

AccuTorque

Makeup torque control and monitoring system

APPLICATION

Land drilling operations

BENEFITS

- Ensures the application of correct makeup torque
- Mitigates risk of drill pipe twistoff and washout events
- Reduces drillstring repair and maintenance costs
- Improves trip speeds by reducing connection makeup time
- Records breakout events to help detect downhole makeup anomalies

FEATURES

- User-friendly interface for entering and selecting tool joint sizes
- Easy installation onto iron roughnecks
- Onboard event log storage for easy retrieval
- Temperature-compensating strain gauges in each load pin for increased accuracy

The AccuTorque* makeup torque control and monitoring system is a peripheral attachment for compatible iron roughnecks that measures, controls, and records torque values to ensure that the recommended torque is correctly applied during drillstring makeup. When connected to an iron roughneck, it automates makeup operations, decreasing the possibility of a twistoff event and reducing makeup time for faster trip speeds.

Although the industry generally accepts a makeup torque error of 5%, 1 in 6 improperly calibrated iron roughnecks apply torque with an error of greater than 15%. When this happens, a drillstring twistoff event can occur—and the resulting nonproductive time (NPT) is costly. 1 in 20 wells experience back off or twistoff events,¹ and for every twistoff event the contractor can expect to pay an average of USD 400,000. Because of the extensive costs and NPT caused by twistoff events, Schlumberger designed the AccuTorque system to reduce the number and frequency of these events.

To begin the makeup process, the technician enters the size and type of connection and the proper makeup torque. The AccuTorque system then makes up each drillpipe to the specified makeup torque—without requiring recalibration.

System components include

- two load pins
- control box with LED indicators
- customized wing plate
- touch screen interface that can be read in direct sunlight.

Load Cell Specifications

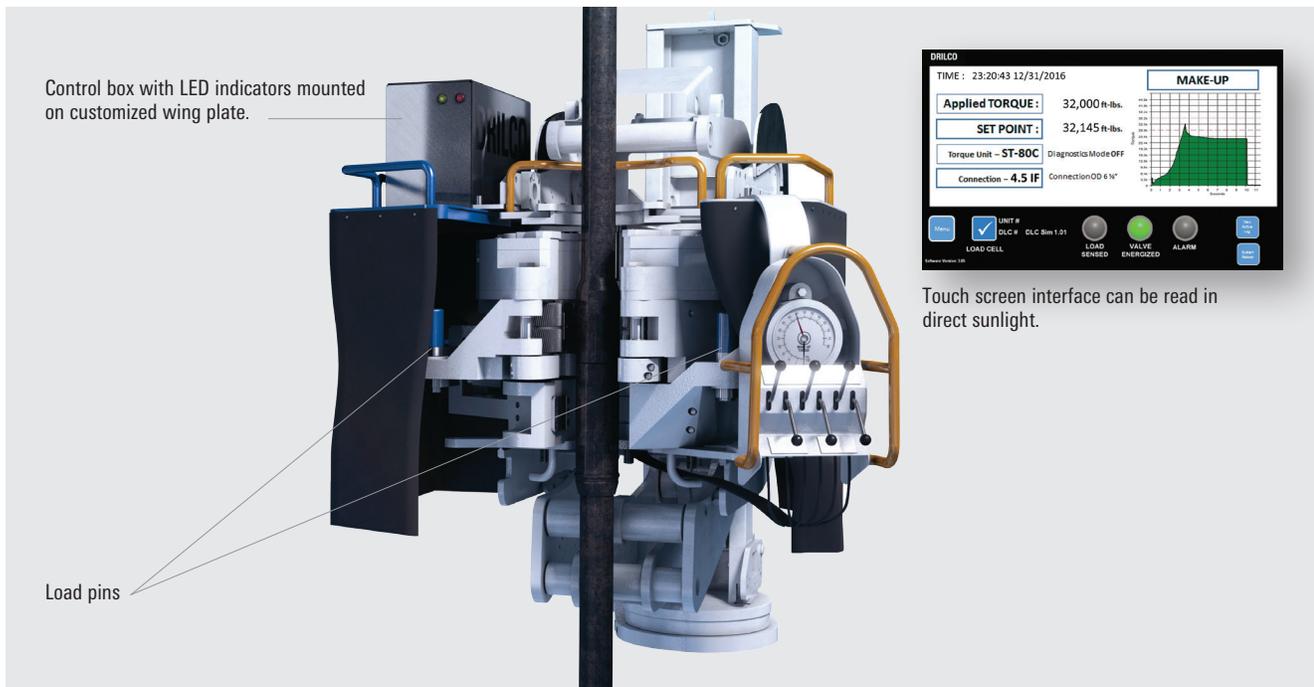
Calibration	1% at 30,000 lbf, NIST-traceable
Calibration sheet	Furnished upon request
Construction	Stainless steel and sealed for rugged use
Hazardous location ratings	Class 1, division 1: load pins, control box Class 1, division 2: touch screen monitor

System Specifications

Compatible iron roughneck models	ST-80C, ST-80 Gen3
ATEX/IECEx certification	Zone 1: load pins, control box Zone 2: touch screen monitor
Temperature operating range	−40 to 185 degF [−40 to 85 degC]
Electrical power	94–265 V, AC auto switching, 47–63 Hz, AC line filter, 3-A maximum
Operating system	Windows 7
Network	802.11n via SMA CONN, 802.3 via MIL-SPEC CONN

¹Zenero, N., Koneti, S., Schnieder, W.: "Iron Roughneck Makeup Torque—It's Not What You Think!" IADC/SPE Drilling Conference and Exhibition (2016), 3.

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Touch screen interface can be read in direct sunlight.

Control box can be easily installed on the compatible iron roughneck.

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