

Dead-Weight Consolidation Load Frame Model 1100

INTRODUCTION

The Dead-Weight Consolidation Load Frame is a compact table top unit with 48tsf (4597kPa) capacity for application of loads in stress-controlled consolidation testing of soil specimens. The Load Frame is simple and efficient to use and the advanced design allows instantaneous loading with minimal impact. Vertical rods and beam support rods are made from stainless steel, and a rugged anodized aluminum plate is used for corrosion resistance in harsh laboratory environments. A counterbalanced beam assembly allows 9:1, 10:1 or 11:1 beam ratios for wider selection of loads with weight sets. Locating pins on the top platform precisely center the Consolidometer for loading. The loading platform has vertical x horizontal clearance of 5.25x6.38in (133x161mm) and accepts Consolidometers for specimen sizes up to 3in (76.2mm).

Weight Set, Consolidometer (fixed or floating ring) and Dial Indicator (mechanical or digital) or LVDT are required to perform testing and are sold separately. Consolidometer includes loading pad, cutting sample ring, top and bottom porous stones, acrylic inundation ring and load-bearing ball.

Consolidation Load Frame Stand (Part no. 1100-1) and Calibration Discs (optional accessories) are sold separately.

FEATURES

- Meets ASTM D2435, ASTM D4546 and AASHTO T 216 standards
- Stainless-steel vertical and beam support rods
- Corrosion-resistant anodized aluminum frame
- Counterbalanced beam assembly
- Instantaneous loading with minimal impact

REQUIRED ACCESSORIES *(Purchased separately):*

- Weight Set (refer to weight charts on back)
- Consolidometer – fixed or floating ring (refer to Consolidometer chart on back)
- Dial Indicator – mechanical (5102) or digital (6820, 6830) OR
- Displacement Transducer (6151, 6152) with Data Readout Box (6572, 6574)



Model 1100 shown with 1100-1

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Pound Weight Sets								
Model	Total Mass	Total Load at 10:1 Beam Ratio ¹	Included Weight Sets					
			0.852lb (1/8tsf)	1.704lb (1/4tsf)	3.409lb (1/2tsf)	6.818lb (1 tsf)	13.635lb (2tsf)	27.270lb (4tsf)
1119	54.5lb	545lbf (8tsf)	2	1	1	1	1	1
1120	109.1lb	1,091lbf (16tsf)	2	1	1	1	1	3
1121	218.2lb	2,182lbf (32tsf)	2	1	1	1	1	7

¹tsf values indicate force applied to a 2.50in diameter specimen using a 10:1 beam ratio.

Kilogram Weight Sets					
Model	Total Mass	Total Load at 10:1 Beam Ratio	Included Weight Sets		
			1kg	4kg	8kg
1122	32kg	320kg	4	3	2
1123	64kg	640kg	4	5	5
1124	88kg	880kg	4	5	8

Description	Fixed Ring Consolidometer	Calibration Disc
50mm (1.969in) Fixed Ring Consolidometer	1240-A	1214-A
2in (50.8mm) Fixed Ring Consolidometer	1240-B	1214-B
60mm (2.36in) Fixed Ring Consolidometer	1240-C	1214-C
2.42in (61.5mm) Fixed Ring Consolidometer	1240-D	1214-D
2.5in (63.5mm) Fixed Ring Consolidometer	1240-E	1214-E
70mm (2.756in) Fixed Ring Consolidometer	1240-F	1214-F
75mm (2.95in) Fixed Ring Consolidometer	1240-G	1214-G
3in (76.2mm) Fixed Ring Consolidometer	1240-H	1214-H
Description	Floating Ring Consolidometer	Calibration Disc
50mm (1.97in) Floating Ring Consolidometer	1210-A	1214-A
2in (50.8mm) Floating Ring Consolidometer	1210-B	1214-B
2.42in (61.47mm) Floating Ring Consolidometer	1210-D	1214-D
2.5in (63.5mm) Floating Ring Consolidometer	1210-E	1214-E
70mm (2.76in) Floating Ring Consolidometer	1210-F	1214-F

OPTIONAL ACCESSORIES *(Purchased separately):*

- 1100-1 Consolidation Load Frame Stand
- Calibration Discs (refer to Consolidometer chart above)
- 6571 Consolidation Data Acquisition Software

UNPACKING & SETUP

1. Inspect the 1100 for damage, remove it from the pallet
2. Ensure the following items are included:
 - Adjustable counterbalance weight with threaded rod and nuts (x2)
 - Dial Indicator support rod
 - Dial Indicator adjusting bracket
 - Weight hanger with connecting pin
 - Load-holding screw with adjusting knob
 - Anchor bolts (x2), nuts (x4) and washers (x4)
3. Unpack the required accessories (ordered separately):
 - Weight Set(s)
 - Consolidometer(s)
 - Dial Indicator or LVDT and Data Readout Box
4. Fasten the Load Frame to a sturdy table using the included 3/8" diameter by 5" long Anchor Mounting Bolts, making sure there is enough clearance for the load-holding screw and the weight hanger.
- 4a. Fasten the Load Frame to the Load Frame Stand. The stand includes a front and back leg with four 3/4"-16 x 1" Hex Head Bolts, and four Hex Nuts.

Remove the two screws on the back underside of the load frame base. Attach the back leg to this area using the longer screws that were included with the stand.

Bolt the front leg into the base using the two of the included bolts and two hex head bolts.

OPERATING INSTRUCTIONS

1. Read all safety and operating instructions before operating the unit
2. Consult ASTM D2435, ASTM D4546 or AASHTO T 216 for specific instructions on the testing procedures
3. Fasten the weight hanger to the unit and adjust using the connecting pin
4. Secure the Dial Indicator support rod toward the back of the base, fasten the Dial Indicator holder to the rod and then connect the Dial Indicator or LVDT to the holder
5. Insert the counterbalance weight with threaded rod approximately 1" and tighten the jam nut
6. Balance the lever with the top loading arm by adjusting the counterweight and tighten the nut
7. Set the Consolidometer (with sample) on the platform and turn the adjusting screw until contact is made with the load pad in the Consolidometer
8. Adjust the Dial Indicator or LVDT to the desired setting