

# DIGITAL TORQUE TESTER

# QUICK

## TIP CARD

## WHAT YOU NEED TO KNOW

The *DIGITAL TORQUE TESTER (DTT)* allows technicians to conveniently test the accuracy of various style torque wrenches while validating the user's technique when applying the correct amount of force.

When using any style torque wrench, there is one variable often overlooked — the technician performing the torque procedure. Even the most qualified technician can over-torque or under-torque a fastener without realizing it using the best and most accurate torque wrench. Having proper technique is key when using any style torque wrench.

Read both *DIGITAL TORQUE TEST* and applicable *TORQUE WRENCH OPERATION MANUAL* before using any equipment. Follow all safety precautions and instructions prior to testing.

## TESTS MOST FREQUENTLY USED

1. *ELECTRONIC OR DIAL (PEAK HOLD MODE)*: This function utilizes Peak Hold or the maximum applied torque simulating how much actual torque was applied. Use this mode to test Electronic, beam or dial torque wrenches.

2. *CLICK-STYLE (FIRST PEAK MODE)*: Used to perform a single-point check on a click-style torque wrench to show the accuracy of that setting. Displays the final value at the moment the mechanical click operation occurs.

## TEST ELECTRONIC, BEAM OR DIAL WRENCHES (PEAK HOLD MODE)

1. Turn Digital Torque Tester **ON** and select **TEST**.
2. Select **ELECTRONIC** or **DIAL** and then **QUICK CHECK**.
3. Adjust the **TGT. TORQUE** by pressing the **CHANGE** button.
  - a. If performing a specific service procedure, set the tester to the target torque identified in the service procedure.
  - b. If testing a wrench in general, set the tester to 50% of the wrench's maximum torque range.
4. To change the units, press the **UNITS** button until desired units are displayed in the top right-corner and press **NEXT**.
5. Press **TEST** button to begin testing.
6. Adjust torque wrench to match settings on tester.
7. On tester, there are three color-coded zones:
  - **YELLOW** zone indicates the torque applied is too low,
  - **GREEN** zone shows the wrench is within +/- 4.0% of acceptable tolerance and
  - **RED** zone indicating torque was exceeded and too high.
8. When applying force, focus your attention on the wrench. Only refer to the tester after completing each pull to compare results.
9. Firmly grip wrench in center of handle, slowly pulling up. Stop applying force immediately when the wrench beeps, vibrates, or lights up, indicating target torque has been reached.
10. Use this time to practice getting familiar with the wrench and how it responds.
11. Pull a minimum of 3 times to ensure repeatability and accuracy.
  - a. If the wrench indicates proper torque but the torque tester's display shows a different result with a variation greater than +/- 4.0%, this indicates the wrench requires calibration. Contact **Navistar Product Support Center** to have the wrench calibrated.
  - b. If the wrench indicates proper torque and the torque tester's display shows the same or similar results within +/- 4.0%, this indicates the wrench is accurate and the technician is using proper technique.
  - c. If both the wrench and tester show results outside of the acceptable range (+/- 4.0% tolerance), this indicates the technician's technique needs some improvement. Reference the **Torque Talk** pamphlet and continue testing until you are able to hit the target torque successfully at least 3 times.
12. Completing Step 11 successfully indicates that the torque wrench is accurate and that the technician's technique is acceptable.
13. Turn tester **OFF**. Test is complete.

**IT IS NORMAL TO SEE +/- 4.0% DIFFERENCE BETWEEN THE TESTER AND THE ELECTRONIC WRENCH**

# TEST CLICK-STYLE WRENCHES

(FIRST PEAK MODE)

## PART 1:

### TESTING THE WRENCH

1. Turn Digital Torque Tester **ON** and select **TEST**.
2. Select **CLICK-STYLE** and then **QUICK-CHECK**.
3. Adjust the **TGT. TORQUE** by pressing the **CHANGE** button.
  - a. If performing a specific service procedure, set the tester to the target torque identified in the service procedure.
  - b. If testing a wrench in general, set the tester to 50% of the wrench's maximum torque range.
4. To change the units, press the **UNITS** button until desired units are displayed in the top right-corner and press **NEXT**.
5. Press **TEST** button to begin testing.
6. Adjust torque wrench to match settings on tester.
7. On tester, there are three color-coded zones:
  - **YELLOW** zone indicates the torque applied is too low,
  - **GREEN** zone shows the wrench is within +/- 4.0% of acceptable tolerance and
  - **RED** zone indicates the torque applied is too high.
8. Firmly grip in the center of handle slowly pulling up and immediately stop applying force upon the click of the wrench.
9. The torque applied at the instant click action of the wrench will register on the tester LCD display.
10. Use this time to practice getting familiar with the wrench and how it responds.
11. Pull a minimum of 3 times consistently and repeatedly achieving target torque on the tester within the **GREEN** zone.
  - If results are outside the **GREEN** zone, verify settings on wrench are correct and refer to the **Torque Talk** information pamphlet included in kit for additional tips and common mistakes to help achieve proper torque.
  - If results are still outside the **GREEN** zone, this indicates the wrench is out of calibration. Contact **Navistar Product Support Center** to have the wrench calibrated.
  - If after 3 pulls and the results displayed on the tester are consistently in the **GREEN** zone, the wrench is measured as accurate and within acceptable tolerance of +/- 4.0% of target torque. Continue to "**Part 2: Testing the Technician & Wrench**"

## ATTENTION:

This particular portion of the test is checking the technician's technique which can greatly affect the accuracy of a torque wrench. The technician is considered the highest variable when using a torque wrench.

## PART 2:

### TESTING THE TECHNICIAN & WRENCH

1. Press **MAIN MENU**, select **TEST**, select **ELECTRONIC** or **DIAL** and **QUICK-CHECK**.
2. Verify target torque value has not changed and select **TEST**.
3. Firmly grip in center of handle and slowly pull up on wrench until it clicks.
4. Pull a minimum of 3 times consistently and repeatedly achieving target torque on the tester within the **GREEN** zone.
  - If successful, this indicates the operator is using proper technique and is accurate.
  - If after several attempts of failing to achieve target torque, refer to the **Torque Talk** information pamphlet included in kit for additional tips and common mistakes to help achieve proper technique. Continue to retest until you can achieve consistent results in the **GREEN** zone. Keep in mind, the prior test was used to verify the wrench is accurate and capable of achieving the target torque. Any results outside of the **GREEN** zone while performing this test are solely the result of the technician.
5. Turn tester **OFF**. Test is complete.