



TW Series Digital Torque Wrenches

Torque and Angle Model User Manual

ASG, Division of Jergens, Inc.

15700 S. Waterloo Road | Cleveland, OH 44110-3898
Phone: (888) 486-6163 | Fax: (216) 481-4519
Email: asginfo@asg-jergens.com | Web: www.asg-jergens.com

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Basic Description and Guidelines

The TW Series Digital Torque Wrench Torque and Angle Model is a state of the art hand-held device suitable for both torque auditing and torque application. As a precision tool, it is highly accurate as well as highly repeatable. For product portfolio cohesion, the Torque and Angle Model uses the same organic LED display, membrane keypad, user interface and PC based data management software as other standard products within this range of electronic torque tools. Additionally, training time is kept to a minimum due to the ease of use of the tool itself.

Our products are demonstrated to have an accuracy of 1% or better, and are both simple to set and calibrate as well as coming with a fully traceable ISO 6789-2003 Certification.

The TW Series Digital Torque Wrench Torque and Angle Model has both visual and audible alarms that signal good or bad torque. Furthermore, there is a visual battery life indicator, alarms for preset value approach, fastener overload, range overload and maximum mechanical overload.

Recommended Use

The TW Series Digital Torque Wrench Torque and Angle Model is specifically designed for use in all industrial settings and applications where high accuracy and repeatability combined with a complete torque data management and control system are required.

General Characteristics

| | |
|------------------------|---|
| Accuracy | Right hand side torque = 1% of actual reading Left hand side torque = 1% of actual reading |
| Resolution | 0.01 to 50 N.m 0.1 to 999 N.m 1 to 2000 N.m |
| Alarms | Pre-Set Value Approach, Range Overload, Mechanical Overload, Low Battery, Memory Full |
| Memory Capacity | 5000+ Values |

Changing the Batteries

1. Unscrew the metal end cap at the opposite end of the wrench to the ratchet head
2. Remove the four AA cell batteries and replace with a new set
3. Screw back the metal end cap
4. Turn on the wrench and check to ensure the date and time are both set correctly



Basic Description and Guidelines (Cont.)

Ratchet Head Guidelines

- Store in a cool, dry location
- Oil frequently to prevent ratchet head from becoming stiff and seizing
- Do not exceed specified torques
- Do not use external forces on ratchet (i.e. a hammer)
- Max Torques: 1/4" = 30 N.m, 3/8" = 135 N.m, 1/2" = 340 N.m

Guidelines

The following are a set of general guidelines for using and storing the wrench that should be adhered to at all times.

- All torque tools are precision instruments and should be handled with care
- Do not subject the tool to torque loads in excess of the model range
- Do not use the tool to loosen fasteners tightened beyond maximum tool capacity
- Using non-linear extensions may affect the accuracy of the readings
- The use of torque extensions will increase the torque applied
- Do not operate the tool unless it has been powered on and the display screen can be read clearly
- Do not drop the tool or subject it to heavy impact blows
- Ensure the tool is stored in a cool, dry location to protect from damage
- Adhere to safety instructions
- Torque should be applied to the center of the torque wrench handle as torque is length dependent
- Ensure safe footing and safe force application

Calibration

For calibration instructions please contact ASG.



Modes of Operation

Torque reading starts at 5% of maximum capacity with an accuracy of 1% beginning at 10% of maximum capacity (threshold to maximum span).

The following are the different modes available with the TW Series Digital Torque Wrench Torque and Angle Model:

- Language Mode
- Unit Mode
- Date Mode
- Set Mode
- Just Angle Mode
- Just Move Mode
- Pre-Set Mode
- Recall Mode
- Upload Mode
- Clear Mode
- Comms Mode

Language Mode



The languages of operation available to the user are: English, Chinese, French, German, Italian, Polish, Portuguese, Russian, Spanish

Step 1: Press **M** to scroll to the Language Menu

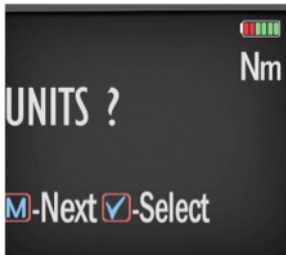
Step 2: Press **✓** to enter Language Menu

Step 3: Press **↑** **↓** to scroll to the language required

Step 4: Press **✓** to confirm operation in this language



Modes of Operation (Cont.)



Unit Mode – Keypad Function

The following units of measurement are available: kgf.cm, kgf.m, cN.m, N.m, ozf.in, lbf.in, lbf.ft

Step 1: Press **M** to scroll to the Units Menu

Step 2: Press **✓** to enter Units Menu

Step 3: Press **↑** **↓** to scroll to the units required

Step 4: Press **✓** to confirm selected units

Date Mode – Keypad Function

Step 1: Press **M** to scroll to the Date Menu

Step 2: Press **✓** to enter Date Menu

Step 3: Press **↑** **↓** to scroll to set the minute and hour

Step 4: Press **✓** to confirm

Step 5: Repeat steps 3 and 4 to set the month, date and year

Track Mode

As torque is applied, the driver will actively display the applied torque reading from 5% up to the maximum span of the device. Upon removal of the load, the display will return to zero.

