

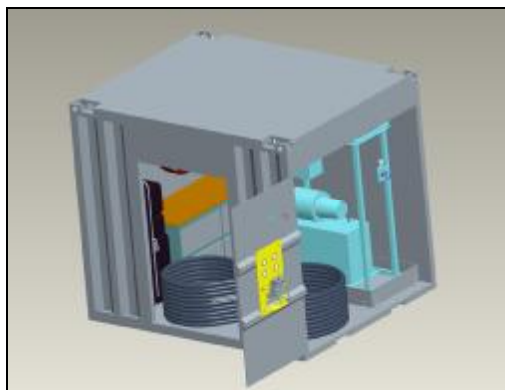
DIVER OPERATED TORQUE TOOL SYSTEM

The **Diver Operated Torque Tool System (DOTTS)** is a turnkey system that has been developed to enable diver operation of 16 – 20 inch, API 6D, Class 500 subsea ball valves with gear boxes configured per API 17D.

The system is comprised of a torque tool, hydraulic power unit (HPU), 300 ft. of hydraulic hoses, and a single ISO 10 x 8 x 8 ft. shipping container.



DOTTS features OceanWorks' proven TORNADO Torque Tool and is capable of operating subsea ball valves with torque ratings from 0 – 2,000 ft-lb using API 17D Class 1 – 4 interfaces. This light weight torque tool weighs approximately 42 lb. in water and is easily handled and operated by a single diver.



The Hydraulic Power Unit (HPU) is specially configured for use in marine environments in ambient temperatures up to 50° C and is compliant with IEEE Standard 846 for TEFC motors.

During operation the shipping container and HPU are located on the deck of a dive boat and connected to the torque tool by 300 ft. hydraulic hoses that are suited for subsea service. The system is configured for operations in water depths up to 50 meters.

SYSTEM FEATURES

Tornado Torque Tool:

- § Compliant with API 17D, class 1 - 4
- § Light weight, easily handled by single diver (~ 42 lb in water)
- § Includes three API 17D end effectors covering class 1 – 4 operations
- § Easily converted between class 1, 2, 3, and 4 without removal of hydraulic motor or disassembly of oil-filled parts
- § Includes all required gear boxes for class 1 – 4 operations
- § Includes LCD display on tool indicating number of turns and battery status
- § Includes fail-safe clamping latches that disengage on loss of hydraulic pressure, including mechanical latch indication
- § Includes Torque Tool Calibration Unit with digital readout suitable for use on deck

Hydraulic Power Unit:

- § Pump, motor, and all interconnecting piping, controls and safety equipment
- § Powered by 480 VAC, 3 phase, 60 Hz motor
- § Compliant with IEEE 846; rated for operation in up to 50° C ambient temperature

Hydraulic Hoses:

- § Supply & return lines for all torque tool functions, min. 65 meters in length
- § Hoses bundled for efficient deployment & storage
- § All connections to HPU and torque tool provided

Shipping Container:

- § Houses HPU, hoses, and torque tool
- § Single ISO container at 10' x 8' x 8'
- § Coating system suitable marine environment