

Rock borehole pressuremeter



Description

Rock borehole pressuremeter is attached bearing plate of jack to measure the contraction and expansion for the displacement of borehole wall pressured by a hollow wall. This jack is located in appointed location of hole connected such as drill rod of NX bearing machine for hydraulic lines and signal cable.

When applied hydraulic to manual pump, the jack's bearing plate will expansion and the borehole will attached to borehole wall.

Jack has 2 LVDT (linear variable differential transformers) to measure the displacement deviation of rock. Display readout (GJ-75R) for displacement sensor connected to signal cable. Approval pressure is able to read the pressure by attached hydraulic pressure gauge to manual pump. After measuring, when operates dissolution valve, the pressure will cancel and the bearing plate will return as original. Take off from borehole and separation with drill rod.

Jack of rock borehole pressuremeter is selected by geological survey investigated in advance. Usually, the jack for hardrock is used.

Jack for softrock is useful for testing properties of softrock, soil and petrified clay.

Jack of GJ-75 is waterproofed and is designed to endure the pressure of about 10000psi.

Indicator GJ-75R was waterproofed and it was processed to defend noise. So it can be used at the wrong site. And it has a charge and discharge battery.

[It is also called as "GOODMAN JACK"]

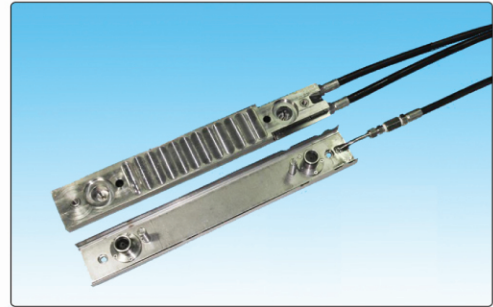
Applications

Rock borehole pressuremeter is portable equipment designed for measuring displacement of rock in the NX drill ($\varnothing 75\text{mm}$) borehole as in-situ equipment.

Jack of rock borehole pressuremeter have two models. Rock borehole pressuremeter is designed to measure the coefficient of elasticity and deformation regarding a base rock by jack for hardrock having 12ea piston and jack for softrock having 3ea pistons.

Rock borehole pressuremeter consists of hardrock jack (GJ-75H), softdrock jack (GJ-75S), displacement readout unit (GJ-75R), oil-pressure pump(GJ-75P) made of duralumin, oil-pressure hose for a high-pressure, and signal cable.

Components



[Hard rock jack]



[Soft rock jack]



[Readout unit]



[Hand pump & hydraulic hose, signal cable]



[Semi calibrator]

Rock borehole pressuremeter

Specification

Model	GJ-75		
Displacement output readout (GJ-75R)	Display	Dual digital display	
	Operating time	10 hours continuous (when fully charged)	
	Power	12VDC	
	Resolution	0.01mm	
	Material	ABS case	
	Dimensions	406 × 330 × 177(h)mm	
	Weight	6.4kg	
	Accessories	Charger (free voltage)	
Hard rock jack (GJ-75H)	Number of piston	12 EA	
	Maximum pressurized	654kg/cm ² (9300psi)	
	Linearity	Maximum	±0.5% Ø73.7~Ø78.7mm interval
		Minimum	±1.0% Ø72.4~Ø80mm interval
	Boring diameter	Maximum	Ø83mm
		Minimum	Ø70mm
	Operating temperature	-20~60°C	
	Material	Stainless steel (HRC 30~40 with heat treatment)	
	Dimensions	Ø70 × 445mm	
	Weight	14.5kg	
Case material	Aluminum		
Soft rock jack (GJ-75S)	Number of piston	3ea	
	Maximum pressurized	390kg/cm ² (5540psi)	
	Linearity	Maximum	±0.5% Ø73.7~Ø78.7mm interval
		Minimum	±1.0% Ø72.4~Ø80mm interval
	Boring diameter	Maximum	Ø83mm
		Minimum	Ø70mm
	Operating temperature	-20~60°C	
	Material	Stainless steel (HRC 30~40 with heat treatment)	
	Dimensions	Ø70 × 445mm	
	Weight	14.5kg	
Case material	Aluminum		
Hand pump (GJ-75P)	Maximum allowable pressure	703kg/cm ² (10000psi)	
	Pressure gage resolution	20kg/cm ²	
	Accuracy	±0.5% FSR	
	Dimensions	690 × 180 × 150mm	
	Weight	9kg	
	Case material	Wooden case	
	Manufacturer	Korea hydraulic co - model. EPA-702	
Hydraulic hose (for inlet and outlet)	Maximum pressurized	703kg/cm ² (10000psi)	
	Weight	8kg/15m (standard) 20m, 30m, 40m (optional)	
Signal cable	Dimensions	Ø8mm, 0.75mm ² × 4C PU jacket cable	
	Weight	2kg/15m (standard), 20m, 30m, 40m (optional)	
Semi calibrator	Dimensions	Ø76.2 × Ø118 × 209mm	
	Weight	10.5kg (carbon steel)	