

TWL 1500
TORQUE WRENCH LOADER



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SAFETY

- The TWL 1500 is heavy. Take care when installing.
- Ensure the operating area is capable of taking the weight of the TWL 1500.
- Trapping hazard - Keep hand and loose clothing away from the torque wrench during use.
- To avoid damage to the torque wrench under test do not exceed the wrench set torque value.
- To avoid damage to the transducer do not exceed the maximum capacity.
- Never exceed the maximum torque capacity of the TWL 1500 (1500 N·m / 1100 lbf·ft).
- Do not operate without a torque measurement system connected and working.
- The TWL 1500 is designed for testing torque tools, do not use for other purposes.

INTRODUCTION

This manual covers Torque Wrench Loader TWL 1500 (Part No. 60246).

The Norbar TWL1500 Torque Wrench Loader is designed to test torque wrenches up to a maximum capacity of 1500 N·m.

Any torque wrench within the systems maximum capacity can be tested in the horizontal plane to their appropriate standard.

To measure the applied torque a torque transducer coupled to an appropriate display instrument is required.

The TWL1500 can be equipped with:

- Up to 3 Flange Mounted Transducers from 10 N·m to 1500 N·m (100 lbf·in to 1000 lbf·ft) Capacity.
- A Pro-Test Transducer of 400 N·m Capacity. (Part No. 43219)
- A Pro-Test Transducer of 1500 N·m Capacity. (Part No. 43220)

Parts Included

- Stand
- Frame assembly bolt kit
- Transducer plate
- Loading device assembly
- Display stand
- Display stand base
- Display support arm
- Display stand bolt kit
- Flange mounted transducer spacers (2 off)
- Flange mounted transducer bolt kit
- Pro-Test adaptor plate
- "SMART" Torque Block bolt kit

ASSEMBLY INSTRUCTIONS

A. Assembly of Transducer Plate to Stand

1. Align flanges of transducer plate and use the frame assembly bolt kit (M10 bolts, washers and nuts) to fasten.
2. Tighten bolts to 20 N·m.

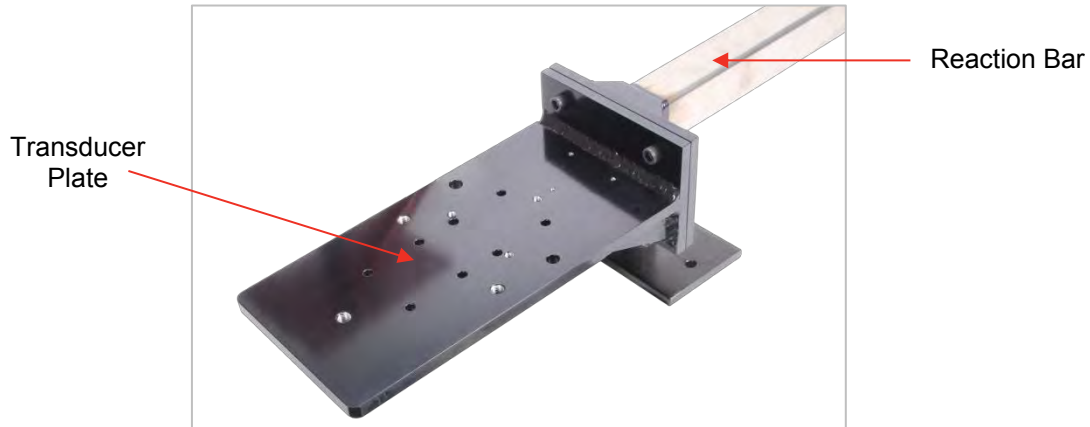


FIGURE 1 – Attaching Transducer Plate

B. Assembly of Loading Device to Stand

1. Remove the 2 thumb screws and the clamp plate from the loading device.
2. Position the loading device onto the stand ensuring that the hand wheel is on the side of the operator.
3. Reconnect the clamp plate using the 2 thumb screws and tighten in the desired position along the stand.
4. Screw the handle to the hand wheel and tighten the locknut.
5. Slide the support bobbin onto the reaction post.

