TORQUE MEASUREMENT

Norbar started manufacturing electronic torque measuring instruments in the early 1970s and now offers a comprehensive range, from the easy to use, cost effective TruCheck™ through to the sophisticated T-Box XL™ and TDMS software, which provides the complete solution for torque tool calibration, data logging and data management. Norbar torque measuring instruments are renowned for high accuracy and superb reliability. Indeed, many of those early instruments are still in regular use today. For our interchangeable transducer instruments, we remain one of the few manufacturers in the world that issue a UKAS accredited calibration certificate both for the instrument and for the torque transducer. In so doing, customers can swap combinations of instrument and transducer while retaining complete traceability.

Norbar's torque transducers have established an excellent reputation based on exceptional quality and accuracy. A very wide torque range is covered, 0.04 N·m to 100,000 N·m and three basic transducer configurations are offered; Static, Impulse Rotary and Annular.

All transducers up to 100,000 N·m are supplied as standard with a UKAS accredited calibration certificate from Norbar's in-house laboratory.

For customers who wish to take advantage of Norbar's transducers but have an existing, non Norbar display instrument, transducers can be provided with a mV/V calibration.

Norbar's instruments and transducers are complimented by a wide range of ancillary products. Within this group are the products that would be required to set up a torque calibration laboratory, for example, torque wrench loaders meeting ISO requirements and precision beam and weight systems for calibration of torque transducers.

TRUCHECK™ 0.1 N·m - 25 N·m

TruCheck™ Plus 25

For simple, cost effective testing of torque screwdrivers and torque wrenches

- Allows torque tool performance to be monitored and tools kept in peak condition
- Two versions, TruCheck™ and TruCheck™ Plus
- Basic version has no settable options. Ideal for non-expert users
- TruCheck™ Plus allows selection of torque units and modes for 'click' and dial type wrenches
- 'Plus' version allows operator to set a target value and tolerance
- Supplied with traceable calibration certificate

TruCheck™ Plus 3 & 10

Part No	TRUCHECK™
43253	TruCheck™ 0.1 - 3.0 N·m
43250	TruCheck™ Plus 0.1 - 3.0 N·m
43254	TruCheck™ 1 - 10 N·m
43251	TruCheck™ Plus 1 - 10 N·m
43255	TruCheck™ 1 - 25 N·m
43252	TruCheck™ Plus 1 - 25 N·m

TRUCHECK™ 10 N·m - 2000 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 of incorrect tool setting and consequently joint failure.
The 'TruCheck™' torque wrench testers aim to cut the cost of purchasing a torque wrench calibration system, and remove the fears over the complexity of using such equipment.
There are two versions available, the 'TruCheck™' being the most basic version, and the 'TruCheck™ Plus' having greater functionality, to offer more flexibility.

Part No	TRUCHECK™
43221	TruCheck™ 10 - 350 N·m
43226	TruCheck™ 10 - 250 lbf·ft
43222	TruCheck™ Plus 10 - 350 N·m
43230	TruCheck™ 100 - 1000 N·m
43237	TruCheck™ 75 - 750 lbf·ft
43231	TruCheck™ Plus 100 - 1000 N·m
43244	TruCheck™ 200 - 2000 N·m
43245	TruCheck™ Plus 200 - 2000 N·m
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 43221, 43226, 43222, 43250, 43252, 43253 & 43255 and 10% to 100% for 43230, 43231, 43237, 43244, 43245, 43251 & 43254.

PRO-TEST

The Professional Torque Tester - Series 2, Pro-Test, is an accurate, highly specified and easy to operate instrument for testing and calibrating all types of torque wrench.

- 'Pro-Test' is priced to make in-house testing a viable proposition even for the smaller industrial and automotive torque wrench user.
- 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 ±0.5% of reading.
- 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.
- Display and Transducer are hard-wired together with a 600 mm cable.
- All common units of torque measurement are included.
- Pictorial mode selection incorporated for ease of use.
- 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 gives greater flexibility of mounting options.
- All user settable parameters are menu selectable from the front panel.
- Supplied in a robust carry case with a data transfer lead to connect to a PC or printer.
- As standard, all transducers are calibrated in a clockwise direction. For additional anti clockwise direction order Part No. PROTEST.CCW.

