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product manual

HM-1100A

Dead-Weight Consolidation Load Frame

Setup and Operating Instructions

INSPECT THE CONTENTS OF THE CARTON (S) TO MAKE SURE ALL O OF THE COMPONENTS HAVE BEEN RECEIVED. THE SHOULD INCLUDE:

- Load Frame with lever loading arm
- Adjustable counter balance weight w/ threaded rod and (2) nuts
- Dial indicator support rod— 3/4" dia. x 12" long
- Dial Indicator adjusting bracket
- Weight hanger with connecting pin
- Load holding screw with adjusting knob
- (2) 3/8-16 x 6" anchor bolts with (4) nuts and (4) washers

Optional Accessories
Slotted weights (as ordered)
H-4471CC optional Dial Indicator 0.5" x .0001" counterclockwise
HM-1100.1 Optional Stand
HM-1220.25.4 Optional Calibration Disk for 2.5" dia.
HM-1220.25 Optional Fixed-Ring Consolidation Cell 2.5" dia.

NOTE: THE TABLE TOP THAT THE LOAD FRAME IS RESTING ON SHOULD BE OF HEAVY-DUTY CONSTRUCTION TO SUPPORT THE WEIGHTS REQUIRED FOR THE TEST.

1. Place the load frame on a lab bench or other suitable mounting location and inset the load holding screw into the block at the channel end from the bottom, so that the ball end of the screw will make contact with the bottom of the lever arm when changing to the next higher load. Attach the weight hanger with the pin provided. There are three (3) ratio positions for this hanger (9:1, 10:1 and 11:1). The chart that follows on the next page is set up for the 10:1 ratio with a 2.5" diameter sample. Be sure you have sufficient clearance for the weight hanger with weights before securing the base to the tabletop using the (2) anchor bolts supplied.
2. Attach the dial indicator support rod to the right of the base. Next, attach the dial indicator holder to the support rod. Finally, attach the dial indicator to the holder.
3. Screw the counter weight threaded rod into the rear of the lever arm, about 1" and tighten the jam nut. Adjust the counter-weight until the lever balances at a level position with the top loading arm vertical and tighten the nut. You might want to consider adjusting the weight until there is a seating load on the sample (ASTM D2435 for details)

4. Place the consolidometer with smaple on the load platform and adjust the top cross arm adjusting screw until it makes contact with the load pad in the consolidometer. Position the dial indicator over the cross arm screw until it makes contact with the load pad in the consolidometer. Position the dial indicator over the cross arm screw and adjust the indicaotrl to the desired setting. the seating load can now be applied by backing off on the load holding screw, making sure there is sufficient clearance between the screw and the lever arm.
5. Refer to ASTM D2435, D4546, AASHTO T216 OR BS 1377:PART 5:1990 for additional information on specific test procedures.
6. ASTM D-2435 requires that corrections for vertical deformations in the frame must be made by sing a steel calibration disc the same height as the sample and 0.04" smaller in diameter.

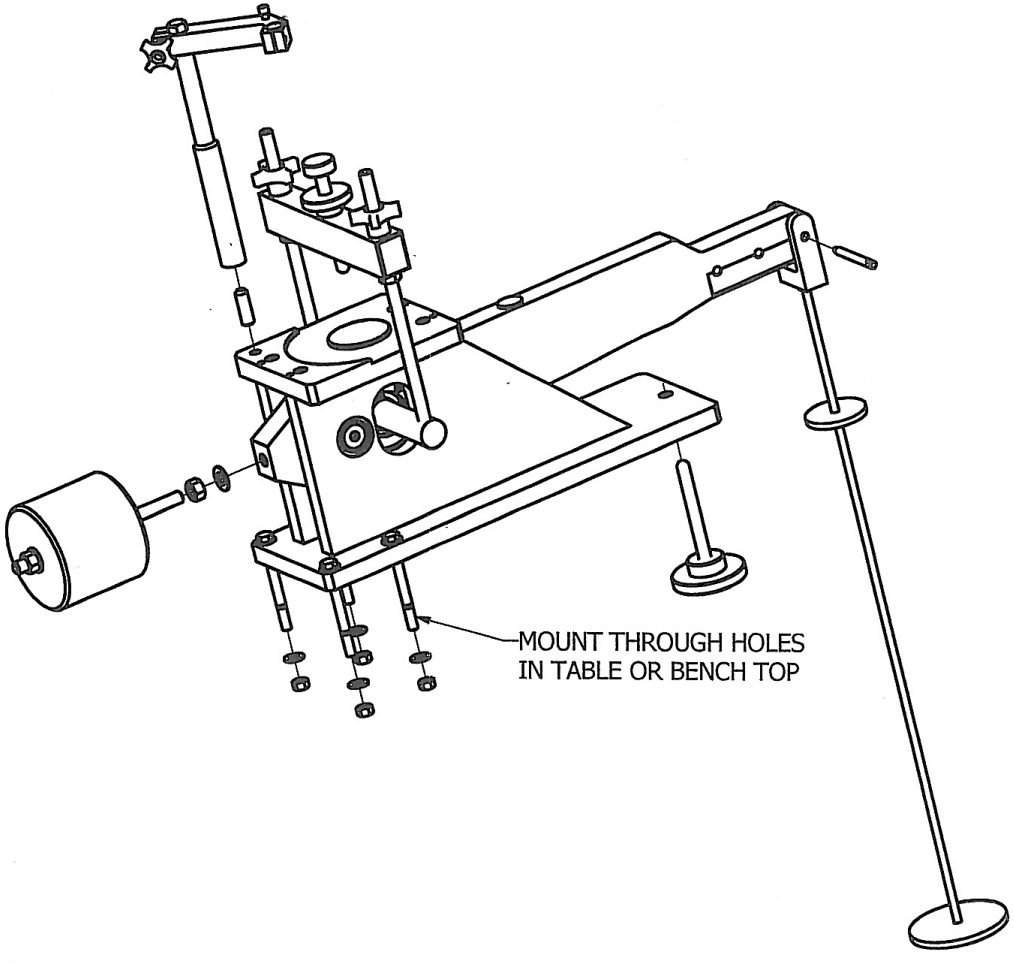
Dead Weight Consolidation Load Chart
2.5" Dia. Sample, Area = 4.9087 in²

