

Achieve quality monitoring, control, and evaluation of tubular connections with Nabors' TesTORK™ sub and software.

Built to perform with virtually any top drive system and casing running tool (CRT), the TesTORK™ sub monitors connection torque, tension, and number of turns with unrivaled accuracy. TesTORK™ sub also utilizes high-precision instrumentation, computer monitoring software and wireless technology to monitor and report on all aspects of your casing operations.

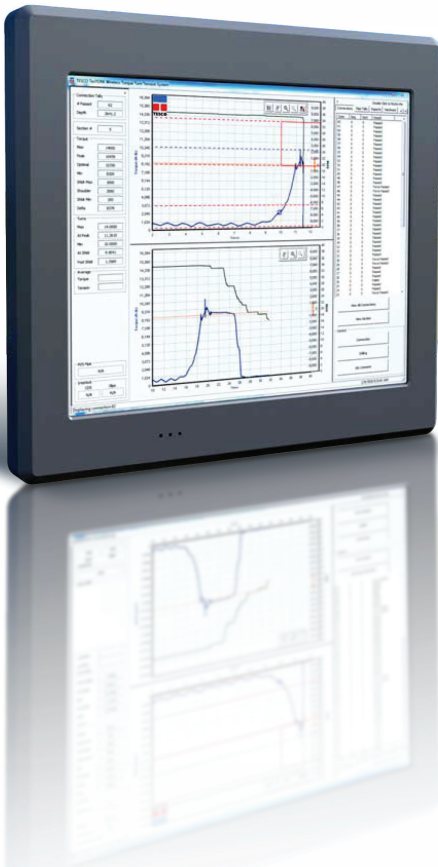
Newly developed drilling features allow the TesTORK™ sub to stream live speed, tension and torque data to the TesTORK™ sub software and display. Compatibility with the Wellsite Information Transfer Specification (WITS) protocol also allows integration into existing EDR systems.

Wireless transmitters in the TesTORK™ sub send real-time torque and rotational data to the Base Radio during connections. The Base Radio connects via USB to a computer hosting TesTORK™ sub software which logs and displays all connection data on torque load vs. turns, RPM, and torque load vs. time. The operator can add comments on individual connections, and view and print connection data from previous connections logged by TesTORK™ sub software. The monitoring system makes efficient use of power by entering a sleep mode during periods of no communication in order to preserve battery life.

TesTORK™ sub offers accuracy, ease of use, quick rig-up/rig-down times, and provides the highest level of quality assurance for casing connections.

FEATURES & BENEFITS

- Real-time monitoring of torque load applied by the top drive during casing connections mitigates the need to feather connections
- Torque load is measured against both time and the number of turns for each casing connection ensuring consistent results
- Internal gyroscopes calculate turns in the TesTORK™ sub, thus eliminating the need for encoders
- TesTORK™ sub software uses pass/fail analysis to classify connections – operator comments can be entered for any connection, but are required for failed connections
- Operators can enter connection data of torque limits, turn values, and hold time for the shoulder and peak torque target for accurate and consistent make up
- Torque, tension and turn settings can be calibrated to zero on site – this is especially important for tension so that different sized CRT tools can be “zeroed out”
- Unique TesTORK™ sub serial number and calibration parameters are saved in order to verify discrepancies or inaccuracies
- Even if connections are removed, TesTORK™ sub software will retain a backup of the information in the system
- Auto hunt mode allows the TesTORK™ sub to easily establish a wireless connection with the Base Radio
- Base Radio channel can be changed to avoid interference
- The antenna may be placed outside the doghouse with strong magnet mounts, thus maintaining line-of-sight to ensure continuous, stable communications between the TesTORK™ sub and Base Radio
- Temperature compensation ensures there is no need to recalibrate at different temperatures
- Remote monitoring stations are available for the driller's cabin to minimize personnel on the rig floor
- Zero Weight Interlock feature available to ensure pipe is never dropped
- Rechargeable battery eliminates the need for expensive single use batteries



TesTORK™ SUB*

Torque Rating	+/- 50,000 ft-lbs (+/- 6,779 daN-m) (connection dependent)
Available Connections	API 65/8 in. Regular Thread Pin Up/Box Down or NC50 Regular Thread Pin Up/Box Down
Tension Rating	6 5/8 in. Connection - 500 Ton (453.6 Tonne) NC50 Connection - 300 Ton (272.16 Tonne) in Compliance with API 8C
Torque/Tension Load Accuracy	0.001% of Full Scale
Turns Resolution	+/- 0.05°
Sampling Rate	4,000 Samples /Second
Temperature Range	-40°F to +158°F (-40°C to +70°C)
Battery	Rechargeable 4000 mAh NiMH
Battery Life	35 Days of Continuous Use
Length	18.5 in. (47 cm) (shoulder to shoulder)
Weight	~ 350 lbs (159 kg)
Enclosure Rating	Type 4X and IP68
Hazardous Area	Zone 0
Classification Certifications	CSA/UL

BASE RADIO

Base Radio Dimensions	3 in. x 31/8 in. x 8 in. (7.62 cm x 7.94 cm x 20.32 cm)
Base Radio Weight	2 lbs (0.91 kg)
Operating Temperature	-40°F to +158°F (-40°C to +70°C)
Hazardous Area Classification	Zone 2

TesTORK™ PC SOFTWARE

System Requirements	Modern PC Running Windows 7 with 1 Available USB Port
Features Include	Torque vs. Time Graphing Torque vs. Turns Graphing Connection Torque/Turns Target Connection Tally Graphics Settings System Settings Communication Details
Reports	Job Statistics Sections Detail Sections Summary Connections Job/Connection Comments

*All specifications are subject to customization and continuous product improvement.