SMART TORQUE TOOL PACKAGE

Technical Data / Specifications

Dimensions (overall) -Torque Tool

- Length 23 In
- Width 12.5 In
- Height 12.5/8 In
- Weight in Air 86lbs
- Weight in Water 66lbs

Performance Data -Torque Tool

Output torque	25 -2000 ft.-Ibs. t. 5%
Input pressure	0-3000 psi (max)
Rotation	Reversible Bi-Directional
Fluid	Petroleum based hydraulic Fluid
Turns counter	Digital Battery Operated
Latches	Hydraulic (1500 psi max operating pressure)

Materials -Torque Tool

- Aluminum 6061-T6
- Stainless steel
- Nickel-Aluminum-Bronze
- Carbon Steel
- Titanium

Sub-Sea manifold Unit Dimensions (overall)

Length	12 in
Width	9 in (excluding fittings)
Height	6 in
Weight in Air	65 lbs
Weight in Water	38 lbs

Performance Data -RCU

Depth Rating	10,000 ft.
Temperature Range	0° to 70°
Power Consumption	7 Amps at 24VDC
Communications	RS232
Hydraulic Working Pressure	3,000 psi max
Hydraulic Flow	5 gpm max
Hydraulic Requirement	3,000 psi at 5 gpm

Overview

Oceaneering's Smart Torque Tool system incorporates a Remote Control Unit (RCU) with the features of the standard Torque Tool. The addition of the RCU gives the tool expanded capabilities and flexibility. Specifically, real-time torque feedback and direct control over output torque. These values are monitored and are adjustable via the surface control unit.

The RCU consists of two main parts: the manifold unit, and the topside control unit. The ROV has the ability to control all hydraulic functions on the torque tool and provide real-time torque feedback and control for the torque tool. It is designed to interface with the standard work class ROV, using the ROV's umbilical for data communication.

Using a computer as the topside controller, the ROV provides necessary power and control signals to operate the subsea manifold. The manifold proportionally adjusts pressure and flow to meet the requirements of the subsea tooling. Any sensor feedback is entered into the manifold and transmitted to the surface for display or data logging.

The Smart Torque Tool is supplied with an Intelligent Test Jig. Using the Jig, the tool can be calibrated for torque output while subsea. The jig can also change out end effectors on the torque tool while subsea, thus eliminating trips back to the surface to switch out end-effectors for various subsea valves.

Main Components

Remote Control Unit (RCU)
Manifold Unit
Topside Control Unit
Standard Torque Tool
Intelligent Test Jig