

FUGRO

CLASS I-IV TORQUE TOOL

Offering total versatility, enabling operation of the most common rotary valve override and stab-plate interfaces in a subsea field.

The torque tool class 1-4, with its multi-sized, self-adjusting square drive socket, offers total versatility to its user, automatically selecting the correct interface drive to reflect its requirement. The tool can be supplied with a paddle, fishtail, T-bar, ring or vertical deployment handle, thereby allowing it to interface with all user requirements. The torque tool class 1-4's unique gearbox mechanism enables operation of all common rotary valve overrides and stab-plate interfaces in a subsea field, in a single dive. This removes the need for the remotely operated vehicle (ROV) to return to the surface saving significant project time and cost.

Lighter than its competitors, the torque tool class 1-4 allows the user to integrate and remove the tool from the ROV or flying lead orientation tool (FLOT) with ease, whilst its robust design significantly improves durability, reducing the cost impact of multiple replacements. The torque tool class 1-4 has an unlimited depth rating and can therefore be utilised in support of projects at any worksite and be integrated with any work class ROV.

BENEFITS

- Multi-interface gearbox design significantly reduces dive requirements
- Reduced maintenance requirements – bespoke, durable design
- Supports data-driven decision making – signals from torque transducer and turns counter relayed back to continuous surface readout via ROV umbilical

CLASS I-IV TORQUE TOOL

Technical Specifications

General

Size (with paddle handle)	623 mm x 226 mm x 403 mm (l x w x h)
Weight in air (with paddle handle)	47 kg (103.6 lb)
Weight in water (with paddle handle)	38 kgs (84 lb)
Design life	10 years (with regular maintenance)
Design depth	3000 MSW

Tool Supply (from ROV)

Maximum supply pressure	Motor: 175 bar (2538 psi) Latches: 207 bar (3002 psi) Torque multiplier engage/disengage function: 70 bar (1015 psi)
Maximum supply flow	Up to 20 l/m, (5.2 g/m), typically controlled by Tooling Control Unit
Operating fluid	Hydraulic oil – ISO 22/32, minimum SAE AS 4059 class 6B-F

Tool Output/Interfaces

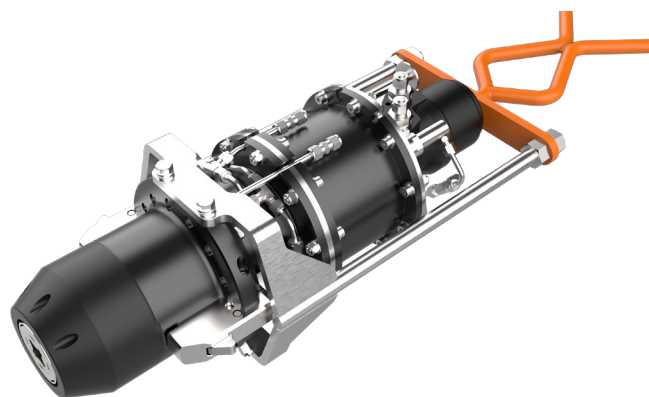
Interface	ISO 13628-8 class I - IV torque bucket, self-adjusting between classes
High speed - low torque range (Class 1-2)	Between 20 Nm and 400 Nm at 20 rpm
Low speed - high torque range (Class 3-4)	Between 270 Nm and 2700 Nm at 3.5 rpm
Load capability	400 kg latching capacity on the nose

Key Features

Full torque range from 20 Nm through to 2700 Nm
 Multisize auto selecting socket design
 Integral turns count accurate to 1/20th of a turn in either direction, optional external turns count and reset switch also available
 Manipulator operable or ROV/FLOT mounted
 Anodised aluminium body
 Replaceable nylon nose cone to ISO 13628-8 figure 18 classes I to IV
 Choice of paddle/fishtail/T-bar/ring or vertical deployment handle (client specific handle also available at additional cost)
 Supplied in a dedicated offshore transit case

Associated Tools

Class 1-4 Torque Analyser
 FLOT
 Torque Tool Control System
 Subsea Torque and Turns Display (standalone or integrated)



Torque tool with vertical handle



Torque tool turns count

