

Digital Direct Shear Test Apparatus Model UMI-115E

Digital Direct Shear Test Apparatus – Motorized with Twelve Speed

Salient Features

- Tactfully Designed
- Aesthetical outer appearance
- Powder coated exterior body
- Hard Chrome Plated essential internal components
- Shear box made from Complete Brass/Gunmetal.
- Electrically operated to give constant rate of strain at 1.25 mm/min.
- Supplied with loading yoke with direct and lever for applying load.
- Normal stress capacity 8 Kg/ Sq.cm.
- Load is applied either directly or through a counter balanced detachable lever.
- Provision is made for the load to be applied either through a steel ball recessed in the loading pad or direct through a boss on the pre-calibrated loading yoke.
- Precise and accurate control through electronic system (PC Software at extra cost)
- High sensitive LVDT and Microprocessor based digital read out unit
- Facility for selection of measurement unit KN, KG



*Software at additional cost

Construction Details

In addition to other components like shear box assembly, Gripper assembly, porous stones, plain grid plates, perforated grid plates, loading pads, specimen cutter, set of weights, shear box housing, loading unit as per the conventional instrument, the Electronic Digital Direct Shear Machine is also fitted with following additional electronics components.

- **Load cell 2 KN capacity (Tension/compression) 01 No.**

As per capacity of the machine for measuring shearing force

- **Displacement transducers $\pm 20\text{mm}$ 02 Nos.**

One for consolidation measurement and other for strain measurement.

- **Digital display for all parameters operating on 220 Volts, 50 Hz, A.C. supply. 01 No.**

A three channel microprocessor based read-out unit which can be connected to the two displacement transducers and the load cell for measuring consolidation, horizontal strain and shear load respectively in direct engineering unit.



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- On-Line Data Acquisition Software
 - On-Line Data Transmission from Signal Conditioning Unit to Computer
 - Off-Line Data Analysis Software that does all the Calculations of Direct Shear Test
 - Has option for manual as well as automatic recording of data
 - Calculates Area, Volume, Bulk density, Dry density, Moisture content etc of the specimen
 - Easy to set up and conduct the test
 - Company logo and address on welcome screen
 - Password protected login screen
 - Software automatically detects the available Communication Ports (com-ports) to establish RS-232 connection
 - Facility to identify and display true/false com-port connection by green or red lamp indication within the software, Eliminating human error
 - User can enter new party name and address details to save all test specific information for later work.
 - Previously stored party name and address details can also be loaded by browsing directory of stored data.
 - An operator can feed in various input information about the test sample.
1.
 1. Test no
 1. Test Material
 1. Sample type
 2. Test Speed
 3. Date & Time
 4. Density of test sample,
 5. Sample weight
 6. Moisture content,
 7. Location of test sample,
 8. Area correction option
 9. No of tests
- Large on-board LCD Screen display
 - Direct entry via touch sensitive keyboard
 - Facility to start or stop the complete instrument from software itself
 - User can control and vary the Motor Speed from the software itself
 - Pause and speed reset during the test
 - Self test diagnostic features
 - Facility to select the specimen type : Square or circular
 - Facility to select the area correction option : Yes or No
 - Facility to select the type of sample : Drain or Undrain
 - Can store the data of previous test for future use
 - Real time graph building during the specific test



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2. Horizontal Displacement vs Vertical Displacement
 3. Normal stress vs Shear Force
 4. Display maximum value of the Dilation Angle along with C & ϕ Values
- Four different graph windows on a single screen for a specific test sample (Four different readings for each test - so each reading can be compared in real time and the last graph displays the overlap of three different readings for easy comparison)
 - Tabulated test data, graphs and all test-specific calculations are provided in real time, allowing the operator to monitor tests in process
 - Automatic calculation of Friction Angle & Cohesion Intercept for Peak & residual values
 - Can export logged readings easily to Excel or PDF file
 - Compatible with most soil & rock direct shear test system

Facility to represent results in 2 different units

1. MKS - METER, KILOGRAM, SECOND SYSTEM
 2. FPS - FOOT, POUND, SECOND SYSTEM
- An operator can change the background of the software.
 - An operator can also add or remove the specific parameters within the software as per the requirements.

Note : Use of Proper Voltage Stabilizer for fluctuation free power supply is recommended to safeguard electronic parts.