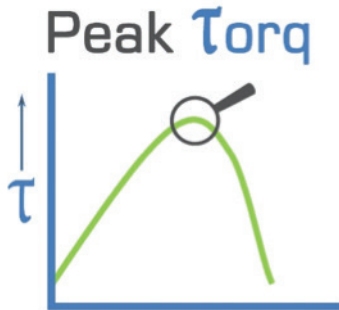
Step 1: Press **M** to scroll to Track Mode

Step 2: Press **✓** to operate in Track Mode



Modes of Operation (Cont.)

Peak Mode



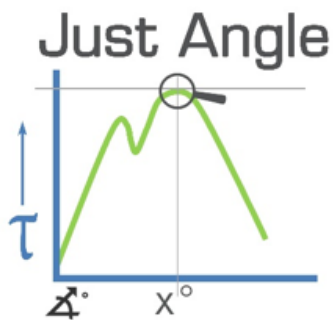
In Peak mode, the maximum torque reading will remain on the OLED display when the load is removed as long as the torque loaded is above the 10% of maximum capacity threshold. The user has the option to store the reading in memory. If storage of the reading is not required, the user may continue to the next measuring task.

Step 1: Press **M** to scroll to Peak Mode

Step 2: Press  to operate in Peak Mode

Step 3: Press  to store the peak value if required


Just Angle Mode



In Just Angle Mode, the maximum torque reading will remain on the OLED display when the load is removed as long as the torque loaded is above the 10% of maximum capacity threshold. The angle turned from 5% of the tool span until maximum torque reading is also displayed. 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.

Step 1: Press **M** to scroll to Just Angle Mode

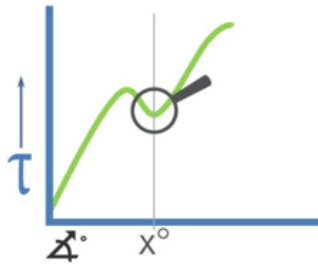
Step 2: Press  to operate in Just Angle Mode

Step 3: Press  to store the peak torque and peak angle values if necessary. If storage is not required, then apply a new load to test again



Modes of Operation (Cont.)

Just Move



Just Move Mode

In Just Move Mode, the torque recorded after a pre-defined number of degrees (defined in Set Mode) will remain on the OLED display when the load is removed, as long as the torque loaded is above the 10% of maximum capacity threshold. The final torque and final angle measurements will also be displayed. 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.

Step 1: Press **M** to scroll to Just Move Mode

Step 2: Press **✓** to operate in Just Move Mode

Step 3: Press **✓** to store the Just Move torque along with the final peak torque and angle values. If storage is not required, then apply a new load to test again.



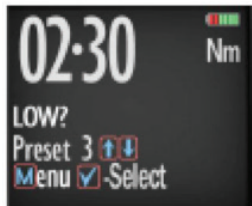
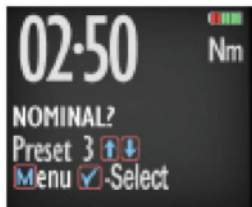
Modes of Operation (Cont.)

Set Mode

This mode allows the user to set limits for 1. Torque, 2. Torque and Angle or 3. Just Move. The operator can choose to set torque values by % or tolerance. During operation the OLED display will be green when approaching the pre-set tolerance and will change to red if exceeded.

The user can choose from the following Set Modes:

- Set Torque
- Set Torque & Angle
- Set Just Move Pre-Set



Set Mode – Torque:

Step 1: Press **M** to scroll to Set Mode

Step 2: Press **✓** to select Set Mode

Step 3: Press **↑** **↓** to scroll to set by % or set by tolerance

Step 4: Press **↑** **↓** to scroll to required pre-set number (i.e. 1 to 99)

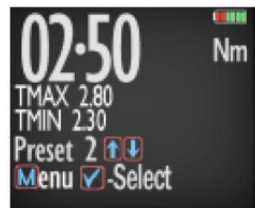
Step 5: Press **✓** to confirm pre-set number selected

Step 6: Press **↑** **↓** to set nominal value and **✓** to confirm

Step 7: Press **↑** **↓** to set your low value and **✓** to confirm

Step 8: Press **↑** **↓** to set your high value and **✓** to confirm

Step 9: Once the parameters have been confirmed the operator can find the task within Pre-Set Mode. Use **M** to select Pre-Set Mode from the main menu to find the task

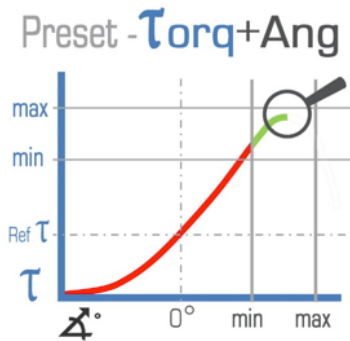


Modes of Operation (Cont.)

