now Measurement Point No.4 (100% of Max Span) will appear on the Wrench LCD Display. Therefore repeat Steps No.4 & No. 5
- 9 Repeat Step No's 1 to 8 for the Left Hand calibration.
- 10 Once calibration is complete select Trac mode on wrench.  
On the Left hand side check wrench accuracy at 20%, 60% and 100% according to ISO6789-2003. Now destress on Right hand side and repeat step 10

**Calibrate Mode User Information**

Calibration is achieved using four Measuring Points, namely 10%, 20% , 60% and 100% of Max Span of the Wrench. In Calibration Mode the Wrench will automatically display these Measuring Point Values initially for the Right Hand and then for the Left Hand. **All Products should be 1% accurate**

**Note: Destressing wrench implies that the wrench is torqued to it's maximum span**

## IMPORTANT NOTICE

**Calibration Mode is only accessible at the Mountz Repair Centers. The End User cannot access the Calibration Mode.  
Please ensure that certified calibration systems are used when calibrating the Torque wrenches.**

### **To Establish Communication with the Wrench**

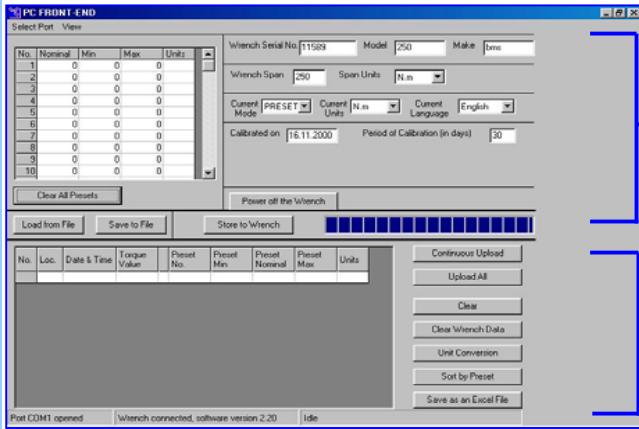
1. Place the Link Cable in the COM 1 PC Port. Note: Available PC Port configurations may vary. It is important that communications are attempted with the correct PC Port. The PC Link has been designed for connection with the standard 9-Way D-Type PC Port.

Possible PC Port Configurations you may have:

- (a) The Standard PC will have a mouse port (din socket), leaving one D-Type 9-Way socket as COM 1, which you should use for the communications Link cable.
  - (b) Your PC may use a mouse with a 9Way D-Type connector which is using one of the available ports. A second port is usually supplied. This may appear as a 25 pin D-Type Port. You may use a standard 25 to 9 Way D-Type connector on this port and then you use the supplied communications cable on this port.
2. Place the other end of the cable into the wrench cable socket.
3. Switch on the wrench by pressing any button on the wrench. Wait for the initialisation to finish. Now the pcfe will automatically connect to the wrench and the screen will fill with data from the wrench. (see note 1)
4. When you are finished communicating with the wrench, remove the cable from the wrench.

Note 1. If communication does not succeed the first time .....

It is important to know how your particular PC has named it's ports, if communication is to succeed (as windows can reassign port names) The easiest way to do this is to attempt communication with the Com Cable connected as in (a) or (b) in Step1 and if you do not succeed then at the upper toolbar on the pcfe click on "Select Port" .... Select an alternative port ... Click OK ... wait and the PC will now attempt communication on this new port.



The PC FRONT-END is activated by double clicking it's Icon.

The Top Half of the Page displays Wrench Data  
Preset Nom, Min & Max Values

The Bottom Half of the Page displays Uploaded Peak and  
Preset Measurement Values

## THE PC FRONT-END Top of Page

Preset Values

Click to Clear All  
Preset Values

Click to Load other  
Preset Value Files

Click to Save  
Uploaded  
Preset Value

The screenshot shows the 'PC FRONT-END' software interface. It features a table of preset values on the left and configuration fields on the right. The table has columns for 'No.', 'Nominal', 'Min', 'Max', and 'Units'. The configuration fields include 'Wrench Serial No.', 'Model', 'Make', 'Wrench Span', 'Span Units', 'Current Mode', 'Current Units', 'Current Language', 'Calibrated on', and 'Period of Calibration (in days)'. At the bottom, there are buttons for 'Clear All Presets', 'Load from File', 'Save to File', and 'Store to Wrench', along with a 'Power off the Wrench' button.

