

Ring Shear Testing System

Related Standards: BS1377-7 : 1990; ASTM D6467-13;

The VJ Tech Ring Shear is a torsional Bromhead style shear device, which produces accurate and repeatable test results to determine the residual shear strength of cohesive soils, which is particularly important when assessing slope stability.

The RingSHEAR features a digital display and control panel and is normally computer controlled. It is supplied on a floor mounted frame for stability. A consolidation load is applied to the annular ring sample through a lever arm. Rotational shear displacement is applied to the sample by a microprocessor controlled stepper motor, through a fixed ratio gearbox, and measured either by a pair of Load Cells or a Pair of Load Rings (Junction Box required).

The rotational shearing action is applied continuously until a constant residual strength value is achieved. The advantages of a ring shear machine are that there is no change in the area of the cross section of the shear plane as the test proceeds, and the sample can be sheared through an uninterrupted displacement of any magnitude, making it very suitable for determining the residual strength of clays.

VJ Tech can also supply a Soil-Steel Interface Top Cap which can be fitted instead of the normal Top Cap, and used in conjunction with our dedicated Test Plan which is compatible with the ICP method for the Soil-Steel Interface test.

Features

- Digital display and control panel
- Lever loading actuation of normal stress via dead weights
- Partial or complete test automation using Clisp Studio Ringshear software

Clisp Studio csRingShear Software

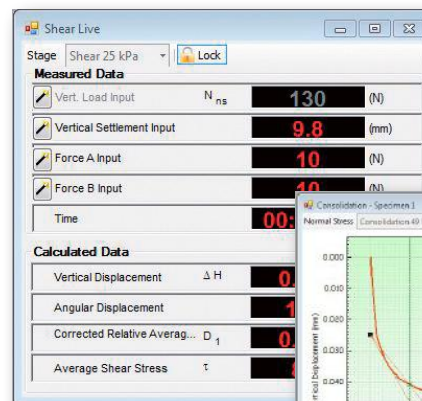
- Easy Test configuration using the built in wizard
- Transducer Configuration and Calibration
- Live views of transducer readings & calculated parameters
- Live graphs and tabulated data
- User configurable views tables and graphs
- Data export to Excel & test script export and import
- Data storage in an SQL database
- Configurable Test automation
- Live Test status and notification

Clisp Studio csHostAdv Software (Soil Steel Interface plan)

- Dedicated Test Plan specifically designed to carry out Soil-Steel Interface Testing to the ICP method.

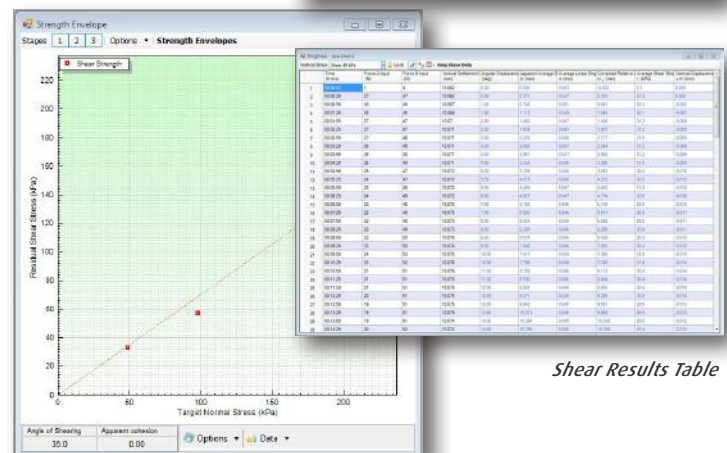
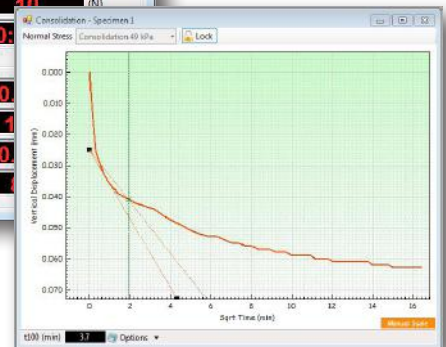


Ringshear Testing System (fitted with Load Cells)



Example Shear Live Data

*Consolidation Graph
T100 Calculation*



Shear Results Table

Shear Summary Graph

Ring Shear Testing System

Ordering Information

Main Ring Shear Frame & Items Common to Both Setups

VJT5600A	Ring Shear Apparatus (with Data Acquisition)
VJT-USB-RS232	USB - Dual RS232 Converter Interface
VJT0650-50W	Set of weights (50 kg)
VJT-csRING	Clisp Studio Ring Shear Software

Items Required for Load Cell System

VJT5600A-1kN	2 x 1 kN Load Cells with Adapters
VJT0270	10 mm LSCT Transducer

Items Required for Load Ring System

2 x VJT0201-MIT	1 kN Load Ring with Digital Dial Gauge
VJT0105-MIT	Digital Dial Gauge (Vertical Displacement)
VJT1010-4D	Junction Box

Ordering Information (cont.)

