

TruCheck™ Models 3 N.m 1 N.m and 25 N.m

Simple, Cost Effective Torque Testing

The importance of keeping your torque tools in peak calibration condition is well established. Many businesses achieve this by using a third party calibration service. However, how much more convenient would it be to perform calibration checks in-house. Tools could be checked more frequently, immediately if a problem is suspected, and tools would not need to leave site unnecessarily.

The main reasons that more companies do not perform calibration checks on their own tools are the cost of testers and fears over the complexity of the testing equipment. Norbar's 'TruCheck' torque screwdriver testers aim to sweep aside these concerns. They are very cost effective being significantly cheaper than most similar products on the market and the basic version of the TruCheck particularly is very simple to use.

The product comes in two versions: there is a basic version, simply called 'TruCheck' and a version with greater functionality called 'TruCheck Plus'.



TruCheck Plus 3 N.m and 10 N.m



TruCheck 25 N.m

Technical Specification

Accuracy: $\pm 1\%$, ± 1 digit over the stated operating range.

Display: 4 digit, 7 segment LED.

TruCheck 3 N.m and 10 N.m

Drive Size: 1/4 male hexagon (vertical)

Dimensions in mm: 64(d) x 175(w) x 72(h)

Weight: 2.6 kg shipping

TruCheck 25 N.m

Drive Size: 1/4 male hexagon (horizontal) - supplied with 1/4 and 3/8 female square drive adaptors

Dimensions in mm: 72(d) x 175(w) x 64(h)

Weight: 2.6 kg shipping

Materials/Finish: Powder coated aluminium housing.

Stainless steel transducer shaft.

TruCheck™

Model	Part No.	Range
TruCheck 3 N.m	43253	0.1 - 3 N.m
TruCheck Plus 3 N.m	43250	0.1 - 3 N.m
TruCheck 10 N.m	43254	1 - 10 N.m
TruCheck Plus 10 N.m	43251	1 - 10 N.m
TruCheck 25 N.m	43255	1 - 25 N.m
TruCheck Plus 25 N.m	43252	1 - 25 N.m



TruCheck™ Models 35 N.m 1 N.m and 2 N.m

One of the concerns in putting a torque tester into an environment where people are not calibration specialists is that incorrect selections will be made with the potential for incorrect tool setting and consequently tool failure. Norbar's solution is to remove all choices from the operator. The TruCheck is for click type torque wrenches and comes with a single measurement unit (N.m or lbf.ft). There is only one button on the device and that is to zero the display. Operation is simplicity itself and it is virtually impossible to go wrong



TruCheck 10 - 350 N.m

TruCheck™

Model	Part No.	
TruCheck 350 N.m	43221	10 - 350 N.m
TruCheck 250 lbf.ft	43226	10 - 250 lbf.ft
TruCheck 1000 N.m	43230	100 - 1000 N.m
TruCheck 750 lbf.ft	43237	75 - 750 lbf.ft
TruCheck 2000 N.m	43244	200 - 2000 N.m

Technical Specification

Accuracy: +/-1%, +/-1 digit over the stated operating range.

Display: 4 digit, 7 segment LED.

TruCheck N.m and 2 lbf.ft

Drive Size: 1/2 female square

Dimensions in mm: 145.5(d) x 150(w) x 85(h)

Weight: 3.2 kg shipping

TruCheck N.m and 7 lbf.ft

Drive Size: 27mm male hexagon supplied with 3/4 square drive socket

Dimensions in mm: 145.5(d) x 175(w) x 85(h)

Weight: 4.8 kg shipping

TruCheck 2 N.m

Drive Size: 27mm male hexagon supplied with 1 square drive socket

Dimensions in mm: 145.5(d) x 175(w) x 85(h)

Weight: kg shipping

Materials/Finish: Self coloured rigid polypropylene case.

Stainless steel transducer shaft and zinc plated steel base plate.



