



FUGRO LINEAR LOCKOUT TOOLS

Fugro's linear lockout tools (LLT) are available for ISO 13628-8 Type A, B and C valve actuator override interfaces. They allow various Christmas tree/manifold valve actuators to be kept open mechanically when used in conjunction with a linear valve override Tool (LVOT).

The LLT is a fully mechanical tool consisting of a titanium body and actuation shaft, which can be locked when fully extended. The rear of the tool allows a mating LVOT to be installed. Once actuated by the LVOT, a handle on the LLT mechanically locks the LLT actuation shaft and hold the actuator open. Actuators can be left open indefinitely in this position, allowing the LVOT to be removed and used to install further LLT's on other valve actuator interfaces.

To allow for tolerance stack ups affecting the valve actuator stroke length, the locking section of the LLT is "stepped" to allow float in the locking handle position. Various actuator stroke lengths and proprietary interfaces can be accommodated as required. Remotely operated vehicle (ROV) and diver operated versions of the LLT can be supplied.

BENEFITS

- 10-25 year design life installed subsea with low maintenance requirements
- Customisable stroke/force ranges configurable for all subsea fields
- Safety-enhancing locking dog design to prevent backing off during operation
- Lightweight and high strength simplifying handling and installation

LINEAR LOCKOUT TOOLS

Technical Specifications

General

Typical size - Type A, 5" stroke (retracted)	444 mm x 356 mm x 475 mm (l x w x h) (with fishtail handle)
Typical weight in air - Type A, 5" stroke	49 kg (108 lb) (with fishtail handle)
Typical weight in water - Type A, 5" stroke	38 kg (83.8 lb) (with fishtail handle)
Design life	10 years (with regular maintenance)
Design depth	3000 MSW

Tool Supply (from ROV)

Fully mechanical (no hydraulics required)

Tool Output/Interface

Output forces	As per LVOT driving forces to client requirements
Interfaces	ISO 13628-8 Type A, B, C and proprietary interfaces as required

Key Features

Lightweight titanium body
Ability to mechanically lock the tool in position on an actuator for indefinite use subsea
Choice of paddle/fishtail/T-bar or ring handle (client specific handle also available at additional cost)
Supplied in a dedicated offshore transit case



"Stepped" locking section



LVOT interface on rear of LLT