Weights Added 10:1 Beam = Sample Load			
Quantity	Lb Wt.	Total lbs	TSF
1	.852	8.52	1/8
1	.852	17.04	1/4
1	1.704	34.09	1/2
1	3.409	68.18	1
1	6.818	136.35	2
1	13.635	272.7	4
1	27.27	545.4	8
2	27.27	1090.8	16
4	27.27	2181.6	32

Weights Sets			
Kg Weight Set	1Kg	4 Kg	8Kg
HM-1122	4	3	2
HM-1123	4	5	5

16 tsf Weight Set	1/8 tsf	1/4 tsf	1/2 tsf	1/8 tsf	2 tsf	4 tsf
HM-1120	2	1	21	1	1	1

32 tsf Weight Set	
HM-1121	Add (4) 4 tsf weights to the 16 tsf set listed above


MOUNT THROUGH HOLES
IN TABLE OR BENCH TOP

Consolidation (Dead Weight) Typical Setups:

Part #	Qty	Description
Dead Weight Consolidation		
HM-1100A	1	Dead Weight Consol Frame-Front Load
HM-1120*	1	Weight Set, 16 TSF
HM-1220.XX	1	Fixed Ring Consolidation Cell
H-4471CC	1	Dial Gauge, 0.5" X .0001" CC
Dead Weight Consolidation w/ Analog Data Acquisition		
HM-1100A	1	Dead Weight Consol Frame-Front Load
HM-1120*	1	Weight Set, 16 TSF
HM-1220.XX	1	Fixed Ring Consolidation Cell
HM-2310.04	1	Strain Transducer 0.4" (10mm)
HM-2310BR	1	Strain Transducer Bracket
HM-2325A.3F	1	MiniLogger 4 CH Analog Data Acquisition
HM-1100SW	1	HMTS Consolidation Reporting Software
Dead Weight Consolidation w/ Digital Data Acquisition		
HM-1100A	1	Dead Weight Consol Frame-Front Load
HM-1120*	1	Weight Set, 16 TSF
HM-1220.XX	1	Fixed Ring Consolidation Cell
HM-4469.10	1	Digital Indicator 1" x .0001" (25 x 0.002 mm)
HM-4469C	1	Data Cable for Indicator
HM-2330D.3F	1	MiniLogger 4 CH Digital Data Acquisition
HM-1100SW	1	HMTS Consolidation Reporting Software

Consolidation testing to ASTM D2435, D4546; AASHTO T216 and BS 1377 part 5 can be carried out using our manual loading frame, the HM-1100A or one of the pneumatic loading machines, the HM-2432 or HM-2470A.

Specifications	
Load Capacity	48 tsf (4,597 kPa)
Beam Ratios	9:1, 10:1 and 11:1
Frame Construction	Heavy-duty aluminum frame with stainless steel vertical, horizontal and beam support rods
Cell Platform	Anodized aluminum with locating pins for centering cells.
Dimension (W x D x H)	7-3/4" x 32" x 19-1/2" (197 x 812 x 495 mm)
Weight	47 lbs. (21kg)
Shipping Weight	62 lbs (28kg)

Part Numbers ending in .XX require a size code to be entered referring to the sample size to be tested.

For Consolidation samples, sizes are: .20 = 2.0"; .242 = 2.42"; .25 = 2.5"; .30 = 3.0"; .40 = 4.0"; .50 = 50mm; .70 = 70mm; .75 = 75mm, and .100 = 100mm.

*For Metric applications, use HM-1122, Weight Set, 32kg.

Single-Station Frame Stand— HM-1100.1
Triple-Station Frame Stand— HM-1100.3
Butcher Block Table-top with heavy-duty, steel frame designed to provide stable mounting platform for HM-1100A Consolidation frames. Consolidation frames can be bolted to table too and table can be bolted to floor for increased stability.
Single: Shipping wt. 50 lbs. (23kg)
Triple: Shipping wt. 75 lbs. (34kg)

Humboldt Mfg. Co.
875 Tollgate Road
Elgin, Illinois 60123 U.S.A.

U.S.A. Toll Free: 1.800.544.7220
Voice: 1.708.468.6300
Fax: 1.708.456.0137
Email: hmc@humboldtmfg.com

Testing Equipment for Construction Materials

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www.humboldtmfg.com