



For use on-deck with Box Corers

Using the Box-Corer T-Bar system with T-Bar Cones enables fast and accurate assessment of recovered sub-sea soil samples while still in the Box-Corer. Automated control through the bespoke Control & Acquisition system allows for multiple cycles of push and retract in one test, while the system is mechanically protected by user pre-set values for maximum T-Bar load and Cone Tilt. The system provides a real-time display of all the information transmitted from the T-Bar Cone and the Thruster. At 2cm/sec. this records every 1mm of penetration, while storing all of the data for later analysis. The system is built to the highest standards featuring a combination of high performance marine stainless steel and engineering plastics for good performance and durability. A positive mechanical drive system with real time speed control maintains constant penetration speed throughout the full load range. Operating at Safe Extra Low Voltage with control interlocks ensures safe operation at all times.

The System

The system comprises of a number of bespoke parts that all work together to form the system. It is designed to push a T-Bar or Ball Cone in to a soil sample recovered from the seabed by a Box-Corer to obtain geotechnical data. The System consists of all the parts required to undertake these tests, with the exception of the Box-Corer. The main components are the Thruster, Interface Box and Power Lead, PC/Laptop, Deck-lead, Control & Acquisition Software, and bespoke transit cases. The software is easy to use, and displays all the T-Bar Cone and Thruster data in real-time while recording the data for later analysis.

T-Bar Cone

The T-Bar Cones are manufactured to very high physical dimensional tolerances in order to meet strict miniature cone penetrometer testing guidelines. The T-Bar Cone contains sophisticated electronic systems that fulfil precision power stabilisation and signal conditioning functionality.

The Cone features high precision load sensors for the T-Bar/Tip and the Friction Sleeve, along with an Inclination Sensor to monitor the Cone's conical angle from a vertical datum point. The Cone sends all the sensor data through the system using RS485 communications. Every cone is factory calibrated and the calibration data file is saved on-board in the cones own non-volatile memory.

The Cone can be fitted with a 25cm² or 50cm² T-Bar, or a 50cm² Ball depending on soil conditions.

Specifications

Penetration Rate	2cm / sec. \pm 10%. (standard) 0.6cm / sec. 1cm / sec. 1.3cm / sec.
Thrust	120kgf. (max.)
Thrust Depth	1050mm (max.)
Power In	110 - 240Vac via standard UK 3-Pin Plug (alternative plugs are available on request).
Retention	4 off pad-eyes as slinging points around the centre.
Weight	Thruster, 58kg. Base, 20kg. Thruster & Base, 78kg.
Thruster Dimensions	Assembled, approx. 1850 x 340 x 568mm. Disassembled, approx. 1830 x 340 x 200mm.
Mount Width	Sliding adjustable base from 520mm to 568mm(alternative customer specification available on request).
Lifting	Single point Lifting Eye in Top Centre.
Environmental Rating	IP67 (with connectors mated)
Control Acquisition	Bespoke software provides all system Control, data acquisition and logging functions.
PC Requirements	Windows 10.



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