

Borehole pressuremeter



Description

Pressuremeter tester (PMT) is the lateral load testing equipment of borehole whose pressure capacity is 20MPa.

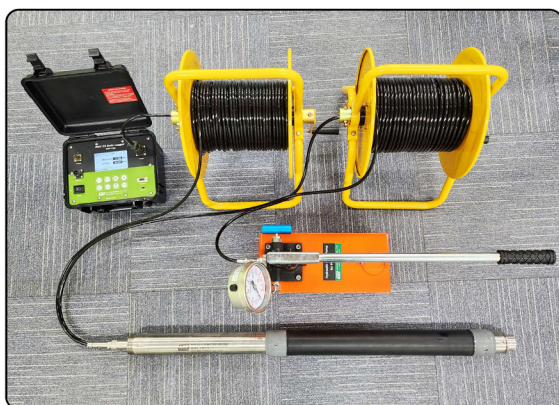
This equipment is the LLT test equipment and aims to measure hard soil layer that is impossible to measure.

It is the test equipment developed for the range that is from some of soft ground to hard ground (layer of weathered rock). Hydraulic pressure (hand pump of high pressure), oil pressure and, etc. are used as pressure source.

It is designed to measure compressive force with the sensor that is attached to readout device and the variation of the borehole diameter with LVDT sensor of caliper arm method embedded in pressuremeter probe regarding deformation of the ground in person, and then display them in readout device through the cable.

The data logger called PMT-75D, stores data and allows you to directly check the graph of the relationship between radius displacement and pressure, and the data measured for each measured holes are saved as a file.

It is waterproof and rust-proofed to enable use in harsh field environments.



[PMT-75 Composition of test set]

Component



[Pressuremeter probe]



[Data logger]



[Hydraulic pump]



[Hydraulic hose & signal cable]



[Testing jig]

Features

- Possible to use probe(OD: $\varnothing 72\text{mm}$) at NX borehole($\varnothing 75\text{mm}$)
- The amount of displacement detection is wide with maximum 20mm, It can be used for various grounds ranging from soft soil layer with big displacement to hard soil layer.
- Displacement can be read easily because it is displayed in digital.
- Easy to handle because it is made of rubber tube.

Borehole pressuremeter

Specification

| Model | PMT-75 | | | |
|---------------------------------|---|--|-------------------|--|
| Data logger (PMT-75D) | Display | Graphic LCD (displacment, pressure) | | |
| | Accuracy | ±0.05% FSR | | |
| | Resolution | 0.001mm, 0.001MPa | | |
| | Memory | 15000 Data points (Max. 100 points / Hole) | | |
| | Power | 7.2VDC / Rechargeable Ni-MH battery | | |
| | Operating time | 14 hours continuous (when fully charged) | | |
| | Material | ABS case | | |
| | Dimensions | 247 × 227 × 155(h)mm | | |
| | Weight | 2.7kg | | |
| | Accessories | Charger (12VDC 3Ah) | | |
| Pressuremeter probe (PMT-75) | Sensor type | Measuring displacement of diameter : LVDT sensor Measuring to water pressure of probe : water pressure sensor | | |
| | Range of measuring displacement of diameter | Ø72~Ø92mm (20mm) | | |
| | Linearity | ±0.1% FSR | | |
| | Detection method displacement | Caliper arm type | | |
| | Maximum hydraulic pressure | 20 MPa(2850 psi) | | |
| | Temperature range | -20~60°C | | |
| | Material | Stainless steel | | |
| | Dimensions | Ø72 × 1170mm | | |
| | Weight | 18kg | | |
| | Length of probe | 520mm | | |
| | Maximum pressure | 20 MPa | | |
| | Rubber tube | Hard rock (PMT-75TH) | 20MPa (hard rock) | |
| | | Soft rock (PMT-75TS) | 10MPa (soft rock) | |
| Hand pump (PMT-75P) | Max. hydraulic pressure | 30 MPa (4300 psi) | | |
| | Dimensions | 570 × 160 × 330(h)mm | | |
| | Material | Stainless steel | | |
| | Weight | 5kg | | |
| | Ingredient | Water | | |
| Hyd. hose | Maximum pressure | 25MPa (3500 psi) | | |
| | Weight | 2.6kg / 50m (STD) | | |
| Signal cable | Dimensions | Ø7mm, 0.37mm ² × 4C PU jacket cable | | |
| | Weight | 3.0kg / 50m (STD) | | |

Use of component

| Component | Use |
|--------------------------|--|
| Data logger (PMT-75D) | It is stored measured displacement (mm, MPa) of pressuremeter probe |
| Probe (PMT-75) | LVDT sensor and pressure sensor will measure the displacement of diameter of borehole and the hyd. pressure of inside of probe. |
| Hyd. pump | It is possible to hyd. pressure up to 30MPa by hand pump. |
| Hyd. hose & signal cable | Outer diameter of hyd. hose is Ø8mm that endures up to 25MPa pressure and 7 cores of urethane sheath signal cable is used for enduring rough environments. |
| Standard testing jig | For testing, inner diameter is designed as same as NX drill borehole(Ø75mm) |