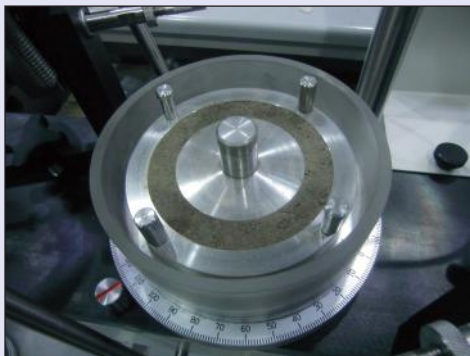
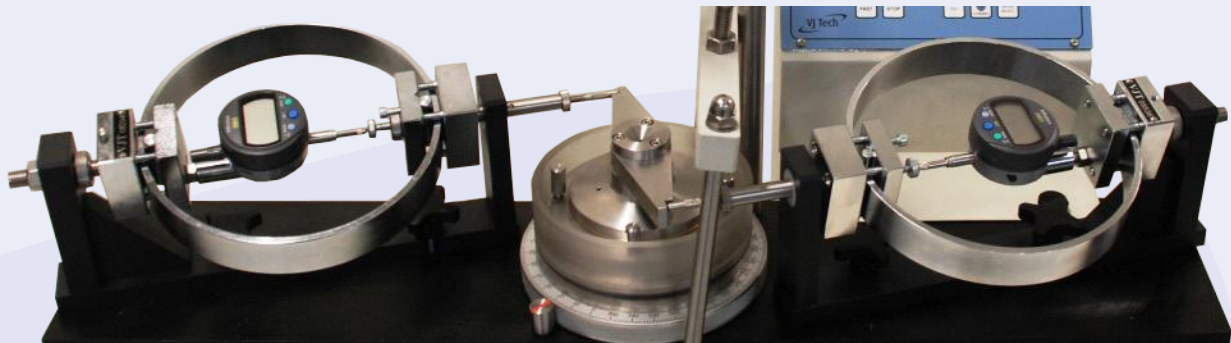
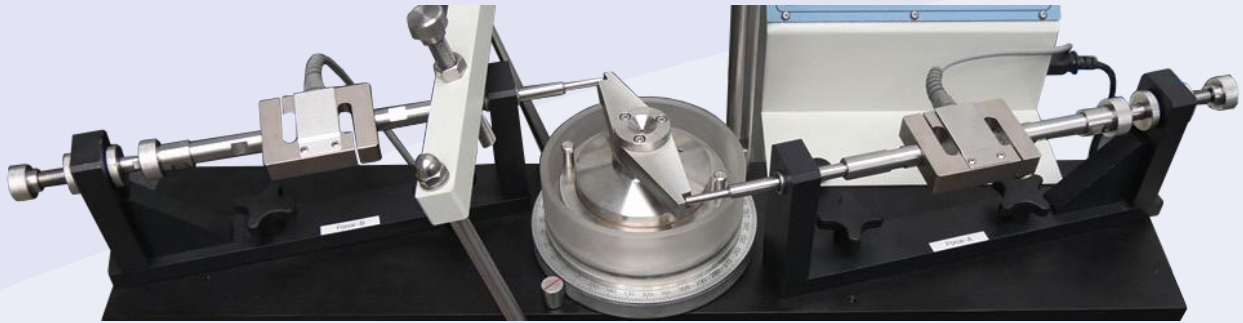
Optional Item for ICP Method Testing

VJT5600-INT	Ringshear Interface Top Cap Assembly (requires dedicated csHostAdv Soil-Steel Interface Test Plan)
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Specification

Sample Size	100 mm outside diameter x 70 mm inside diameter x 5 mm thick
Speed Range	0.0001 to 900 degrees/min
Maximum Shear Stress	750 kPa
Maximum Normal Stress	1000 kPa
Dimensions (W x D x H)	1335 mm x 380 mm x 1400 mm
Weight	105 kg
Electrical Requirement	90-240 Volts, 50/60Hz, single Phase

Ring Shear Setup (using Load Cells (Top), Load Rings) (Centre) and showing sample assembly (Bottom)



Measured Data	
Vert. Load Input	N_{ns} 130 (N)
Vertical Settlement Input	9.8 (mm)
Force A Input	10 (N)
Force B Input	10 (N)
Time	00:00:00 (h:m:s)
Calculated Data	
Vertical Displacement ΔH	0.000 (mm)
Angular Displacement	1.00 (deg)
Corrected Relative Averag... D_1	0.729 (mm)
Average Shear Stress τ	8.4 (kPa)