No.	Nominal	Min	Max	Units
1	25.1	25	25.9	lbf.ft
2	36.2	33.8	79	N.m
3	50	40	60	lbf.ft
4	30.5	25.6	32.7	lbf.ft
5	305	300	308	lbf.in
6	4.54	3.56	5.79	kgf.m
7	324	309	424	lbf.in
8	555	333	999	lbf.in
9	33.8	33.8	34	N.m
10	33.8	33.8	34.8	N.m

Click to Power  
Off the Wrench

Stores  
(Downloads)  
Current Preset  
Values to  
Wrench

Store to Wrench

### To Set a Preset

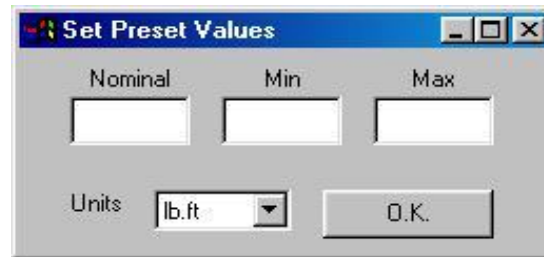
1. Click Once the required Field.

No.	Nominal	Min	Max	Units
1	0	0	0	
2	0	0	0	
3	0	0	0	
4	0	0	0	
5	0	0	0	
6	0	0	0	
7	0	0	0	
8	0	0	0	
9	0	0	0	
10	0	0	0	

Clear All Presets

2. The Set Preset Values dialogue box will now appear.

Input the Nominal, Min and Max Values



The dialog box titled "Set Preset Values" contains three input fields for "Nominal", "Min", and "Max", each currently empty. Below these fields is a "Units" dropdown menu showing "lb.ft" and an "O.K." button.

### THE PC FRONT-END Top of Page

The screenshot displays the top section of a software interface. At the top, there are three buttons: "Load from File", "Save to File", and "Store to Wrench". To the right of these buttons is a progress bar consisting of ten dark blue rectangular segments. Below the buttons is a data table with the following columns: "No.", "Loc.", "Date & Time", "Torque Value", "Preset No.", "Preset Min", "Preset Nominal", "Preset Max", and "Units". The table contains ten rows of data. A blue box highlights the "Torque Value" column, and a callout box points to the asterisk in row 5, stating "\* Indicates a value in excess of the Wrench". To the right of the table is a vertical stack of buttons: "Continuous Upload", "Upload All", "Clear", "Clear Wrench Data", "Unit Conversion", "Sort by Preset", and "Save as an Excel File". Each button has a corresponding callout box with a blue arrow pointing to it. At the bottom left, there are two status indicators: "Port COM1 opened" and "Wrench connected, software".

No.	Loc.	Date & Time	Torque Value	Preset No.	Preset Min	Preset Nominal	Preset Max	Units
1	1	16.11 18:46	66.3					N.m
2	2	16.11 18:46	80.7					N.m
3	3	16.11 18:46	132.1					N.m
4	4	16.11 18:46	110.2					N.m
5	5	16.11 18:46	123.7 *	2	33.8	36.2	79	N.m
6	6	16.11 18:46	28.7 *	2	33.8	36.2	79	N.m
7	7	16.11 18:46	31.3 *	2	33.8	36.2	79	N.m
8	8	16.11 18:47	46.7	2	33.8	36.2	79	N.m
9	9	16.11 18:47	33.9	2	33.8	36.2	79	N.m
10	10	16.11 18:47	27.7 *	2	33.8	36.2	79	N.m

Port COM1 opened    Wrench connected, software

\* Indicates a value in excess of the Wrench

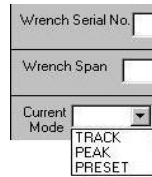
- Uploaded Peak Measurements
- Uploaded Preset Measurements
- Click to activate Continuous Upload
- Click to Upload all Peak & Preset Data
- Click to Clear Data in Fields
- Click to Clear Data from the Wrench
- Click to change Units in Field
- Click to Sort Preset & Peak Fields
- Click to Save Data in Excel File

CLICK

DIALOGUE BOX

**Current Mode**

To select Trac, Peak or Preset Mode of Operation.