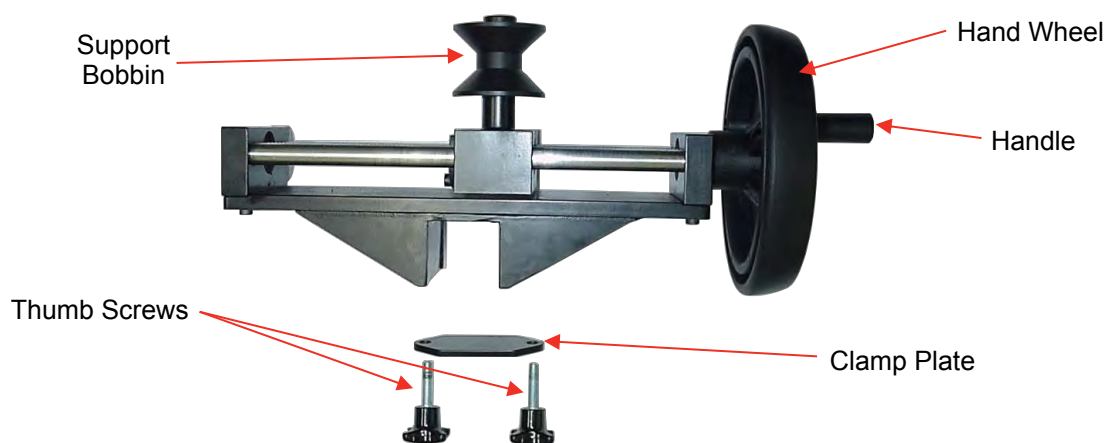


FIGURE 2 - Loading Device

C. Assembly of the Display Stand

1. Screw the display stand to the display stand base using 2 off M5x16mm long screws.
2. Insert the display stand base into the display support arm and tighten using the thumb nut from the display stand bolt kit.
3. Attach the support arm to the transducer plate and fasten using the M10x50mm long screw and thumb nut from the display stand bolt kit.

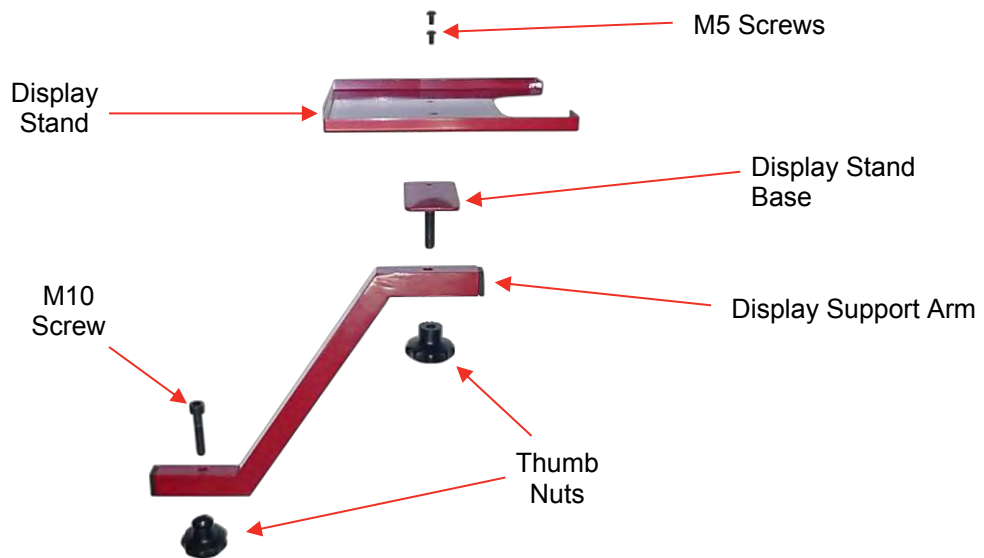


FIGURE 3 – Display Stand Assembly

D. Assembly of Flange Mounted Transducers to Transducer Plate.

1. Place the spacers for the smaller transducers in the position shown below.
2. Attach the transducers to the transducer plate in the positions shown below using the bolts supplied in the Flange Mounted Transducer bolt kit. Tighten the M5x75 bolts to 5 N·m, the M8x60 bolts to 10 N·m and the M12x30 bolts to 15 N·m.
3. Ensure that the cables are extending out to the display stand side of the unit.
4. Connect the transducer lead to the Torque Tool Tester display instrument and mount it on the display stand. Connect the power supply to the Torque Tool Tester.

