NEPTUNE 5000 UNDERWATER PIEZOCONE

NEPTUNE 5000 35kN COILED ROD PCPT SYSTEM

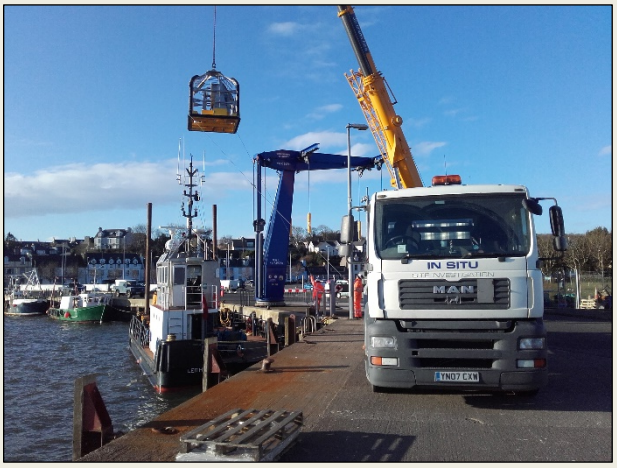
In Situ Site Investigation has the capability to undertake underwater seabed / riverbed PCPT Testing, up to an operating depth of 3000m below water level, in accordance with the ISO 22476-1 standard. The N-5000 is a high-tech device for performing piezocone surveys from bed level using 5cm² digital non-extractive cones which penetrate the subsoil at a constant velocity of 2cm/s with a maximum achievable thrust of 35kN.

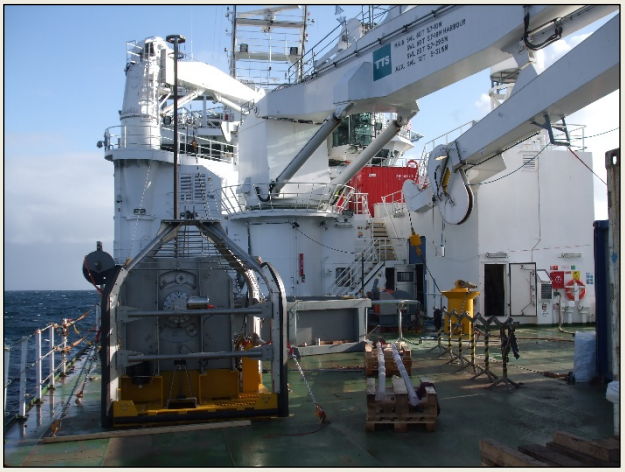
The innovative system of rods and drum has resulted in the Development of this compact, easily maneuverable unit, which can reach up to 20m penetration depth in ideal soil conditions. The rod system has an exterior diameter of 19mm and is made of flexible stainless steel.

The survey operation is controlled and monitored from a support vessel using dedicated software that allows real time data capture and graphical visualization of cone resistance (qc), sleeve friction (fs), excess pore pressure (u2), penetration depth and cone inclination, along with unit tilt at bed level.

The N-5000 unit is easily transported by road to site and is lifted directly from a quayside onto an awaiting survey vessel. The seabed units provide very a rapid deployment method allowing multiple PCPT tests to be undertaken within a very short period of time. Each test can also be undertaken without the requirement to deploy a static marine platform or pontoon for shallow water and nearshore investigations.

At each test location, the 4500kg unit can be lowered down to bed level from the deck of a support survey vessel using an onboard mounted crane, hi-ab or deck winch, additional line is then paid out allowing the vessel to hold position without moving the PCPT unit while each test push is completed. Measured digital data from the cone is transferred through a control umbilical cable to the top side system control cabin on the vessel deck, allowing real time observation of the ongoing test parameters. Each test takes approximately 20 minutes to complete then the unit can be safely recovered to the vessel deck, ready to move onto the next test location.





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FOR MORE INFORMATION ON MARINE CPT TESTING, PLEASE VISIT OUR WEBSITE AT:

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NEPTUNE 5000 PCPT SYSTEM	
Generic type	Underwater coiled rod PCPT system
Manufacturer	Datem Ltd UK
Unit dimensions	Length 2.2m x Width 2.2m x Height 2.6m
Dry weight	4,500kg
Underwater weight	3,700kg
Maximum thrust	35kN
Penetration length	5m, 10m, 20m (coiled rod assembly)
Maximum operational depth	3000m below water level (limited to available umbilical length)
Cone type	5cm² PCPT digital piezocone (75cm² sleeve surface area)
Power requirement	240Vac 1ph 50/60hz
Umbilical voltage	600Vac
Penetration speed	2cm/s +-10%
Range / accuracy	Tip >100kPa, Sleeve >5kPa, Pore pressure >3.5kPa-15kPa
Unit structure sensors	Tilt +-30˚, Altimeter, Hydrostatic pressure
Deployment	Deployed from support vessel to underwater bed level test location via crane, hi-ab or deck winch. (8t minimum lift capacity required)
Preferred ground conditions for use	Suitable for superficial deposits up to stiff clay / dense sand.
Limiting ground conditions	Requires adequate rod support from overlying strata. Unable to penetrate very stiff / very dense or coarse material.
Derived parameters	Cone tip resistance (qc), Sleeve friction (fs), Excess pore pressure (u2)