

Gilson Load Frame 0.00001—0.29999in/min, 20,000lbf (89kN) HM-399 and HM-399F

INTRODUCTION

The versatile HM-399 Load Frame can be utilized for multiple soil tests. Individual component sets can be fitted to the load frame to perform California Bearing Ratio (CBR), Unconfined Compressive Strength, Soil Cement, and Triaxial tests.

This 20,000lbf (89kN) capacity frame has a strain rate of 0.00001—0.29999in/min (0.000254—7.62mm/min) controlled to +/- 1% of set point. Front panel controls allow the operator to adjust the direction and speed of the platen. The strain rate is set using thumbwheel selector. Sliding the cross-arm up or down the coarse-threaded 1.25in (32mm) diameter rods and tightening the nuts makes adjustment for the wide variety of testing components quick and easy.

FEATURES

- Precision adjustable strain rate of 0.00001—0.29999in/min (0.000254—7.62mm/min) allows for multiple testing options
- Powerful 1/4hp DC drive motor
- Load capacity up to 20,000lbf (89kN)
- Maximum frame opening of 11.9 x 37.3in (302 x 947mm)
- Durable 16-gauge steel cabinet and precision loading screw
- Hardened steel 8in (203mm) diameter platen accepts a wide variety of test fixtures
- Heavy 1.25in (31.8mm) diameter vertical rods with coarse threads
- Front panel controls
- Upper and lower limit indicator lights
- Corrosion-resistant components

UNPACKING & SET UP

1. Inspect your HM-399 for damage, remove it from the pallet.
2. Place the load frame on a sturdy, level surface such as a bench top or HMA-94 Load Frame Cart.
3. Connect to a properly grounded power supply with correct voltage and amperage output.
4. Adjust and level the crossarm to the appropriate height.
5. Install required Component Set and any accessories required for testing.



HM-399

(Continued on back.)

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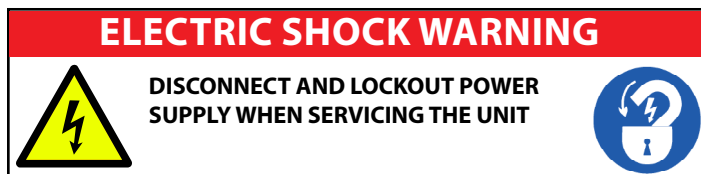
FRONT PANEL CONTROLS

1. **Main Power On/Off:** Switch is illuminated when **ON**.
2. **Strain Rate:** Thumb wheels are used to select the platen speed.
3. **Run:** Sets the platen direction and operates the unit continuously at the strain rate set by the thumb wheel.
4. **Stop:** Pressing the stop switch stops the platen movement.
5. **Jog Button:** Increases the speed of platen to the maximum speed of the load frame jack screw (0.3in/min) when the switch is pushed to the up position.

INDICATOR LIGHTS

1. **Limit up, Red:** The platen has reached the upper limit of travel. No further movement upward is possible.
2. **Up, Yellow:** Shows the current direction of travel, when platen is moving up.
3. **Run, Green:** The load frame is in operating mode at the speed selected by the thumb wheels.
4. **Down, Yellow:** Shows the current direction of travel when platen is moving down.
5. **Limit down, Red:** The platen has reached the lower limit of travel. No further movement downward is possible.

OPERATING INSTRUCTIONS



1. Read all safety and operating instructions before operating the unit.
2. Connect the three-pronged plug to a properly wired grounded receptacle with appropriate electrical current for the machine.
3. Install kit or individual components to measure load, displacement, or other properties according to specific test method.
4. Power the unit on with the main power switch.
5. Mount the selected test fixture on the machine platen and ensure it is centered. Raise or lower the platen with the JOG switch so there is enough travel for the requirements of the test without reaching the mechanical limit.
6. Set the desired strain rate using the thumb wheel selector.
7. Use the Run switch to select the desired direction of travel by raising or lowering the switch. If a limit switch is active in the chosen direction, as indicated by the red limit indicators, the motor will not run. Once running, the appropriate yellow direction and green RUN indicators will be illuminated. The platen will run until the STOP button is pressed or a limit switch is tripped.
8. After the test is complete, use the JOG or RUN switch to reposition the platen.

COMPONENT SETS

California Bearing Ratio (CBR)	
ASTM D1883; AASHTO T 193	
HMA-684	6,000lbf load ring, dial indicator, piston
HMA-685	10,000lbf load ring, dial indicator, piston
HMA-685D	10,000lbf load cell, LVDT, readout box, piston

Soil Cement	
ASTM D1632, D1633	
HMA-687	10,000lbf load ring, dial indicator, 4 in platen
HMA-687D	10,000lbf load cell, LVDT, readout box, 4 in platen

Triaxial	
ASTM D2850, D4764; AASHTO T 296, T 297	
HMA-686	1,000lbf load cell, dial indicator
HM-413	1,000lbf load cell, LVDT, readout box

Unconfined Compressive Strength	
ASTM D2166; AASHTO T 208	
HMA-681	500lbf load ring, dial gauge, plastic discs
HMA-683	1,000lbf load ring, dial gauge, plastic discs
HMA-683D	1,000lbf load cell, LVDT, plastic discs

Accessories	
HMA-94	Load Frame Cart