

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 deformation characteristics of the ground can be grasped through loading pressure on probe and deformation of the borehole diameter at that time. Indicator PMT-75R which has a built in battery becomes waterproof. Therefore, it can use harsh environment.

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.

Component



[Pressuremeter probe]



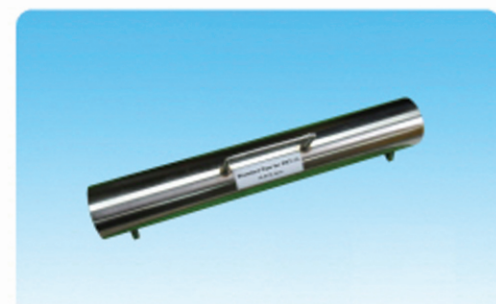
[Pressuremeter readout]



[Hydraulic pump]



[Hydraulic hose & signal cable]



[Standard testing Jig]

Borehole pressuremeter

Specification

Model	PMT-75	
Indicator (PMT-75R)	Display	Character LCD 2 (radius, pressure)
	Life time	About 15 hours (fully charged)
	Operating power	12VDC
	Resolution	0.01mm / 0.001 MPa
	Material	ABS Case
	Dimensions	406 × 330 × 177(h)mm
	Weight	6.4kg
	Standard accessories	Charger (24VDC 2Ah)
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	∅77~∅97mm (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	∅72 × 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
Dimensions		570 × 160 × 330(h)mm
Material		Stainless steel
Weight		5kg
Ingredient		Water
Hyd. hose	Maximum pressure	25MPa (3500 psi)
	Weight	5kg / 100m (STD)
Signal cable	Dimensions	∅10mm, 0.75mm ² × 7C PU jacket cable
	Weight	5kg / 100 m (STD)

Use of component

Component	Use
Read out (PMT-75R)	It is showed measured voltage(mV) and 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 ∅8mm 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(∅75mm)