

## BIDIRECTIONAL CYCLIC DIRECT SIMPLE SHEAR

Cyclic bidirectional direct simple shear enables researchers and geotechnical engineers to subject specimens to cyclic and monotonic loads in two directions. This allows users to simulate the actual 3D loads and displacements acting on the specimens in nature. Example applications include simulating the 3D loads and displacements that soil is subjected to for offshore structures; assessing liquefaction triggering and susceptibility considering 3D loads and displacements; application of both components of strong ground motion on the specimen in form of Cyclic Stress Ratio (CSR) or strain rate time histories.

- 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

### Applicable Test Standards

- ASTM D6528, D8296



Bidirectional Cyclic Direct Simple Shear System

# BIDIRECTIONAL CYCLIC DIRECT SIMPLE SHEAR

## TECHNICAL SPECIFICATIONS

### LOAD CAPACITY

Horizontal load capacity up to 4.5 kN (1 klbf)  
Vertical load capacity up to 11 kN (2.5 klbf)

### MOTORS

Micro-stepper (V) and zero backlash servo actuation system

### CONTROL

- Stress (load)
- Strain (displacement)

### CYCLIC RATE

0.033 Hz up to 10 Hz

### POWER

208-240 V, 50/60 Hz, 1 phase

### DIMENSIONS

813 x 686 x 1270 mm (32 x 27 x 50 in)

### WEIGHT

172 kg (380 lbs)

### HORIZONTAL TRAVEL

50 mm

### VERTICAL TRAVEL

50 mm

### INCLUDED

GeoNet-U USB 2.0 network adapter and cable to link to PC/laptop

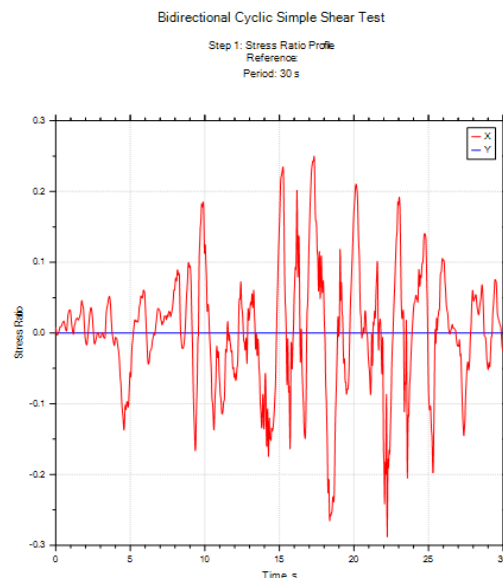
### ACCESSORIES

- P&S wave velocity measurement option using bender/extender elements
- BCDSS.REPORT: editing/reporting software for multiple tests

### WARRANTY

12 month warranty; extended warranties available

## Typical Test Output (example)

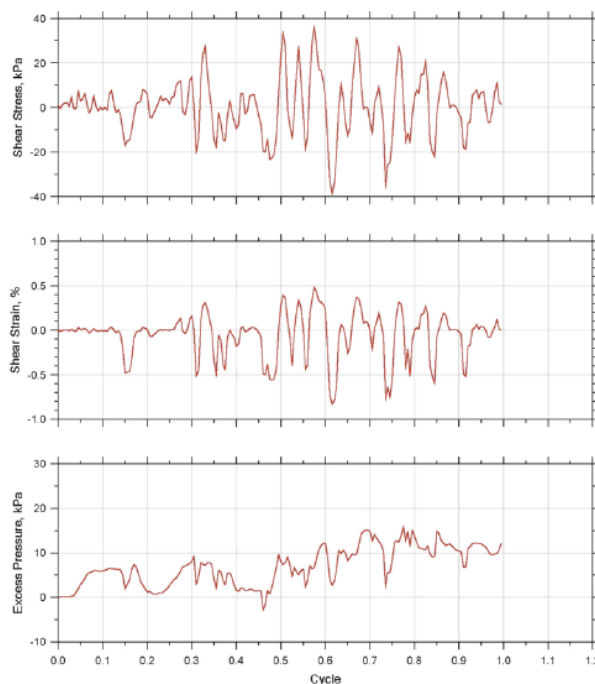


Project Name	Location	Project Number: 425022
Spring Number	Tester: AA	Checker:
Sample Number	Test Date: 12/17/2020	Depth:
Test Number	Preparation	Elevation:
Description	Reference: BCDSS, BCDSS 1.1, P&S, Spring 1.0, P&S	

2021-05-11 10:09:16 V 2.0.10.200

1

## Typical Test Output (example)



## User Friendly Interface

BCDSS

File View Run Calibrate Control Report Options Help

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

	X Enable	X Stress Ratio	Y Enable	Y Stress Ratio	Y/X Phase deg	Maximum Peak-Peak Strain %	Maximum Pressure Ratio	Cycle Period s	Maximum Number of Cycles	Number of Readings per Cycle
1	<input type="checkbox"/>	0	<input type="checkbox"/>	0	0	0	0	0	0	0
2	<input type="checkbox"/>	0	<input type="checkbox"/>	0	0	0	0	0	0	0
3	<input type="checkbox"/>	0	<input type="checkbox"/>	0	0	0	0	0	0	0
4	<input type="checkbox"/>	0	<input type="checkbox"/>	0	0	0	0	0	0	0
5	<input type="checkbox"/>	0	<input type="checkbox"/>	0	0	0	0	0	0	0
6	<input type="checkbox"/>	0	<input type="checkbox"/>	0	0	0	0	0	0	0
7	<input type="checkbox"/>	0	<input type="checkbox"/>	0	0	0	0	0	0	0
8	<input type="checkbox"/>	0	<input type="checkbox"/>	0	0	0	0	0	0	0
9	<input type="checkbox"/>	0	<input type="checkbox"/>	0	0	0	0	0	0	0
10	<input type="checkbox"/>	0	<input type="checkbox"/>	0	0	0	0	0	0	0

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

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

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