Store to Wrench

Activate by Clicking

**Span Units**

To Set Wrench Span Units.



Store to Wrench

Activate by Clicking

CLICK

DIALOGUE BOX

**Current Language**

To Set Language.



Store to Wrench

Activate by Clicking

**Current Units**

To Set / Change Units of Measure.



Store to Wrench

Activate by Clicking

**Click** Power Off Wrench to Power down Wrench.

Power off the Wrench

**Click** Store to Wrench to Store Data to the Wrench.

Store to Wrench

**Click** Continuous Upload to show the cahnges in torque readings from the wrench.

Continuous Upload

**Click** Upload All to upload all data from the Wrench.

Upload All

**Click** Clear Wrench Data to clear Wrench Measurement Data from the Wrench.

Clear Wrench Data

**Click** Unit Conversion to change Units displayed on the PC.

Unit Conversion

**Click** Sort by Preset to to group displayed measurement data according to ascending preset numbers.

Sort by Preset

**Click** Clear to Wrench Measurement Data on the PC.

Clear

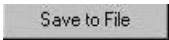
**CONNECTION STATUS - Displays which Com Port is being used and whether the Wrench is connected.**

Port COM1 opened

Wrench connected, software version 2.20

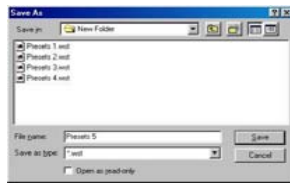
Idle

**CLICK**



To Save Preset Values  
to File on  
PC Hard Drive

**DIALOGUE BOX**

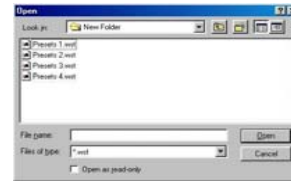


**CLICK**



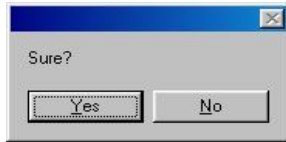
To Load Preset Values  
from File on Hard Drive

**DIALOGUE BOX**



**Clear All Presets**

Clears all Presets  
of Nom, Min & Max  
Values Settings





### The PC Front End - Mode Access

PC Front End - Mode Access			
Mode	End User Access	Distributor Access	Master Access
Language	Without Password	Without Password	Without Password
Unit	Without Password	Without Password	Without Password
Date	Without Password	Without Password	Without Password
Trac	Without Password	Without Password	Without Password
Peak	Without Password	Without Password	Without Password
Preset	Without Password	Without Password	Without Password
Set	Without Password	Without Password	Without Password
Recall	Without Password	Without Password	Without Password
Clear	Without Password	Without Password	Without Password
Upload	Without Password	Without Password	Without Password
Calibration		Access with Password	Access with Password
Cal Coefficients			Access with Password
Serial No			Access with Password
Model No			Access with Password
Make			Access with Password

## IMPORTANT NOTICE

The End User cannot access the Mountz Master Versions of the PC Front End. The End User does not require a Password to access PC Front End (Just Click OK at Password Prompt) This is to Safeguard the Authenticity of Calibration.

## To Activate Calibration with TORQUE PCFE

1. Input dd/mm/yyyy in the Calibrated On Filed

2. Input "No of Days to next Calibration " in the  
Period of Calibration (in days) Field.

The screenshot shows a software interface for wrench calibration. At the top, there are input fields for 'Wrench Serial No.' (11589), 'Model' (250), and 'Make' (bms). Below these are 'Wrench Span' (230) and 'Span Units' (NM). The 'Current Mode' is set to TRACK, 'Current Units' to CNM, and 'Current Language' to English. The 'Calibrated on' field contains the date 01.01.1999, and the 'Period of Calibration (in days)' field contains 30. Below these are calibration coefficients for 'L' and 'R' sides, each with three input boxes containing the values 111, 1223, and 2807. At the bottom of the interface are four buttons: 'Activate Calibration', 'Power off the Wrench', 'Store to Wrench', and 'Default Calibration'. A row of ten blue indicator lights is located at the very bottom. Four blue arrows point from the text instructions to the 'Calibrated on' field, the 'Period of Calibration' field, the 'Activate Calibration' button, and the 'Default Calibration' button.

