Temperature Controlled Triaxial System

Related Standards*

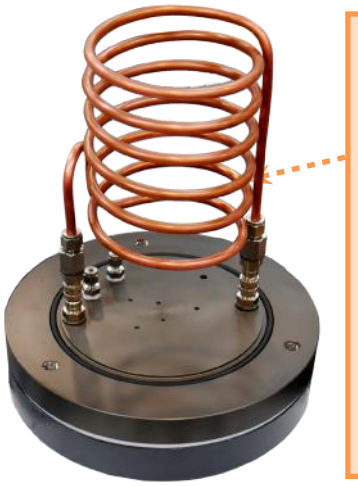
British	BS1377-7 & 8 (1990), BS EN ISO 17892-9-2018-CU-CD
American	ASTM D1883-07, D2850-03A, D4186-06, D4767-11, D6927-06, D2166/2166M-13
Australian	AS1289.6.4.1, 1289.6.4.2
Hong Kong	GEOSPEC 3

** Please refer to csTriax Datasheet for details*

The VJ Tech Pro Temperature Controlled Triaxial System is capable of providing fully automatic total and effective Temperature Controlled Triaxial testing including;

- Consolidated Drained (CD)
- Consolidated Undrained (CU)
- Unconsolidated Undrained (UU) &

The Temperature Control Unit (TCU) is operated remotely from the PC and enables Triaxial Testing from -20°C to +80°C.



Heating and Cooling:

- The coil surrounds the sample within the Temperature Controlled Triaxial Cell
- The sample is heated or cooled via the cell fluid through a copper coil
- Sample sizes up to 50 mm can be completely assembled, and the coil fitted afterwards

The Cell has a maximum pressure of 2000 kPa, is made of corrosion resistant materials and is fully insulated to protect against thermal loss.

The Pro Dual Automatic Pressure Controller is used to control and measure both Cell and Back Pressure & Volume. The Cell Pressure fluid is a 50/50 mix of antifreeze & de-aired water.

System Features

- Triaxial Testing from -20°C to +80°C
- Maximum Cell Pressure 2000 kPa
- USB or Ethernet Interface from TriSCAN Pro to PC and RS232 link from TCU to PC

Pro Instruments have;

- Up to 10 input channels between them (1 x digital & 9 x analogue)
- Integrated 7" Touchscreen Colour Display for standalone input if required
- On-board data logging with large data storage (up to 14 million records) on SD card (8 Gb)

Pro Temperature Controlled Triaxial System

Ordering Information

Main System Components

VJT5110-P	TriSCAN Pro 100 kN Advanced Load Frame
VJT-TEMPCONTROL	Temperature Control Unit: Range -50°C to +200°C ; (200-230VAC/50-60Hz)
VJT-TEMPCONTROL-110	Temperature Control Unit: Range -50°C to +200°C ; (110V/60 Hz)
VJT2267D-P	Dual Automatic Pressure Controller (up to 3500 kPa/250cc per Channel)
VJT0549-TEMP	Temperature Controlled Triaxial Cell: - Up to 50 mm dia sample size - Temperature Range -20°C to +80°C - Maximum cell Pressure up to 2000 kPa

Transducers

VJT0271	LSCT Displacement Transducer (25 mm)
VJTS0366	100 kN S-Beam Load Cell
VJT0260-G	20 bar Pressure transducer (2 MPa)

Accessories

VJT0549-TEMP-38	Top Cap and Base Pedestal Set for 38mm dia samples [TEMP]
VJT0549-TEMP-50	Top Cap and Base Pedestal Set for 50mm dia samples [TEMP]
VJT0280	De-airing block with valve for pressure transducer
VJT0280-SOL	Automatic Solenoid Valve (optional)
VJT0281Q-TEMP	Adapter set for 100 kN S-Beam Load Cell
VJT-TEMP-FLUID	Bath fluid for System
VJT-TEMP-GLYCOL	Glycol Mix Fluid for use with Environmental Chamber
VJT0505T	Installation Kit for Triaxial System