Power Tool Test Fixture For TruCheck™, 1000 N.m and 750 lbf.ft (Part Number 50757) 2000 N.m, (Part Number 50774)

These Power Tool Test Fixtures incorporate a Joint Simulation Rundown Assembly, base plate, reaction plate, drive adaptors and a reaction adaptor. When used in conjunction with a TruCheck Plus 1000 or TruCheck Plus 2000, provides a cost effective means of testing Norbar's PTM-52, PTM-72 and PT72 tools. The Joint Simulation elements can be purchased separately for customers wishing to design their own reaction fixtures; part number 50758 for 1000 N.m and 50775 for 2000 N.m. These joint simulators are not recommended for use with impact or impulse type wrenches.

TruCheck™ Plus

Accepting that some customers require more flexibility than the basic TruCheck provides, the 'Plus' adds a comprehensive range of features. With three modes of operation the TruCheck Plus is suitable for click wrenches, dial and electronic wrenches and in 'Track' mode will continuously monitor the torque signal.

There are three torque units - N.m, lbf.ft and lbf.in.

TruCheck Plus also has a user selectable 'limit' feature. The operator sets the target torque and tolerance and the instrument will calculate whether the reading is within tolerance and indicate the result by illuminating one of three coloured LEDs: yellow = low, green = OK, red = high.

Finally, TruCheck Plus has an RS-232 serial data output and comes complete with an RS-232 lead. The reading, measurement unit and limit status (Low, OK or High) are output via RS-232.



TruCheck Plus 100 - 1000 N.m
3/4 socket is supplied

TruCheck™ Plus

Model	Part No.	Range
TruCheck Plus 350 N.m	43222	10 - 350 N.m
TruCheck Plus 1000 N.m	43231	100 - 1000 N.m
TruCheck Plus 2000 N.m	43245	200 - 2000 N.m

Calibration Options

TruCheck instruments are supplied as standard with a traceable calibration certificate for the clockwise direction. As an option, UKAS accredited calibration certificates from Norbar's laboratory can be supplied, either clockwise only or clockwise and counter clockwise.

Part No.	Description
TCACC.CW	UKAS accredited calibration clockwise
TCACC.CW CCW	UKAS accredited calibration clockwise and counter clockwise

Note: UKAS accredited calibration is from 5% to 100% of full scale for part numbers 43243, 43221, 43226, 43222 43250, 43251, 43253 43255 and 10% to 100% for part numbers 43230, 43231, 43237, 43244, 43245, 43251 43254.

Professional Torque Tester Pro-Test Series 2

The accuracy, ease of use and price competitiveness of the Pro-Test instrument has made it the choice of many industrial, military and automotive customers worldwide. The Pro-Test Series 2 has many features designed to make life easier and reduce the opportunities for error when calibrating torque wrenches.

Features

- Pictorial display panel for easy mode selection.
- Limit detection with low, pass and high indication both on the screen, and by coloured LEDs. Limit status is also output via RS-232-C. Target torque and tolerance can be set by the operator.
- ISO 6789 calibration mode automatically calculates the torque wrench calibration points and tolerance. All the user has to do is set the maximum calibration point for the wrench – the instrument does the rest for you
- Memory function displays the 5 previous readings taken by the operator. For operators creating manual calibration certificates, there is no need to stop and write after each reading, hence speeding the process.
- Carry case is now a standard feature.
- RS-232 cable included as standard.



Pro-Test display and transducer in carry case.



