

Load Frames

Load Frames are useful devices employed for application of compression and penetration loads required for various tests, such as Unconfined Compression Test, Triaxial Shear Test, California Bearing Ratio Test etc. The load application is effected by advancement of a lead screw secured against rotation by a sliding key. The load is measured with a Proving Ring. UMI manufactures a wide variety of mechanical Load Frames with different designs of frame structure, modes of operation (manually or electrically driven), loading capacities, speeds of travel, so that appropriate selection is possible to meet the requirements of standard methods used for various tests to cover different soil types and sizes of specimens.

UMI - 147 - 1

Load Frame Motorised 3 speeds, 50 kN (5,000 kgf)

- Two Pillar type
- Light weight and Sturdy
- Ideal for using in mobile laboratory also.

This load frame is designed for conducting unconfined, triaxial, CBR and other routine tests.

Loading system comprises of a screw jack with a detachable handle. The lower platen moves up and down. The top bracket is adjustable for vertical clearance and has an adaptor for connecting standard proving rings. A dial guage mounting bracket is provided on one of the two pillars. Rate of strain : 3 (1.25, 1.50, 2.50 mm / min.) Suitable for operation on 220 V, 50 Hz, single phase, AC supply.

UMI - 147 - 2

Load Frame, Hand operated, 50 kN (5,000 kgf)

- Portable, light weight and sturdy
- Can be used in the Field and Mobile laboratory
- Useful for CBR and Triaxial Tests

The unit is designed for a maximum load of 50 kN and consists of a two speed screw jack, mounted in a frame with identical top and base channel pieces so that the unit can be placed either way up and the device can be used for loading from above or from below, whichever is convenient.

UMI - 147 - 3

Load Frame, Motorised, 30 speeds, 50 kN (5,000 kgf)

- Two Pillar
- Detachable Frame
- Enclosed Motor and Gear system
- Jewel Lamps indicating direction of motion
- Speed chart
- Operational ease
- Useful for Triaxial and CBR Tests

The Load Frame consists of a cabinet which houses the gear system and motor with sturdy angle iron frame. The loading is done through the bottom loading platen, which is carried on a lead screw which advances upwards. The top load bracket, which slides over two upright pillars, can be positioned at any desired height and locked. It carries a screw adapter for standard proving rings.

The loading part of the unit is detachable from main unit for ease of transport and to avoid damage to the tension rods. Rates of strain : 30, (between 6 mm / min and 0.00048 mm/min.) By interchanging the drive & driven gears, another set of 24 rates of strain can be obtained. Suitable for operation on 220 V, 50 Hz, single phase, AC Supply.

Note : Due to constant R&D, specifications are subject to change without prior notice.



UMI - 147-1



Soil

UMI - 147 - 4

Load Frame, Motorised, 12 speeds, 200 kN (20,000 kgf)

- Two pillar type
- Detachable frame
- Enclosed motor and gear system
- Jewel lamps indicating direction of motion
- Operational ease

The Load Frame is extremely versatile and designed to conduct triaxial shear test on soil and rock specimens.

The instrument consists of a cabinet which houses the gear system and motor with sturdy angle iron frame.

The loading is done through the bottom loading platen, which is carried on a lead screw which advances upwards.

The top load bracket, which slides over two upright pillars, can be positioned at any desired height and locked.

It carries a screw adaptor for standard proving rings. The loading part of the unit is detachable from the main unit for ease of transport and to avoid damage to the tension rods.

Rates of Strain : 12 (between 1.25 and 0.00064 mm/min)

Suitable for operation on 220 V, 50 Hz, Single Phase, AC Supply.

UMI - 147 - 5

Load Frame, Motorised, 500 kN (50,000 kgf)

The Load Frame is designed for conducting triaxial shear tests on rock specimens, but its use can be extended to any field where there is a requirement of the rates of strain of this load frame to be applied. This load frame gives a choice of twelve rates of strain from a maximum of 5 mm/min to 0.000125 mm/min. Suitable for operation on 3 Phase, 415 V, AC Supply.

It consists of a cabinet housing the electric motor, reduction gear and the turret gear box.

Two pillars are fitted on the base over the cabinet.

The load is applied by advancement of a lead screw. A suitable adapter is provided for fixing a 500 kN capacity proving ring which is supplied at extra cost. This load frame has a platen of about 25 cm dia to house the High Pressure Triaxial Cell for testing rock specimens.

Specifications

Cat. No.	UMI - 147 - 1	UMI - 147 - 2	UMI - 147 - 3	UMI - 147 - 4	UMI - 147 - 5
Capacity	50 kN (5000 kgf)	50 kN (5000 kgf)	50 kN (5000 kgf)	200 kN (20,000 kgf)	500 kN (50,000 kgf)
Types of Operation	Electrical-cum-manual	Manual	Electrical-cum-manual	Electrical-cum-manual	Electrical-cum-manual
Rates of Strain	Three Rates : 1.25, 1.5 & 2.5 mm/min	-	Thirty Rates ; 0.00048 to 6 mm/min	Twelve Rates : 0.0064 to 1.25 mm/min	Twelve Rates : 0.000125 to 5 mm/min
Horizontal Clearance	240 mm	290 mm	300 mm	300 mm	-
Vertical Clearance	700 mm	550 mm	-	750 mm	-
Maximum Platen dia	198 mm	-	198 mm	198 mm	250 mm
Maximum Platen Travel	160 mm	115 mm	100 mm	100 mm	160 mm
Specimen dia	38 to 100 mm	38 mm	38 to 100 mm	38 to 100 mm AX, BX, NX cores of rock	AX, BX, NX cores of rock upto 100 mm dia & 150 mm cubes of stabilized soils
Application	Triaxial CBR & Unconfined Compression test	General Purpose, CBR, Triaxial tests	Triaxial and CBR tests	Triaxial test on rocks, Unconfined Compression test on medium & coarse grained stabilized soil	Triaxial test on rocks, Unconfined Compression test on medium & coarse grained stabilized soil

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