Part No	PRO-TEST (Professional Torque Tester Series 2)
	Clockwise Calibration only
43218	Pro-Test 60, 1.2 - 60 N·m
43219	Pro-Test 400, 8 - 400 N·m
43220	Pro-Test 1500, 30 - 1500 N·m

Part No	ANCILLARY PRODUCTS FOR PRO-TEST
62198.BLK9005	Mounting Bracket
60253	12v DC Power Supply for Series 2
29190	1" x 36mm socket
PROTEST.CCW	Counter Clockwise Calibration when ordered with new unit

TST

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 Rundown Fixture, the TST is available in 3 torque ranges, 0.04 to 2 N·m, 0.5 N·m to 10 N·m and 1.25 to 25 N·m. Class 1 system accuracy over its Primary range (±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 on the TST, allows the connection of any transducer from Norbar's "SMART" range and most mV/V calibrated transducers from Norbar or other manufacturers.

- Pictorial display panel for easy mode selection.
- Limit detection with low, pass and fail indication. Up to 8 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.

Part No	TST (Torque Screwdriver Tester Series 2)
43212	TST 2, 0.04 - 2 N·m
43213	TST 10, 0.5 - 10 N·m
43214	TST 25, 1.25 - 25 N·m
TST.CCW	Counter clockwise calibration when ordered with new unit

Above prices exclude Transducer lead for external transducer (see page 44).
TST is supplied complete with a Rundown Fixture for joint simulation. Additional rundowns are available see page 45.

TTT

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.

- 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, now displays transducer capacity, units and Serial No.
- 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.
- Peak memory modes can now be configured to have auto reset (previously only manual reset was possible).
- Series 3 users can set up their own measurement units, making it possible to interface with non torque transducers, for example load or pressure.

Part No	TTT (TORQUE TOOL TESTER SERIES 3)
43228	TTT Instrument
TTT.CCW	Counter clockwise calibration when ordered with new unit

Above price excludes Transducer leads (see page 44)

T-BOX XL™

The T-Box XL™ 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.

- Can be used as a hand held portable device – using the provided neck strap – or bench mounted.
- Features a 7" (178mm) colour touch screen LCD display with on screen graphic icons for simple and easy tool selection.
- 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 XL memory.
- 2 USB ports, one RS232 serial port and an ancillary connection (USB cable supplied as standard).
- Supplied with Norbar's Torque Data Management System software (TDMS) for complete tool data management and archiving on your PC.
- T-Box XL 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.
- Includes 8 modes for torque tool measurement: Track, Click, Dial & Electronic, Stall, Screwdriver, Hydraulic, Graph and Pulse.
- Pre-loaded with Tool Templates for the entire Norbar product range of Torque Wrenches, PneuTorques and EvoTorques, enabling the user to simply assign individual tools to perform calibrations to the relevant ISO standard.

Part No	T-BOX XL™
43258	T-Box XL™ Instrument with TDMS Software

TDMS SOFTWARE

Part No	TDMS SOFTWARE
61132	TDMS Software (supplied on USB Flash Drive)

Supplied as standard with T-Box XL™.

SPARES FOR INSTRUMENTATION PRODUCTS

Part No	SPARES FOR INSTRUMENTATION PRODUCTS
38876	Rechargeable Battery Pack for Pro-Log, TST & TTT
39406	Battery Pack for T-Box and T-Box XL™
29610	¼" Female – ½" Male Sleeve Adaptor
29611	½" Female – ¾" Male Sleeve Adaptor
29612	½" Female – 1" Male Sleeve Adaptor
29613	¾" Female – 1" Male Sleeve Adaptor
29614	⅜" Female – ½" Male Sleeve Adaptor

Part No	SERIAL DATA LEAD KIT
60248	Serial Data Lead Kit

Note: Serial Data Lead Kit is not suitable for use with HE Instrument and TruCheck

60259	USB to Serial Data Lead (Does not work with USM)

This kit enables Norbar "CE Marked" instruments (Post January 1996 ETS, TWA and DTS plus all Pro-Test, TST and TTT) to connect to most PCs.

PART NUMBER SUFFIX SYSTEM

Transducers can be ordered for use with Norbar's current range of instruments (TST, TTT, TTL-HE and T-Box XL™), and as Industry Standard (mV/V calibrated) for certain display instruments from other manufacturers.
A part number suffix system is used to identify the type of calibration required. For example, a 1000 N·m Static Transducer for use with a TTT instrument would become part number 50772.LOG.

SUFFIX	USAGE	CERTIFIED IN
.LOG	TST, TTT, TTL-HE & T-Box XL™	Torque Units
.IND	Instruments of non Norbar manufacture (check with Norbar for suitability) and TST, TTT, TTL-HE & T-Box XL™	mV/V

Where the transducer suffix .LOG is used, the transducer is calibrated with an instrument, as a system, a calibration certificate is provided in torque units. A full scale mV/V figure is also supplied.