3. Click on "Activate Calibration" .

Calibration must begin before the Wrench  
automatically powers down (1.5 Min)

4. Click Default Calibration to Reset the Wrench. All data / settings stored

in the Wrench will be cleared and default calibration values for the wrench's  
specific calibration span will be programmed.

**Solution: When Torque has not been applied during the Calibration Procedure.**

**1 Connect the Wrench to the PCFE using the RS232 Connection Cable.**

**2 Wait until communication with the wrench is established.**

**Note: Cal Coefficients will read**

**3 Click "Default Calibration"**

**4 Click "Yes" when prompted Are you sure ?**

**Note: The Wrench will power down automatically**

**5 Power Up the Wrench**

**6 Click "Activate Calibration"**

**The Wrench is now ready to be Recalibrate.**

### Angle wrench Set Mode - Keypad Function

- 1 Press **M** to Scroll to Set Mode, Press confirm and select "Set T" or Set "TA"
- 2 If you are setting a Torque only preset see page 6 of these instructions
- 3 Press **↑** To select select "set TA"
- 4 Press **↑** **↓** To select the Preset number you want to use
- 5 Press **✓** to select your preset
- 6 Press **↑** **↓** To set the torque Value
- 7 Press **✓** to confirm the value
- 8 Press **↑** **↓** To select the Angle value you require
- 9 Press **✓** To confirm the Angle value
- 10 Press **M** To go to Preset menu
- 11 Press **✓** To select the Preset option
- 12 Press **↑** **↓** To select your required Preset
- 13 Press **✓** To store the readings you are taking
- 14 Press **M** To go to "Recall" to see results or view results on PCFE.

### Angle wrench User Information

A torque-angle wrench is used for applying torque, to fasteners or bolts, through a tightening angle, at a rotational angular velocity.

A gyroscopic sensor device coupled with existing electronic circuitry is added to the wrench. As the wrench is rotated through the tightening angle, its rotational angular velocity is sensed and converted, by appropriate sensing circuitry, into an electrical signal proportional in intensity to the rotational angular velocity of the wrench. The electrical signal can be electronically processed by appropriate conversion and display circuitry to provide a visual indication of the tightening angle.

The calibration of the Angle wrench occurs directly after regular calibration the user is prompted to rotate the wrench 180 degrees and press confirm

In Set Mode 99 Individual Preset showing Nominal, Min and Max Values or Torque and Angle can be set from Wrench Keypad or PC.

### Select Just Move or Just Angle from Wrench Menu

**Just Move - Operation** This function will display and hold the peak Torque value been applied, The Peak value will be displayed on the top row of the LCD, The bottom row will show Angular rotation. Once the torque reading is completed the display will show the following, Torque at 3 degrees – what the torque was when wrench was moved through 3 degrees  Final Peak Torque and final angle achieved.

**Just Angle - Operation** This function will show the torque and angle reading after a wrench has been rotated. The top of the screen will show   actual torque, while the bottom of the screen will show the angle reading as the wrench is rotated. The final torque and angle values are held with an option to store



## Mountz Service Locations

### Western US

1080 North 11th Street  
San Jose, CA 95112  
Phone: (800) 456-1828  
Fax: (408) 292-2733

E-mail: [sales@etorque.com](mailto:sales@etorque.com)  
[www.etorque.com](http://www.etorque.com)

### Eastern US

19051 Underwood Road  
Foley, AL 36535  
Phone: (251) 943-4125  
Fax: (251) 943-4979

### Mexico

Mountz Mexico SA de CV  
**Main Office & Service Center**

Av. Cristobal Colon #15343  
Col. Paseos de Chihuahua  
Chihuahua, Chih. Mexico CP  
31125

Phone: (614) 481-0023  
Fax: (614) 481-0053