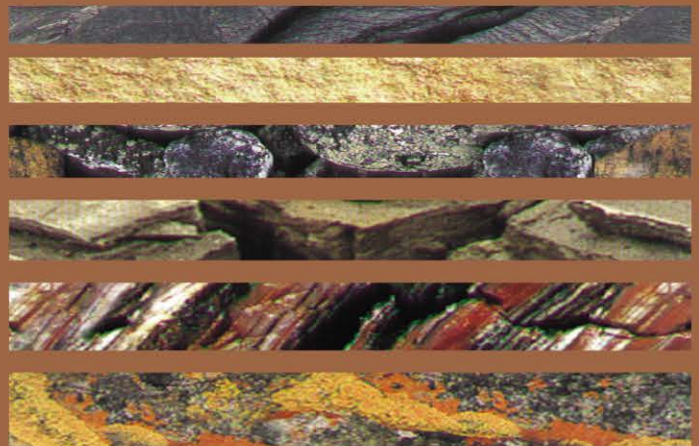


World Leaders



*in | Software Based
Geotechnical
Testing Systems*



for | Laboratory and Field

Upgrading Existing Triaxial Testing Systems

UPGRADE OPTIONS FOR EXISTING TRIAXIAL SYSTEM

(Includes upgrades of systems not manufactured by GDS)

Case Study 1: Manual Control and Automated Logging to a Fully Automated Testing System

A common setup of a basic triaxial system found in a laboratory has manual control and automated data logging. Data logging is performed using a logger which accepts an analogue voltage from transducers such as load cells, displacement transducers and pressure transducers. Control is limited to constant rate of strain only, and is initiated by the user setting the speed and direction. No automatic safety stops are in operation, and as such there is a reliance on the operator to stop the system either at the end of a test stage or for safety reasons.

UPGRADE TO AUTOMATED LOGGING AND CONTROL

Upgrade your existing system to a GDS Triaxial Automated System (GDSTAS) with the addition of the following components:-

- ◆ 2 x GDS pressure/volume controllers for application of cell and back pressure and measurement of back volume,
- ◆ GDSLAB control and data acquisition software and a PC.

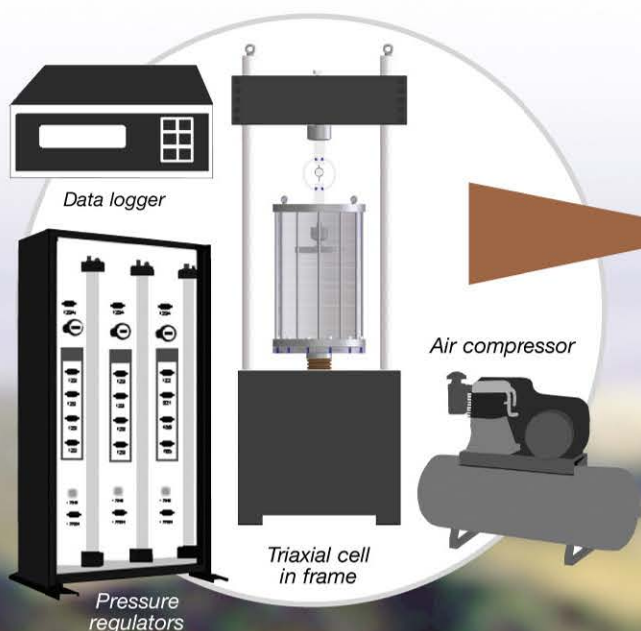
Assuming the existing load frame and the data logger are compatible with GDSLAB Software (which most load frames and many loggers are), then you can enjoy the benefits of automated control and logging:-

FULLY AUTOMATED CONTROL AND DATA LOGGING

- ◆ Tests can be started and stopped automatically, either on a particular user defined value (max strain or max deviator stress for example), or for safety reasons (load limits violated),
- ◆ Data can be obtained at user defined intervals,
- ◆ Test stages can be pre-programmed such that multi stage tests can continue 24 hours a day.

TEST TYPES

- ◆ Tests can be performed beyond basic UU, CU and CD tests. Complex stress paths, anisotropic loading and even slow cyclic tests can now be performed.



To check if your load frame and data logger are compatible with GDSLAB please visit our website.

Case Study 2: Manual Control and Manual Logging to a Fully Automated Testing System

The most basic triaxial system set-up found in a laboratory consists of both manual control and manual data logging. Control is limited to constant rate of strain only, and is initiated by the user setting the speed and direction. No automatic safety stops are in operation, and as such there is a reliance on the operator to stop the system. Data is manually logged by the operator at set time intervals by reading dial gauges measuring load or displacement and bourdon gauges measuring pressure. The data is then transferred manually to a PC.

UPGRADE TO AUTOMATED LOGGING AND CONTROL

Upgrade your existing system to a GDS Triaxial Automated System (GDSTAS) with the addition of the following components:-

- ◆ 2 x GDS pressure/volume controllers for application of cell and back pressure and measurement of back volume,
- ◆ GDS 16 bit data logger,

- ◆ GDSLAB control and data acquisition software and a PC,
- ◆ Transducer set consisting of a load cell (either external S-beam or internal submersible type), displacement transducer and pore pressure transducer.