Software

VJT-csTRIAX	Clisp Studio Triaxial Software

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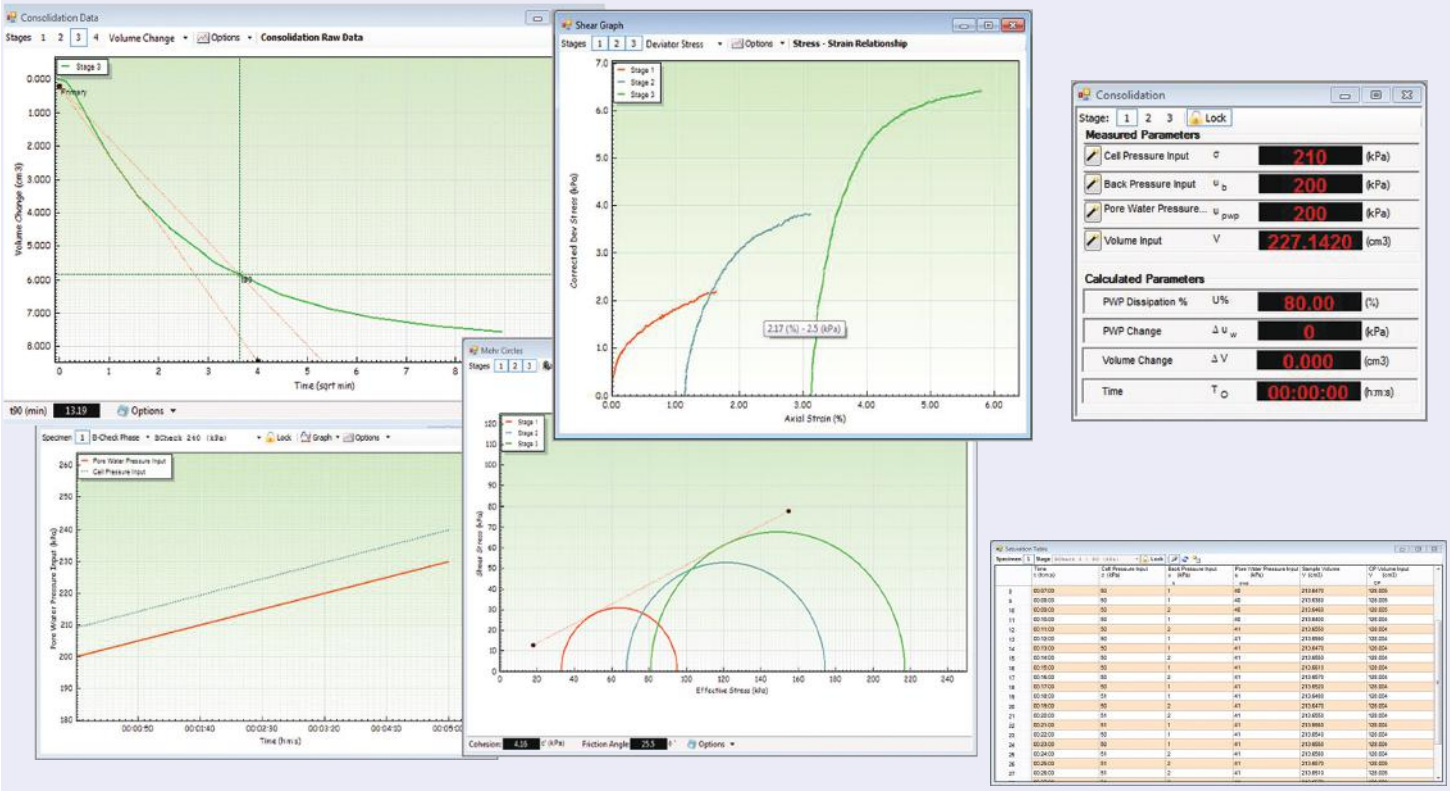
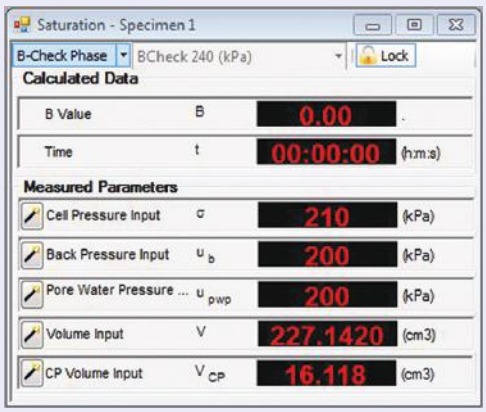
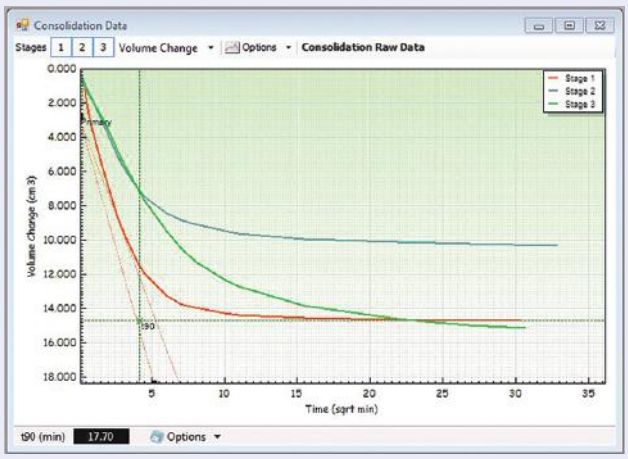
Clisp Studio csTriax - Triaxial Testing Software

VJ Tech's csTriax module is widely regarded as the most user friendly and comprehensive Geotechnical software package for Triaxial testing currently in use. It has been developed to make it easy for the User to set-up, control and monitor all forms of standard Triaxial Testing in soil testing laboratories and collate and output the results in industry standard or User defined format.