Set Mode (Cont.)

Set Mode – Torque and Angle:

This mode allows the user to prepare minimum and maximum acceptable limits for both torque and angle. The angle starts once the reference torque has been reached.



Step 1: Press **M** to scroll to Set Mode

Step 2: Press **✓** to select Set Mode

Step 3: Press **↑** **↓** to scroll to select Torque and Angle

Step 4: Press **↑** **↓** to scroll to required pre-set number (i.e. 1 to 99)

Step 5: Press **✓** to confirm pre-set number selected

Step 6: Press **↑** **↓** to set reference torque value and **✓** to confirm. Once this reference torque value is reached, the angle value will set to zero degrees

Step 7: Press **↑** **↓** to set low torque value and **✓** to confirm

Step 8: Press **↑** **↓** to set high torque value and **✓** to confirm

Step 9: Press **↑** **↓** to set low angle value and **✓** to confirm

Step 10: Press **↑** **↓** to set high angle value and **✓** to confirm



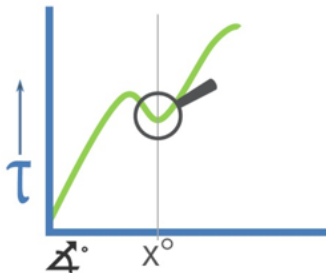
Modes of Operation (Cont.)

Set Mode (Cont.)

Set Mode – Just Move:

Just Move allows the user to measure torque after rotation of a pre-defined number of degrees. Degrees will count once load applied is above 5% of the maximum tool span. Torque will be captured at the angle defined here.

Just Move



Step 1: Press **M** to scroll to Set Mode

Step 2: Press **✓** to select Set Mode

Step 3: Press **↑** **↓** to scroll to select Just Move

Step 4: Press **↑** **↓** to scroll to required pre-set number (i.e. 1 to 99)

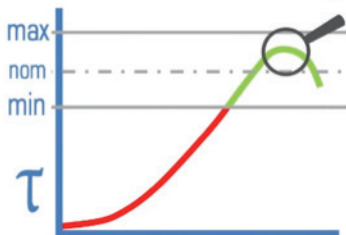
Step 5: Press **✓** to confirm pre-set number selected

Step 6: Press **↑** **↓** to set just move pre-set angle and **✓** to confirm

Pre-Set Mode

In Pre-Set mode, the operator chooses their preferred 'Pre-Set' for operation from their pre-configured pre-sets (using Set Mode). For Torque and Angle Mode wrenches, the user can choose between Torque, Torque and Angle and Just Move pre-sets.

Preset Torq



Step 1: Press **M** to scroll to Pre-Set Mode

Step 2: Press **✓** to enter Pre-Set Mode

Step 3: Press **↑** **↓** to select your preferred pre-set number (i.e. 1 to 99)

Step 4: Press **✓** to operate within this pre-set parameter

Step 5: Press **✓** to store the applied torque if required




Modes of Operation (Cont.)

Recall Mode

This mode allows the user to view the stored torque and angle data. Only locations containing data will be displayed. Note that as data is stored, the locations are populated sequentially from 01.

Step 1: Press  to scroll to Recall Mode

Step 2: Press  to enter and view memory locations, results and functions

Step 3: Press   to scroll through locations that contain data

Upload Mode

This mode allows the user to upload stored torque data. In Upload mode, the driver must be connected to a PC running the PC Front-End Software (PCFE) via the USB port on the Driver and the PC.

Step 1: Press  to scroll to Upload Mode

Step 2: Press  to enter Upload Mode

Step 3: Press  to select "From" and   for end location to be uploaded

Step 4: Press  to confirm "From" location

Step 5: Press  to select "To" and   for end location to be uploaded

Step 6: Press  to confirm. You are asked if you are sure, press  to confirm



Modes of Operation (Cont.)

Comms Mode

This mode allows the user to select the method of communication. The standard model allows communication by standard USB cable to the included software. For communication by ASCII or BINARY, the wrench will need physical modifications in advance.

Step 1: Press  to scroll to Comms Mode

Step 2: Press  to enter Comms Mode

Step 3: Press   to select the method of communication and  to confirm


Note: For standard communication to the included software program, select 'PCFE'

Clear Mode


This mode allows the user to clear the stored data from an individual range of locations. 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.


Step 1: Press  to scroll to Clear Mode

Step 2: Press  to enter Clear Mode

Step 3: Press   to select "From" range to be cleared and press  to confirm

Step 4: Press   to select "To" range to be cleared and press  to confirm

Step 5: Press  to confirm and you will be asked if you are sure

Step 6: Press  to confirm and that the range of the data is cleared from the wrench memory