



CBR-Specific
Load Frame

Introduction

Product Description— H-4156M

The Humboldt H-4156M CBR-Specific Load Frame Set has been designed to provide labs with a single-speed load frame specifically designed to do California Bearing Ratio (CBR) testing. The machine has a one-speed motor with a reversing switch that produces a uniform vertical movement of .05" (1.27mm) per minute, ASTM D1883, AASHTO T193. The maximum piston travel is 3 1/2" (88mm). The H-4156M is sold as a CBR-specific set and includes:

- (1) H-4156M CBR-Specific Load Frame (115 VAC 60 Hz, 1 phase)
- (1) H-4454.100 Load Ring, 10,000lbf (50kN)
- (1) H-4158.1 Dial Indicator, 1.000" x .001"
- (1) H-4178 Penetration Piston with Stud
- (1) H-4178BR Dial Indicator Bracket

Product Description— H-4156M.4F

The Humboldt H-4156M.4F CBR-Specific Load Frame Set has been designed for use in 220 50/60Hz applications and those who need to test CBR to the BS 1377: Part 4 Standard of .04" (1.00mm) per minute. When operated at 60Hz, the H-4156M.4F complies with the ASTM D1883 Standard; and, when operated at 50Hz it complies with the BS 1377: Part 4 Standard. The H-4156M.4F also includes the following items:

- (1) H-4156M CBR-Specific Load Frame (220 50/60Hz, 1 phase)
- (1) H-4454.100 Load Ring, 10,000lbf (50kN)
- (1) H-4158.1 Dial Indicator, 1.000" x .001"
- (1) H-4178 Penetration Piston with Stud
- (1) H-4178BR Dial Indicator Bracket

Physical Specifications:

- Shipping weight: 185 lbs. (78.9 kg)
- Overall height: 39"
- Base dimension: 16" x 18" x 10"

General Information

Inspection

Your CBR equipment was thoroughly inspected before it was shipped and should be ready to operate as soon as you have completed the set-up procedure.

Notify Humboldt Mfg. Co. or your local agent and file a claim with any carriers involved if you find any damage to the machine. Unpack all of the equipment carefully to prevent loss of small items or manuals.

Physical Specification

Shipping weight: 185 lbs. (78.9 kg)

Overall height: 39"

Base dimension: 16" x 18" x 10"

Power Supply

110 VAC 60 Hz 1 phase (H-4156M), 375 watts

220 VAC 50/60 Hz 1 phase (H-4156M.4F), 375 watts

Check to make sure your machine has the correct voltage for your local supply.

Power Cord

The H-4156M machine is fitted with a molded vinyl-grounding plug, while the H-4156M.4F is supplied without a plug allowing you to fit it with the correct plug for your application.

The cord is made of three conductors:

(American color-coding)

Green Ground (Earth)

White Cold (Neutral)

Black Hot (Live)

(International color coding)

Green/Yellow Ground (Earth)

Blue Cold (Neutral)

Brown Hot (Live)

Fuses

The CBR Test Machine uses a slow-blow fuse that is fitted into the left side of the machine. The replacement part number is H-1339.13.

Initial Installation

Remove the packing list and verify that all parts have been received. Normally you will receive one crate comprised of compression frame and a calibrated load ring (H-4454.100) 10,000lbf capacity, and accessories for CBR penetration.

Set the machine base up at the place it is to be used in the laboratory and then check that it is level by placing a spirit level on the platen. If it is not level, adjust the feet of the machine.

Operation

Control Panel

The control panel is situated on the front left hand side of the machine base.

Preset Speed:

H-4156M: .05 in/min. (1.27mm/min.)

H-4156M.4F (60Hz): .05 in/min. (1.27mm/min.)

H-4156M.4F (50Hz): .04 in/min. (1.00mm/min.)

Direction of Travel

It is necessary to ensure that the direction of the platen (up or down) has been correctly selected. The platen travel direction switch has three positions: up, off, down. Before changing travel direction, you must first switch to the "off" position and pause for a second before changing travel direction.

Maximum Travel Limits

The maximum up travel limit occurs when the loading screw extends beyond the reach of the drive gear and remains there – it is not indicated by a light. The down travel limit is indicated on the control panel with a red indicating light. The machine will stop operation in that direction when this light is illuminated. The maximum travel of the platen is 3.50" (88mm).

IMPORTANT

**You must use the
toggle switch to stop test.**

The machine does not
stop automatically when
the stability load is reached.

Load Ring

When a load ring is used it can be attached directly to the cross-beam using the 3/4-16 x 3" long bolt.

Maximum Load

The Marshall Compression and Testing Machine is rated at 10,000lbf (or 50kN).

