# CASE STUDY: UPGRADE OPTIONS FOR EXISTING TRIAXIAL SYSTEM

## 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.

Assuming the existing load frame and the data logger are compatible with GDSLAB Software (which most load frames 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.



Manual logging

Pressure Regulators

Triaxial cell in frame

Air compressor

NEW EQUIPMENT

EXISTING EQUIPMENT

GDSLAB

Transducer set

Data logger

Pressure / Volume controller

Triaxial cell in frame