

# Dynamic Simple & Direct Shear System

## Related Standards

<b>British</b>	BS1377-7 : 1990; BS EN ISO 17892-10 : 2018
<b>American</b>	ASTM D3080-04, D3080-11, D6528-07, D6528-17
<b>Australian</b>	AS1289.6.6.2 : 1998

The VJ Tech Dynamic (Simple & Direct Shear System) has been designed to perform Dynamic Shear, Direct/Residual Shear or Direct Simple Shear tests.

The System incorporates 2 electro-mechanical actuators for Horizontal and Vertical movement, controlled from a Dual Axis Dynamic Servo Controller (DSC3000MM) via Ethernet or USB from a PC. The sample is contained within either a Direct Shear assembly or a Simple Shear assembly (interchangeable) as required.

Cyclic controlled tests can be carried out using Sine, Square, Triangular, Haversine, Rectangular, Saw Tooth or User Defined waveforms.

The System can be used for either:

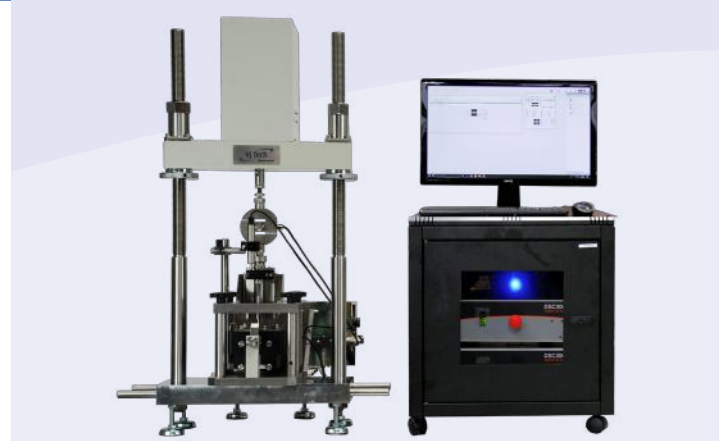
- a Direct/Residual Shear test
- a Simple Shear test with Active height control
- a Cyclic Simple Shear test with a cyclic horizontal force applied to the specimen with constant Vertical stress on the specimen
- a Cyclic Simple Shear test with a cyclic horizontal force applied to the specimen with constant specimen height
- a Cyclic Simple Shear test with cyclic horizontal displacement applied to the specimen with constant Vertical stress
- a Cyclic Simple Shear test with cyclic horizontal displacement applied to the specimen with constant specimen height

## Features

- Capable of Direct/Residual Shear tests using water carriage assembly supplied as standard
- Capable of normal & cyclic Simple Shear tests using the stainless steel/hard anodised assembly
- Electro-mechanical control using the DSC3000MM for Vertical and Horizontal loading
- Data logging via the DSC3000MM (up to 8 Input Channels per Axis)
- 10 kN Vertical and Horizontal Load Active Height Control
- Low friction retaining rings for specimen confinement when conducting simple shear tests
- Pore pressure measurement (optional)

## Specification

Horizontal & Vertical Dynamic Actuators	0.0001 - 10.000 Hz, +/- 10 kN
Horizontal Travel	Simple Shear (30 mm), Direct Shear (20 mm)
Vertical Travel	Simple Shear (20 mm), Direct Shear (20 mm)
Data Logging Rate	200 Points/Cycle or 500 Data Points/Sec
Sample Size (Simple Shear)	50 & 70 mm diameter with accessories and Confining Rings
Sample Size (Direct Shear)	60 & 100 mm Optional Diameter/Square Sample boxes, nominal 20 mm height.
Electrical Reqt.	90-240VAC, 50-60 Hz, 1ph
PC Interface	Ethernet or USB



*Dynamic (Cyclic) Simple and Direct Shear System*

## Ordering Information

### Main System Components

<b>VJT2840-10</b>	Dynamic Simple & Direct Shear Apparatus
<b>VJT-DSC3000MM</b>	Dual Axis Dynamic Servo Controller
<b>Transducers</b>	
<b>VJTS0362/DYN</b>	S-Beam Load Cell (10 kN)
<b>VJTP0362/DYN</b>	Pancake Load Cell (10 kN)
<b>VJT0271/DYN</b>	25 mm LSCT Displacement Transducer
<b>VJT0272/DYN</b>	50 mm LSCT Displacement Transducer

### Accessories\*

<b>VJT2840-70R</b>	DYN-SS 70 mm Ring Sample Set
<b>MIS0166D</b>	Single Channel Signal Conditioning Card (4 required normally, 5 with PWP)
<b>VJT-PC-RACK</b>	Rack Mounted PC (Optional)
<b>VJT-PSU0015</b>	Isolation Transformer 230VAC with Cables
<b>VJT-PSU0015-110</b>	Isolation Transformer 110VAC with Cables

\* Direct Shear Assembly Boxes are available for square or circular samples, from 60mm up to 100 mm. (see ShearSCAN Pro datasheet)

### Optional Accessory for Local Strain Measurement

<b>VJT2840-LVDI-KIT</b>	Kit comprising an Axial Strain Sensor (+/- 2.5 mm) and Shear Strain Sensor (+/- 10 mm) with mounting brackets and 2 DSC cards for processing (other travel lengths available)
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### Software

<b>VJT-csDYNSS</b>	Clisp Studio Dynamic Simple Shear Software
<b>VJT-csDSS</b>	Clisp Studio Direct Simple Shear Software

### Accessories for Direct Shear Testing\*

<b>VJTS0362/DYN</b>	S-Beam Load Cell (10 kN) (no MIS Card reqd.)
<b>VJT-csSHEAR</b>	Clisp Studio Direct/Residual Shear Software

### Clisp Studio – csDYNSS, csDSS & csSHEAR Software

- Live views, graphs & tables of logged & calculated data
- Easy data export to commercial spreadsheets

### Clisp Studio – csDYNSS specific

- Active Height Control
- Direct Simple Shear Tests (Static/Dynamic)
- Optional Pore Pressure measurement

### Clisp Studio – csSHEAR specific

- Direct/Residual Shear Tests
- Multi specimen tests