flexible mounting options of Pro-Test on Bracket, Part No. 62198

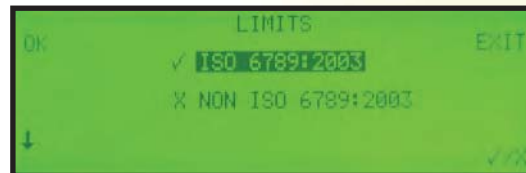


Professional Torque Tester Pro-Test Series 2

- Supplied with UKAS accredited calibration certificate.
- Guaranteed classification to BS7882:2008, Class 1 or better over the primary calibration range (20% to 100% of full scale), Class 2 or better over the secondary calibration range (lowest calibrated value to 20% of full scale). Class 1 equates to $\pm 0.5\%$ of reading.
- Three transducers are available in the range, up to 1500 N.m (1100 lbf.ft).
- Three essential operating modes allow the Pro-Test to be used with all torque wrench types: 'Track' displays the live value, 'Peak Memory' records the highest value and 'First Peak Memory' records the first peak of torque (for click type torque wrenches). Both memory modes can be used with manual or automatic reset.
- Large back lit display is easily visible from a distance and in poor light.
- All common units of torque measurement are included.
- User can select the language they wish to work in (most European languages are included).
- Transducer can be mounted for torque wrench operation in the horizontal or vertical plane.
- RS-232-C is included for the output of reading to a printer, PC, data capture unit, SPC software etc.
- Optional mounting plate, Part No. 62198 gives greater flexibility of mounting options.
- All user settable parameters are menu selectable from the front panel.
- As standard, all transducers are calibrated in a clockwise direction. For additional anti clockwise direction order Part No. PROTEST.CCW.



Measure Screen



Limit type selection

Pro-Test

Model	Part No.	Operating Range	Calibrated Range	System Resolution	Input Hex A/F	Square Drive Adaptor
		N.m	N.m	N.m	mm	in
Pro-Test 60	43218	0 - 60	1.2 - 60	0.001	10	¼ ⅜ ½
Pro-Test 400	43219	0 - 400	8 - 400	0.01	22	⅜ ½ ¾
Pro-Test 1500	43220	0 - 1500	30 - 1500	0.1	36	¾

Pro-Test Ancillaries

Part No.	Description
60253	12V DC Power Supply*
62198	Mounting Plate
PROTEST.CCW	Pro-Test Counter Clockwise Calibration

* Option only necessary when powering from a 12V DC vehicle battery.

Torque Screwdriver Tester TST - Series 2

The TST combines simplicity with up to date technology to provide a high quality instrument for the testing and calibration of low capacity torque tools.

Featuring an internal transducer complete with Joint Simulation Rundown Assembly, the TST is available in 3 torque ranges, 0.04 to 2 N.m, 0.5 to 10 N.m and 1.25 to 25 N.m. Class 1 system accuracy over its Primary range ($\pm 0.5\%$ of reading from 20% to 100% of full scale).

What makes the TST genuinely versatile is the interface for an external transducer. This interface, accessed by a 2 way switch in the TST, allows the connection of any transducer from Norbar's SMART range and most mV/V calibrated transducers from Norbar or other manufacturers.

Norbar is UKAS accredited for the calibration of electrical torque indicator displays and the TST is supplied with a calibration certificate. This ensures that each element of the system is fully traceable and interchangeable.

The TST is also supplied with a UKAS torque calibration certificate for the complete system i.e. display and internal transducer.



Back Panel



TST in standard carry case,

Torque Screwdriver Tester TST - Series 2

- Pictorial display panel for easy mode selection.
- Limit detection with low, pass and fail indication. Up to 12 target values can be set.
- Digital limit state output for control of external tools.
- Operation from fast charge internal battery pack (maximum time of 3 hours 20 minutes for full charge) or a.c. supply (90 to 264 Volts).
- RS-232-C serial data interface for connection to a printer or PC. Continuous RS 232 output when used in track mode (up to 11 readings per sec).
- Pulse count feature in Impulse mode and Clutch Tool mode.
- SMART" intelligence for transducer recognition.
- Memory for calibration details of 20 non- SMART" mV/V calibrated transducers.
- Analogue output allows the instrument to be used as part of a process control system for performance analysis.
- User selectable frequency response for each mode of operation.
- All user selectable features have password protection. The instrument can be issued to users with only the required modes of operation and units of measure enabled. This feature can virtually eliminate operator induced errors.
- Supplied in carry case.
- All common measurement units for torque are included plus users can configure their own units to interface with non torque transducers.