Penetration Measurement

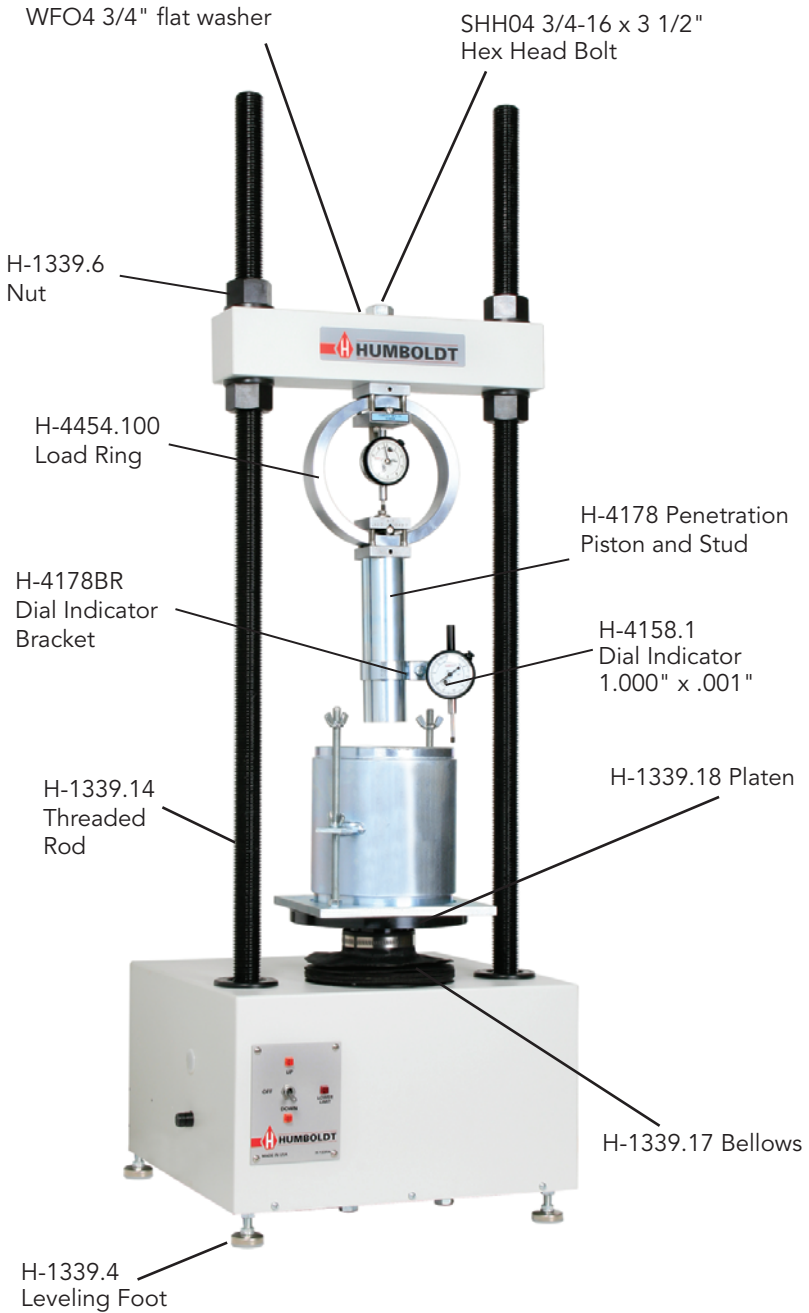
Can be measured with the H-4178 Penetration Piston and Stud and the H-4158.1 Dial Indicator, which is mounted to the penetration piston by H-4178BR Dial Indicator Bracket. These items are included with your H-4156M CBR-Specific Load Frame.

Load Ring Calibration

Your H-4454.100 was calibrated before leaving the factory. Periodically you should have it re-calibrated. Humboldt provides calibration services for these load rings, please contact us at: 1.800.544.7220, 1.708.456.6300, 1.708.456.0137 fax or hmc@humboldtmfg.com.

Maintenance

The machine and transducers should be kept clean and the machine should not be over lubricated. Light oiling with synthetic instrument oil at most is required on exposed spindles and threads.



Warranty

Humboldt Mfg. Co. warrants its products to be free from defects in material or workmanship. The exclusive remedy for this warranty is Humboldt Mfg. Co., factory replacement of any part or parts of such product, for the warranty of this product please refer to Humboldt Mfg. Co. catalog on Terms and Conditions of Sale. The purchaser is responsible for the transportation charges. Humboldt Mfg. Co. shall not be responsible under this warranty if the goods have been improperly maintained, installed, operated or the goods have been altered or modified so as to adversely affect the operation, use performance or durability or so as to change their intended use. The Humboldt Mfg. Co. liability under the warranty contained in this clause is limited to the repair or replacement of defective goods and making good, defective workmanship.

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Testing Equipment for



Construction Materials

HUMBOLDT

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