

# LARGE CYCLIC SIMPLE SHEAR

## SHEARTRAC III

The ShearTrac III large cyclic direct simple shear (LCDSS) system performs consolidation, static, and cyclic direct simple shear phases on large (12 in/ 305 mm) diameter samples under full automatic control. 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 a micro-stepper motor to apply the vertical load and an advanced servo motor to apply the horizontal cyclic load to the soil specimen.

- Consolidate with or without initial shear stress
- Run drained and undrained (constant load/volume with active or passive volume control) tests
- Post cyclic drained/undrained loading
- Built in safety features
- Smart and sophisticated technologies to simplify testing
- Repeatable, reliable, and accurate results you can trust
- Real-time and remote test parameter changes for quality control
- Convenient reporting and data export
- Faster, smarter, better: designed with full automation and manual control options
- Easy upgrade to perform additional test types
- Designed and manufactured in the USA



Standard Cyclic Simple Shear ShearTrac III

### Applicable Test Standards

- ASTM D6528, D2435, D8296

# LARGE CYCLIC SIMPLE SHEAR **SHEARTRAC III**

## TECHNICAL SPECIFICATIONS

### LOAD CAPACITY

22 kN (5 klbf) horizontal      45 kN (10 klbf) horizontal  
45 kN (10 klbf) vertical      OR      45 kN (10 klbf) vertical

### VERTICAL/HORIZONTAL MOTORS

Micro-stepper and servo motor systems with built-in controls

### CONTROL

- Stress (load)
- Strain (displacement)

### CYCLIC RATE

Up to 5 Hz; Typical test range 0.033 to 2 Hz

### TYPE OF CYCLIC LOADING

Cyclic stress/strain controlled sinusoidal and irregular user defined waveform

### VERTICAL TRAVEL

90 mm (3.5 in) resolved to 0.002 mm (0.00008 in)

### HORIZONTAL TRAVEL

90 mm (3.5 in) resolved to 0.002 mm (0.00008 in)

### POWER

120/208 V, 3 phase

### DIMENSIONS/WEIGHT

610 x 1346 x 1168 mm (24 x 53 x 46 in) / 358 kg (790 lbs)

### INCLUDED

- GeoNet-U USB 2.0 network adapter and cable to link to PC/laptop
- CDSS software module to automatically run and report tests

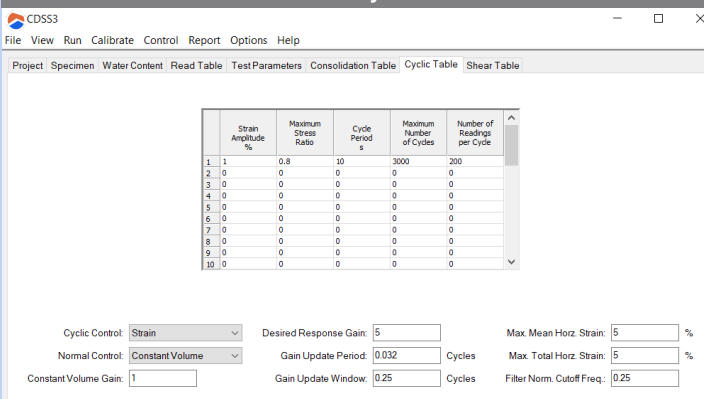
### ACCESSORIES

- Gripping plates optional for GCL testing
- 12 in diameter ring set
- DSS software
- Direct Shear software & shear box

### WARRANTY

12 month warranty; extended warranties available

## User-Friendly Interface



**CDSS3**  
File View Run Calibrate Control Report Options Help

Project: Specimen Water Content Read Table Test Parameters Consolidation Table Cyclic Table Shear Table

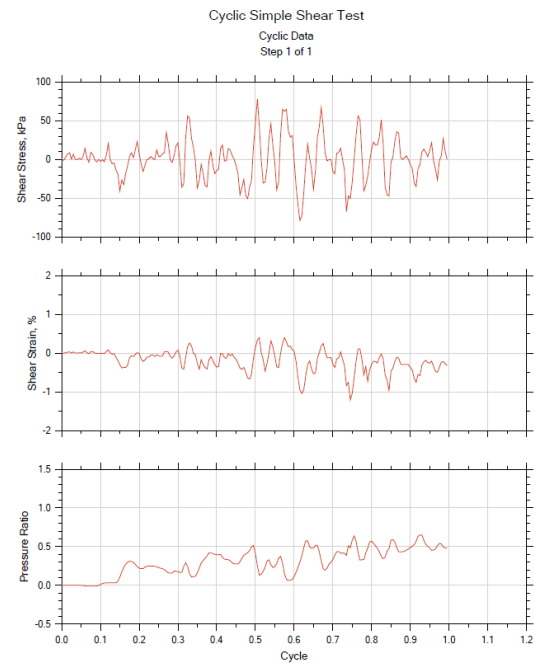
	Strain Amplitude %	Maximum Stress Ratio	Cycle Period s	Maximum Number of Cycles	Number of Readings per Cycle
1	0.8	10	3000	200	
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	
7	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	

Cyclic Control:  Desired Response Gain:  Max. Mean Horiz. Strain:  %

Normal Control:  Gain Update Period:  Cycles Max. Total Horiz. Strain:  %

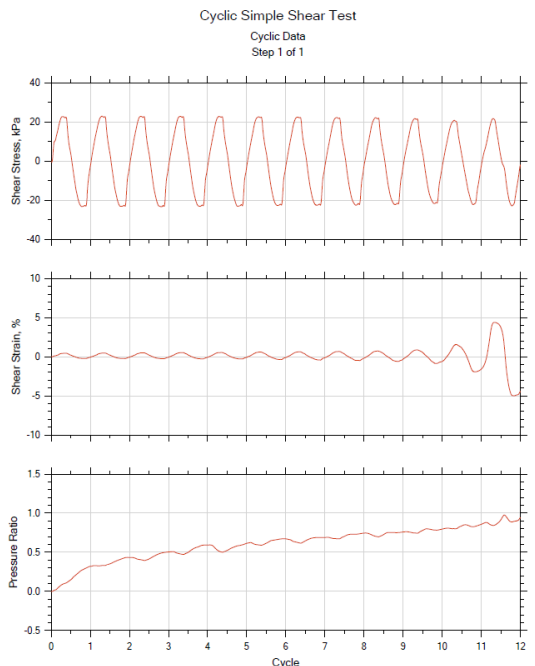
Constant Volume Gain:  Gain Update Window:  Cycles Filter Norm. Cutoff Freq:

## Typical Test Output (example)



Project Name: USA	Location:	Project Number: Seismic
Boring Number:	Tester: bn	Checker: dl
Sample Number:	Test Date: 01/10/2018	Depth:
Test Number:	Preparation:	Elevation:
Description: Cyclic Simple Shear test with CHCI Earthquake Record - Vertical effective stress is 300 kPa		
Remarks:		

## Typical Test Output (example)



Project Name: Anytown, USA	Location:	Project Number: Seismic
Boring Number:	Tester: sr	Checker: qa
Sample Number:	Test Date: 03/19/2018	Depth:
Test Number:	Preparation:	Elevation:
Description: Cyclic Simple Shear test on poorly graded fine Ottawa sand - Vertical effective stress is 200 kPa		
Remarks:		

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