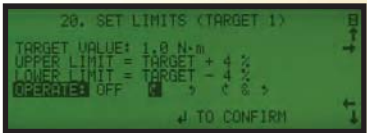
TST

Model	Part No.	Range	
		N.m	lbf.in
TST 2	43212	0.04-2	0.4-20
TST 10	43213	0.5-10	5-100
TST 25	43214	1.25-25	12.5-250

TST Ancillaries

Part No.	Description
60216.200	TST to 10 Way lead, for Norbar Rotary Transducers
60217.200	TST to 6 Way lead, for Norbar Static & Annular Transducers
TST.CCW	TST Counter Clockwise Calibration
50539*	oint Simulation Rundown Assembly 2 N.m
50540*	oint Simulation Rundown Assembly 10 N.m
50541*	oint Simulation Rundown Assembly 25 N.m

*The TST comes with a oint Simulation Rundown Assembly as standard.
These Part No.s are for replacement or additional fixtures only.

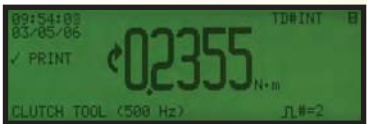


Limit Setting Screen

Accuracy when used with external transducer port:

Input voltage	Equivalent torque	Accuracy	Calibration uncertainty
0.5 mV	5% of full scale	±0.1% of reading	±0.13%
1.0 mV	10% of full scale	±0.05% of reading	±0.08%
2.0 to 18.9 mV	20% to 110% full scale	±0.05% of reading	±0.06%

*Using a coverage factor of k = 2, to give a confidence level of approximately 95%.



Measure Screen

Resolution: 5 digits for all Norbar transducers.
Weight: 2.2 kg (4.8 lb).
Dimensions: 160 mm deep x 288 mm wide x 72 mm high.



Torque Tool Tester TTT - Series 3

The TTT shares all of the extensive features of the TST except that it has no internal transducer. Instead, the TTT offers not one but three external transducer interfaces allowing any three transducers to be simultaneously connected. Selection between the transducers is made by a rotary switch at the back of the instrument case.

Any transducer from Norbar's SMART range and most mV/V calibrated transducers from Norbar or other manufacturers can be connected to the TTT. The SMART feature means that once a transducer has been connected, the instrument will automatically recognise calibration details such as mV/V output, serial number and capacity.

Norbar is UKAS accredited for the calibration of electrical torque indicator displays and the TTT is supplied with a calibration certificate. This ensures that each element of the system is fully traceable and interchangeable.



Back panel



TTT in standard carry case.
STB1000 Transducer also shown.

Torque Tool Tester TTT - Series 3

- Pictorial display panel for easy mode selection.
- Limit detection with low, pass and fail indication. Up to 12 target values can be set.
- Digital limit state output for control of external tools.
- Operation from fast charge internal battery pack (maximum time of 3 hours 20 minutes for full charge) or a.c. supply (90 to 264 Volts).
- RS-232-C serial data interface for connection to a printer or PC. Continuous RS 232 output when used in track mode (up to 11 readings per sec).
- Pulse count feature in Impulse mode and Clutch Tool mode.
- SMART™ intelligence for transducer recognition.
- Memory for calibration details of 20 non- SMART™ mV/V calibrated transducers.
- Analogue output allows the instrument to be used as part of a process control system for performance analysis.
- User selectable frequency response for each mode of operation.
- All user selectable features have password protection. The instrument can be issued to users with only the required modes of operation and units of measure enabled. This feature can virtually eliminate operator induced errors.
- Supplied in carry case.
- All common measurement units for torque are included plus users can configure their own units to interface with non torque transducers.



TTT

Part No.	Description
43228	Torque Tool Tester

TTT Ancillaries

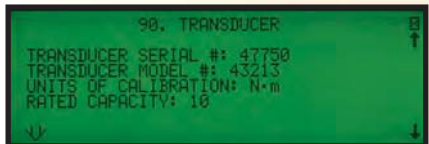
Part No.	Description
60216.200	TTT to 10 Way lead, for Norbar Rotary Transducers
60217.200	TTT to 6 Way lead, for Norbar Static & Annular Transducers
TTT.CCW	TTT Counter Clockwise Calibration

Accuracy:

Input voltage	Equivalent torque	Accuracy	Calibration uncertainty
0.5 mV	5% of full scale	±0.1% of reading	±0.13%
1.0 mV	10% of full scale	±0.05% of reading	±0.08%
2.0 to 18.9 mV	20% to 110% full scale	±0.05% of reading	±0.06%

*Using a coverage factor of k = 2, to give a confidence level of approximately 95%.