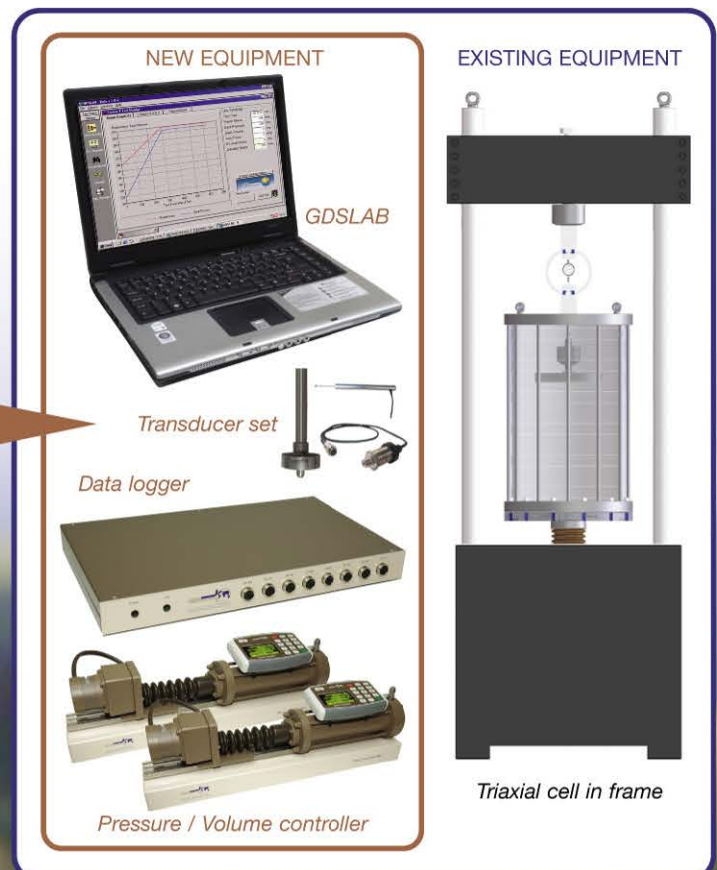
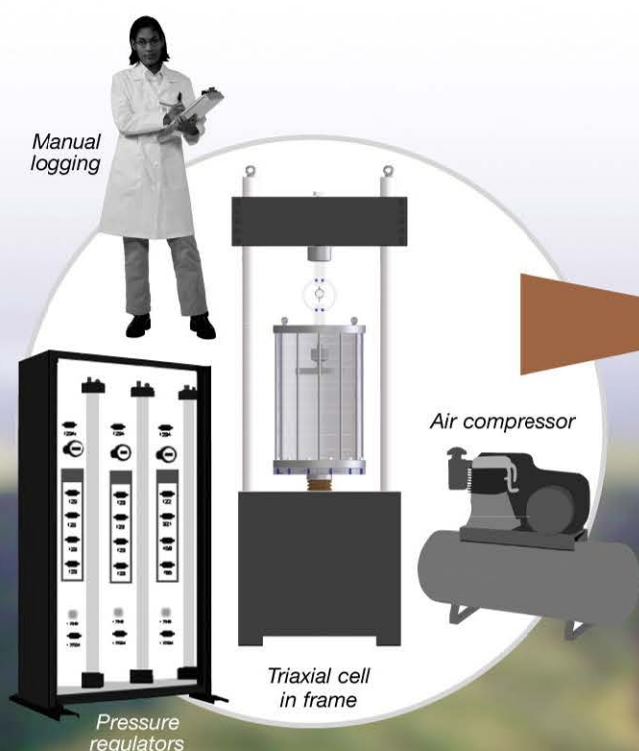
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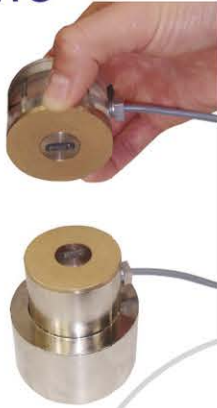
You can keep existing proving ring and instrument with digital gauges as an option.

Keeping your existing Triaxial Cell...

UPGRADE TO BENDER ELEMENTS

Required Products:

- ◆ Bender element top-cap and pedestal,*
- ◆ S-wave source/P-wave receive element,
- ◆ P-wave source/S-wave receive element,
- ◆ Bender element master control box (USB) and GDSBES software,
- ◆ A method of getting the cables out of the cell (i.e. GDS Access Ring)*



UPGRADE TO LVDT (local/small strain measurement)

Required Products:

- ◆ LVDT local strain set (2 axial, 1 radial),
- ◆ A method of getting the cables out of the cell (i.e. GDS Access Ring)*



UPGRADE TO HALL EFFECTS (local/small strain measurement)

Required Products:

- ◆ Hall Effect local strain set (2 axial, 1 radial),
- ◆ A method of getting the cables out of the cell (i.e. GDS Access Ring)*



UPGRADE TO UNSATURATED SOIL TESTING

Method A

- ◆ GDS Air pressure controller,
- ◆ Pedestal with high air entry disk installed.*

Method B

- ◆ HKUST unsat pedestal and inner cell,
- ◆ Low range wet-wet transducer for measurement of volume change,
- ◆ Pneumatic regulator for pore air pressure control.



**At GDS we routinely manufacture pedestals and access rings for triaxial cells from manufacturers other than GDS.*

GDS Instruments are World Leaders in Software based Geotechnical Testing Systems for Laboratory & Field

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