

Product Code

ShearTrac II-DSS CY

The ShearTrac II-DSS CY system is a universal shear system capable of performing the consolidation, static and cyclic direct simple shear phases under full automatic control. This system is of the type developed at NGI in the mid 1960's. The DSS test generates a fairly homogeneous state of shear stress throughout the specimen, which provides initial stress condition, stress path, and deformation configuration that models numerous field loading conditions more closely than any other strength tests such as triaxial. The system consists of a computer controlled unit that utilizes micro-stepper motors to apply the vertical and horizontal loads to the soil specimen.

The system is capable of running a consolidation phase for up to 32 increments automatically. Stress controlled cyclic can be applied up to a frequency of 1 Hz that can be followed by simple shearing at a specified rate of deformation or force. The constant volume condition is maintained through a closed loop computer control with the vertical displacement sensor as the feed back. The system is capable of displaying the current status of a test and graphically portraying the progress of the test in real time. The system includes the capability for the operator to alter the test process and conditions at any stage of the test.

The system comes complete with hardware and software for recording all test input data and settings of selected test parameters, performing standard engineering calculations on the data, and producing graphically plotted and printed output.

Applicable Test Standards

- ASTM D 6528 Consolidated Undrained Direct Simple Shear Testing of Cohesive Soils
- ASTM D 2435/T 216 One-Dimensional Consolidation Properties of Soils

User Benefits

- Choose load capacity to fit user needs up to 5kN (1,000 lbs.)
- Total automation, control, data collection and reporting of test results
- Prepare tables and plots of report quality within minutes of completing a test
- Geo-NET compatibility lets unit be accessed and controlled over a computer network
- Generate columns of data for easy reduction using your own spreadsheet software
- Accurate displacement rate control from 0.00003 to 15 mm per minute (0.000001 to 0.6 in. per minute)
- Select number of data points logged per cycle from 10 to 500 readings per second
- Manual control capability through front keypad and LCD menus
- Versatile system

SOIL SPECIMEN DIMENSIONS:

Diameter: 2.5 in. (63.5 mm) up to 4.0 in. (101.5 mm)

Dimensions	228 mm x 560 mm x 762 mm (9 in. x 22 in. x 30 in.)
Weight (approx.)	63 kg (140 lbs.)



Accessories	Geo-NET-PC Network/Communication card to link ShearTrac II-DSS to PC. Teflon-coated stacked rings, and stainless steel trimming ring
Software Module	Cyclic DSS Software package to automatically run and edit cyclic and static direct simple shear test
Options	Direct/Residual Shear, Incremental Consolidation, and CRC options available upon request

Technical Specifications

Capacity	Up to 10 kN (2,000 lbs.)
Vertical Force	Stepper motor with built-in controls for vertical load and displacement
Horizontal Force	Stepper motor with built-in controls for horizontal load and displacement
Speed Range	0.00003 to 15 mm per min. (0.000001 to 0.6 in per minute)
Frequency Range	Up to 1 Hz.
Vertical Travel	25.45 mm (1.00 in.) resolved to 0.0013 mm (0.00005 inches)
Horizontal Travel	±12.5 mm (±0.50 in.) resolved to 0.0013 mm (0.00005 inches)
Power	Single Phase 208 VAC/60Hz (US) / 220 VAC/50Hz (international)