Resolution: 5 digits for all Norbar transducers.
 Weight: 1 Kg (2.2 lb).
 Dimensions: 150 mm high x 200 mm wide x 180 mm deep.



Details of connected transducer displayed by pressing key.



Language setting

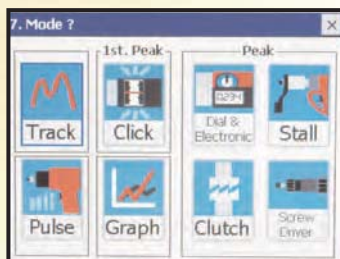


T-Box shown with Neck Strap and Mounting Bracket.

T-Box and TDMS Torque Data Management System

The T-Box together with Norbar's Torque Data Management System (TDMS) software provides the complete solution for torque tool calibration, data logging and data management and archiving on your PC.

- T-Box features a colour 5.7" (145 mm) touch screen LCD display with graphic on screen icons for simple tool selection. Feature modes include Click Hydraulic, Pulse and Stall tools that enable the most common torque products to be tested by a simple touch of the screen.
- T-Box also features a new "Pulse Tool Mode" which uses a mathematical algorithm to accurately determine the output torque from Impulse tools.
- T-Box comes pre-loaded with Tool Templates for the entire Norbar product range of Torque Wrenches and Pneutorgues enabling the user to simply assign individual tools to perform calibrations to the relevant ISO standard. Other tool templates can be created by the operator.
- Graphical analysis and display of joint profiles are available using the Graph Mode.
- T-Box can connect up to 4 Smart Transducers including transducers with angle capabilities for instant connectivity. Alternatively, non Norbar transducers with a mV/V output can be programmed into the T-Box memory.
- T-Box has 2 USB ports, one RS232 serial port and an ancillary connection (USB cable supplied as standard).
- T-Box can log data at a rate of 5 readings per second or can be set to log torque data at the required angle increment, for example, take a torque reading at every degree.



T-Box mode screen.



T-Box Language selection screen.



T-Box Instrument screen.

T-Box and TDMS

- T-Box is supplied with Norbar's new Torque Data Management System software (TDMS) for complete tool data management and archiving on your PC.
- TDMS enables data to be viewed graphically, in an SPC format, or as a Calibration Certificate (available in English, French, German, Italian, Spanish and Russian).
- T-Box contains a large capacity memory that will enable a user to collect data and store in excess of 100,000 individual test results directly to the instrument and then synchronise to the TDMS software.

T-Box kit includes: -

- T-Box instrument complete with UKAS accredited bi-directional calibration certificate
- Carry Case
- Quick Reference Guide
- Mounting foot and bolts
- Neck strap and mounting kit
- Power supply with appropriate local mains supply cable (100 - 240 v)
- USB cable
- USB memory stick pre-loaded with TDMS software
- T-Box Operator's Handbook
- TDMS Operator's Handbook.



T-Box TDMS

Part No.	Description
43236	T-Box Instrument with TDMS Software
61129	TDMS Software (supplied on USB Flash Drive)

T-Box Accessories

Part No.	Description
60216.200	T-Box to 10 way lead, for Norbar Rotary Transducers
60217.200	T-Box to 6 way lead, for Norbar Static and Annular Transducers
60223.200	T-Box to no connector (for non-Norbar Transducers)
60248	Serial Data Lead Kit

Accuracy:

Input voltage	Equivalent torque	Accuracy	Calibration uncertainty
0.5 mV	5% of capacity	±0.1% of reading	±0.13%
1.0 mV	10% of capacity	±0.05% of reading	±0.08%
2.0 to 18.9 mV	20% to 120% of capacity	±0.05% of reading	±0.06%

*Using a coverage factor of k = 2, to give a confidence level of approximately 95%.

Resolution: 5 active digits for all Norbar transducers.
Weight (T-Box only): 1.5 Kg (3.3 lb).
Dimensions: 162 mm high x 205 mm wide x 60 mm deep.



Torque vs Angle graph produced using T-Box software



Torque and Angle vs Time graph produced using T-Box software