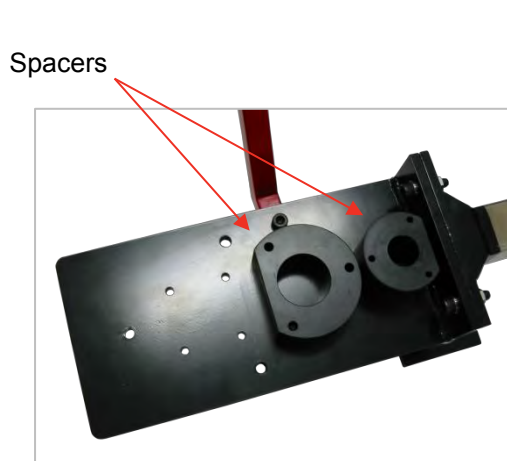


FIGURE 4 – Spacers

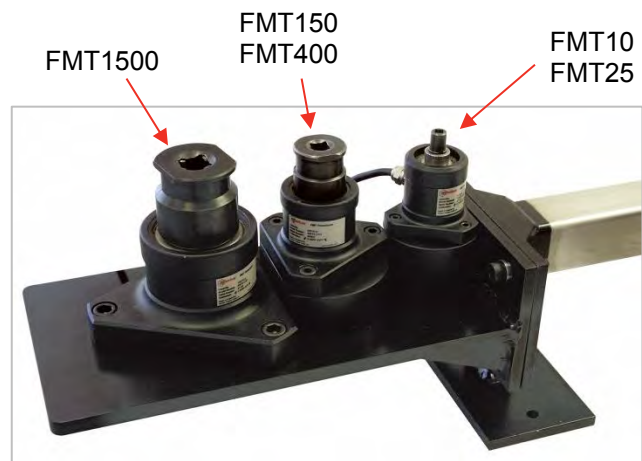


FIGURE 5 – Transducer Positions

E. Assembly of Pro-Test Transducer

1. Place the Pro-Test adaptor plate in the position shown below.
2. Fasten the Pro-Test adaptor plate to the transducer plate using the 3 off M12x30mm long bolts from the flange mounted transducer bolt kit. Tighten to 15 N·m.
3. Fasten the Pro-Test Transducer to the adaptor plate in one of the two mounting positions using the shoulder bolts provided with the Pro-Test.

IMPORTANT: BOLTS MUST BE TORQUE TIGHTENED TO 50 N·M. AND REPLACED WHEN REMOVED. REFER TO PRO-TEST OPERATOR'S MANUAL.

4. It is recommended that the Pro Test 1500ER Transducer be fastened to the furthestmost position from the loading device. The Pro-Test 400 Transducer is to be fastened to the closest position to the loading device.
5. Mount the Pro-Test Display unit on top of the Pro-Test and connect to the transducer.
6. Connect the power supply to the Pro-Test unit

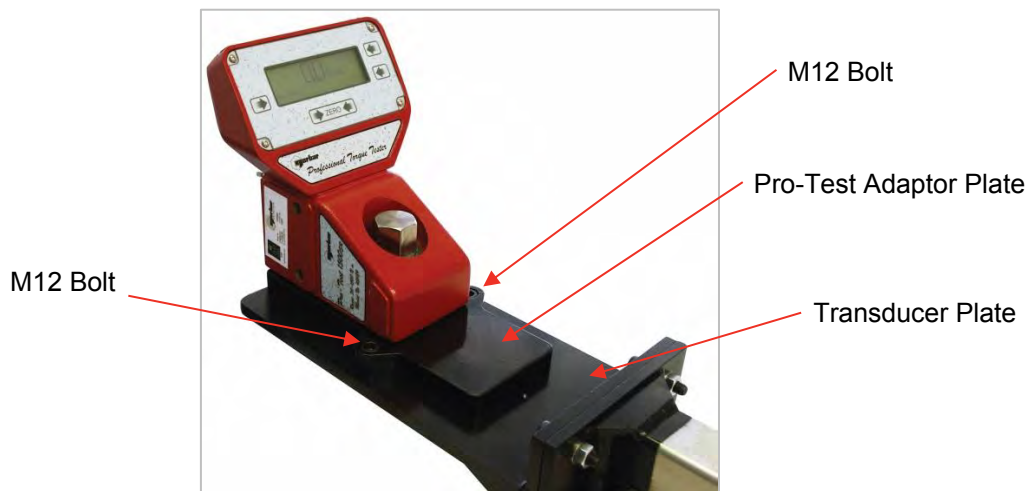


FIGURE 6 – Fitting a Pro-Test

F. Assembly of “Smart” Torque Block Transducer

NOTE: This product is now obsolete.