Configurable Features

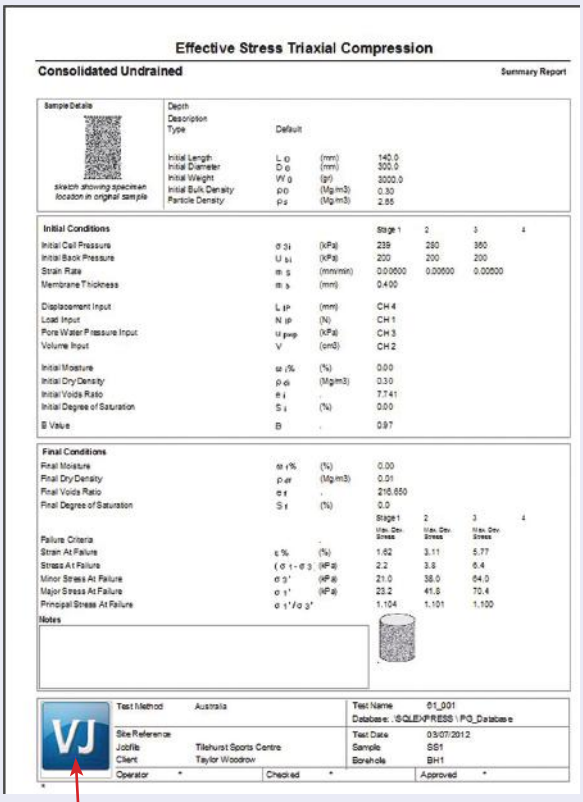
- Each multi-stage test can handle up to 4 separate stages for a single specimen
- Up to 4 specimens can be handled within a multi-specimen test
- Any number or combination of multi-stage or multi-specimen tests can be run at any one time
- Easy test setup using wizard style Assistant
- Easy instrument and equipment setup and calibration
- Step or Ramp method Saturation
- Isotropic Consolidation & Optional Anisotropic Consolidation
- Shearing to failure in compression using maximum deviator stress or maximum stress ratio
- Live view of sensor readings and status
- Live Data Views, Graphs and Tables
- User configurable views, graphs and tables
- Standard predefined presentation reports
- Results Data export to Excel for external manipulation
- Export of entire Test script

Clisp Studio csTriax provideS a wide variety of Industry Standard reports (in the relevant language) for the different Triaxial Stages that would be of interest to a geotechnical engineer or end User covering the Saturation, Consolidation and Shear stages of your Test.

Clisp Studio has the ability to export the entire Test to either MS Excel for further data manipulation or to export the entire Test to a script file, which can then be imported on another PC when creating a new Test if desired. This enables Tests from the current or older versions of Clisp Studio to be cloned or even rerun if required.

Standard predefined presentation reports

- Summary Report
- Saturation: B-Value vs Cell Pressure
- Saturation: B-Value vs Pore Pressure
- Consolidation: Volume Change
- Consolidation: Pore Pressure
- Shear: Stress vs Strain
- Shear: Mohr Circles
- Shear: Stress Path



The following table summarises the numerous combinations of Triaxial test types that are covered together with the applicable International Geotechnical Standards. Fixed top caps are required for Extension tests.

Applicable Standard	Test Sub-Type	Unconfined Compression	Unconsolidated Undrained	Undrained with PwP	Consolidated Undrained	Consolidated Drained
BS1377-7	Total Stress	Y	Y [2, 3]			
BS1377-8	Effective Stress			Y [2, 3, 4]	Y [2, 3, 4]	Y [2, 3, 4]
BS EN ISO 17892-7	Total Stress	Y				
BS EN ISO 17892-8	Total Stress		Y [2, 4]			
BS EN ISO 17892-9	Effective Stress				Y [1, 2, 4]	Y [1, 2, 4]
ASTM D2166	Total Stress	Y				
ASTM D2850-03A	Total Stress		Y [2]			
ASTM D2850-15	Total Stress		Y [2, 4]			
ASTM D4767-95	Effective Stress				Y [2, 3, 4]	
ASTM D4767-11	Effective Stress				1,, 2, 4	
ASTM D7181-20	Effective Stress					Y [1, 2, 4]
AS 1289.6.4.1 : 1998	Total Stress		Y [3]			
AS 1289.6.4.1 : 2016	Total Stress		Y [2, 4]			
AS 1289.6.4.2 : 1998	Effective Stress				Y [2, 3, 4]	
AS 1289.6.4.2 : 2016	Effective Stress				Y [2, 4]	
T171 Modified Texas Triaxial Compression	Total Stress		Y [2, 5]			
GEOSPEC 3	Effective Stress			Y [2, 3, 4]	Y	Y [2, 3, 4]

1 - Anisotropic and Ko consolidation is allowed - Requires a submersible load cell.
2 - Single stage/Multispecimen tests are supported
3 - Multistage/Single specimen tests are supported
4 - Temperature-controlled tests are supported - additional hardware is required
5 - Does not support the TriSCAN 10 load frame

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