

## ETX Torque Wrench Operation Instructions

Rev 2.0 (5/10/2011)

### ETX Application Examples

ETX torque wrench sensor is an instrument designed for auditing or tightening fasteners to a specified torque when mated with a torque analyzer.



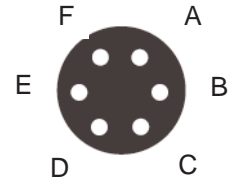
### Operating ETX

Make sure the application is within the torque range of the ETX model. If the application is under the torque range, then the accuracy may not be reliable. If the application is over the torque range, then you may overtorque the ETX and damage the sensor.

Connect the ETX to a Torque Analyzer and follow the instructions in the Torque Analyzer manual for accessing external transducers. Fit a socket or suitable drive element to the square drive of the ETX. Select the appropriate operating mode setting on the torque analyzer menu. Then apply or measure torque by pulling the handgrip of the ETX. You may require adapters for the application or for calibration. Always make certain adapters are as short as possible and fit properly, with little “play.”

### ETX Pin Diagram

Wiring Code	
Signal (-) :	A
Signal (+) :	B
Excitation (-) :	C
Excitation (+):	D
Memory Circuit	
Digital Clock:	E
Memory Circuit	
Digital I/O:	F



### Torque Testing & Auditing Methods

There are three common methods that have been established to provide an accurate reference to the applied torque.

- 1) First Movement Test - Once the fastener has been tightened, use the SDX. Mark the tightened fastener and surrounding application. In the tightening direction, begin to slowly apply force to the tool until the first movement in the fastener is noted. The reading recorded is a good indication of the original torque applied to the joint. This is the best way to determine residual torque.
- 2) Loosening Test - This is a similar process to the first movement test described above, except instead of the tightening the fastener, the torque is applied in the direction that loosens the fastener. At the point the fastener breaks loose, the torque reading is recorded. The torque value to loosen the fastener is the approximate torque that was applied to the joint.
- 3) Marking Test - Once the fastener tightened, mark clearly the surface of the fastener, nut or bolt and continuing the mark onto the surface being clamped for reference. This time loosen the fastener and retighten until the marks on both application and fastener are aligned. The torque required to return the fastener to its original location is the reference to the original torque applied to the fastener.

What is Residual Torque? It is the amount of tension that remains in a joint after fastening a threaded fastener.

### Calibration Procedures

1. Attach the ETX securely to a special fixture device.
2. Connect the ETX to a torque analyzer/display. Review the torque range of the transducer and select the appropriate measurement units.
3. Determine type of calibration to be performed.
 

<i>Calibration at 3 Pts.</i>	<i>Test at 10%, 50% and 100 of Full Scale.</i>
<i>Calibration at 6 Pts.</i>	<i>Test at 10%, 20%, 40%, 60% 80% and 100 of Full Scale.</i>
<i>Direction</i>	<i>Clockwise and/or Counter Clockwise</i>
4. Select the appropriate Calibration Arm or Wheel and attach it.
5. Gently connect the Hanger to the Calibration Arm or wheel.



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### Calibration Procedures (continued)

6. Load 3 times to minimum 80% FS in direction of operation and reset to zero after loading.
7. Apply series of increasing torques in direction of operation starting from the lowest test point.
8. Record readings from the test device at each test point prior to performing any adjustments.
9. Repeat steps 6-8 in the opposite direction (if required).
10. Perform calibration adjustments. Repeat test as described above until readings at all test points are within tolerances.
11. Repeat test as described above and record 5 readings from test device at each test point. Compile all necessary details to generate test report.
12. Remove old calibration label and place new label on transducer.

### Mountz Calibration & Repair Services

Mountz Inc. features an experienced calibration and repair staff. Our trained technicians can calibrate and repair most any tool. Mountz provides rapid service with quality that you can trust as we offer three state-of-the-art calibration lab and repair facilities that can calibrate up to 20,000 lbf.ft.

With over 45 years of experience, Mountz's in-depth knowledge of torque is reflected in our tool's craftsmanship and our ability to provide solutions to both common and uncommon torque applications. We perform calibrations in accordance with ANSI/NCSL-Z540. Mountz is dedicated solely to the manufacturing, marketing and servicing of high quality torque tools.

Mountz is an ISO 9001 certified and ISO 17025 accredited company.

### Tool Service & Repair Capability

- Torque Wrench Calibration: Click Wrench, Dial Torque Wrench, Beam Wrench, Cam-Over & Break-Over Wrench
- Torque Screwdrivers: Dial, Micrometer, Preset & Adjustable
- Torque Analyzers/Sensors: All brands
- Electric Screwdrivers: All brands
- Air Tools: All brands  
Impact Wrenches, Drills, Pulse Tools, Grinders, Percussive Tools, Air Screwdrivers, Nutrunners, DC Controlled Nutrunners
- Torque Multipliers: All brands

### Mountz Service Locations

#### Eastern Service Center

19051 Underwood Rd.  
Foley, AL 36535  
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#### Western Service Center

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Download a "Service Form" and include a copy when you send the tools in to be serviced.

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