1. Attach the “SMART” Torque Block directly to the transducer plate using the 4 off M8x25mm long bolts from the “SMART” Torque Block bolt kit. There are two mounting positions to choose from on the transducer plate shown below.
2. It is recommended that the “SMART” Torque Block be mounted in the furthestmost position from the loading device, unless it is deemed necessary to mount it closer to the loading device due to the length of the torque wrench being tested.
3. Tighten bolts to 42 N·m.
4. Connect the “Smart” Torque Block transducer lead to the Torque Tool Tester display instrument and mount it on the display stand.
5. Connect the power supply to the Torque Tool Tester.

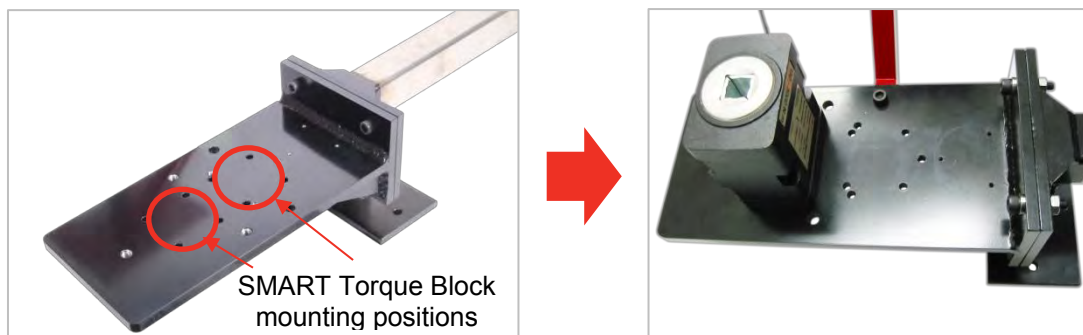


FIGURE 7 – SMART Torque Block Positions

OPERATING INSTRUCTIONS

Machine Installation

Secure the TWL 1500 onto a sturdy bench making sure there is enough room around the unit for the display stand and for the loading device to move freely along the length of the stand.

Important Notes

1. Ensure that the bolts fastening the transducer plate to the stand are torque tightened to 20 N·m.
2. Always ensure loading device is firmly clamped before loading the rig.
3. Always ensure the transducer leads are not caught up in the mechanism.
4. To ensure trouble free use, periodically check that the screw thread and guide rails on the loading device are lubricated with good quality machine oil.

Wrench Installation

1. Slide the loading device assembly along the reaction bar far enough to allow clearance for the torque wrench to be installed in the TWL 1500.
2. Select the lowest capacity torque transducer to cover the wrench to be tested.
3. With the handle of the wrench running along the length of the reaction bar, mount the torque wrench to be tested in the female square drive of the selected torque transducer.
4. Slide the loading device assembly along the reaction bar so that the support bobbin is reacting against the normal hand position of the wrench. This is usually the centre of the wrench hand grip.
5. If the wrench is fitted with a square drive ratchet ensure that the orientation of the square drive allows maximum travel of the wrench handle by the support bobbin.
6. Orientate the support bobbin so that the wrench maintains a horizontal position during testing.
7. Firmly tighten the clamp plate of the loading device before loading the rig.
8. Turn the hand-wheel smoothly to apply load to the torque wrench.
9. Follow the appropriate calibration procedures for the torque wrench being tested.

NOTE: In the case of a ratchet wrench with push through square drives, it is important to ensure the square is operating on the correct side of the ratchet.



SPECIFICATIONS

Minimum Output Torque:	1 N·m
Maximum Output Torque:	1500 N·m
Wrench Orientation:	Horizontal
Calibration Direction:	Clockwise and Anti-Clockwise
Dimensions:	Width 730 mm Length 1720 mm Height 345 mm
Weight:	32 kg (70.5 lb)

Available Options

1. Norbar Torque Tool Tester display instrument (part no.43228) or T-Box XL instrument (part no.43258) and Flange Mounted Transducers ranging from 10 N·m (100 lbf-in) to 1500 N·m (1000 lbf-ft).
2. Norbar Torque Tool Tester display instrument (part no.43228) and STB1000 "SMART" Torque Block. (part no.50683.LOG)
3. 400 Pro-Test transducer (part no. 43219)
4. 1500 Pro-Test transducer (part no. 43220)

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