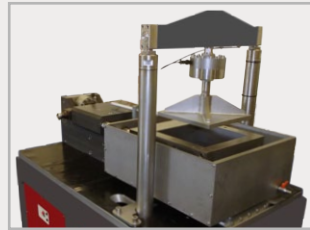




Rock sample set



Soil sample set

GDS Large Automated Direct Shear System (300mm) GDSLADS)

Overview: The GDS Large Automated Direct Shear System (GDSLADS), is a state of the art system that extends the boundaries of traditional shear testing. The GDSLADS automates the loading procedures as well as data acquisition and presentation. Normal and Shear forces are applied by GDS force actuators so they are controllable in terms of stresses and strains in both directions.

The system is floor mounted and self-contained. No pneumatic/hydraulic powerpacks are required, only mains electricity. Tests can be controlled from either the keypads and displays associated with the force actuators or via GDSLAB software.

Key Features:

Benefits to the User:

Electro-mechanical actuation:	Only mains electricity required (no hydraulics or pneumatics) therefore reducing the space required and providing a more accurate system.
Electro-mechanical & normal force application:	No hanging weights, hydraulics or pneumatics.
Automated data logging (multiple stage tests):	Testing can run unattended over night and at weekends to increase throughput and reduce staff costs. Multiple stage tests can be pre-programmed and saved in GDSLAB.
Cylindrical or square samples can be supplied, as well as multiple sample boxes:	GDSLADS has the flexibility to test different shaped samples allowing the user greater flexibility of use, along with increased throughput of tests via multiple sample boxes.
Built in loadcells (Standard 100kN, other ranges can be provided):	Interchangeable loadcells allow lower range loadcells to be used for more accurate low stress testing.
Stiff construction:	To reduce equipment compliance and increase accuracy.
After setting of shear gap no further user intervention is required:	Automated test control and a greater throughput of samples.

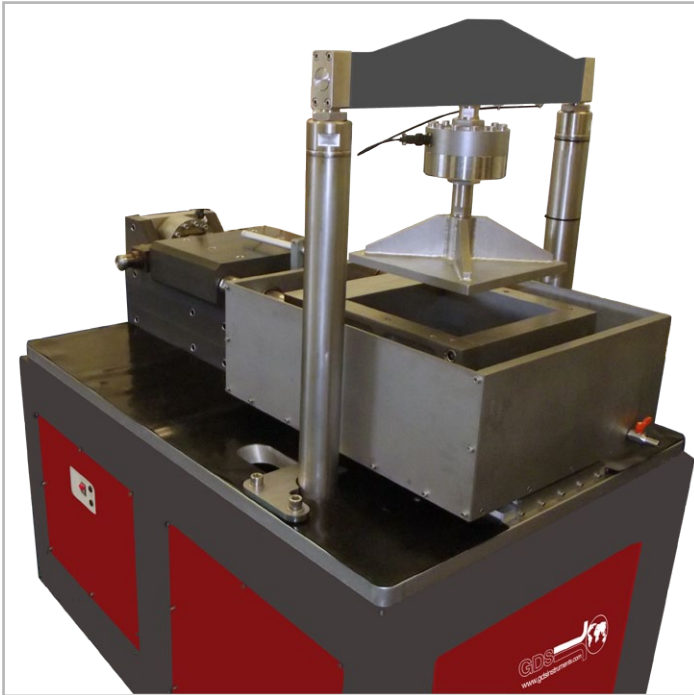
Tests that can be Performed:

Different sample sets can be used to achieve the following types of testing in one system:

- Standard direct shear up to 300mm x 300mm.
- Geomembrane shear test.
- Rock mechanics sample set.

Technical Specification:

Actuators (kN):	100 Shear force actuator 100 Normal force actuator
Data Acquisition:	16-bit data acquisition
Load Range (kN):	100
Sample Sizes (mm):	up to 300 x 300 x 150
Weight Approx (kg):	1500
Dimensions (mm):	1700 x 1460 x 950



Soil Sample Set & Water Bath:

Large Direct Shear Apparatus Sample Set (300mm Square x 150mm height) Includes:

- Stainless Steel Upper shear plate (300 x 300 x 75mm)
- Stainless Steel Lower shear plate (300 x 300 x 75mm)
- Stainless Steel Upper & Lower porous plate
- Stainless Steel Top plate

Water Bath & Slide for Soil Testing Contains:

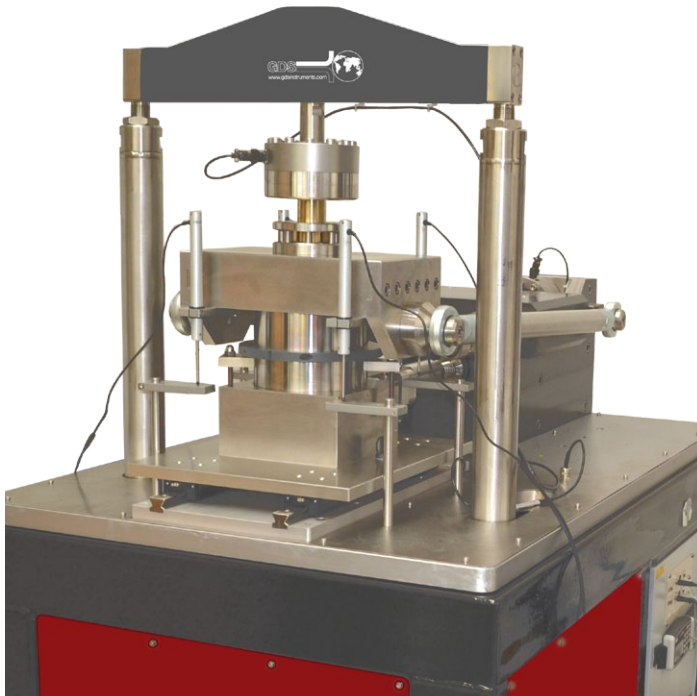
- Water Bath for Soil samples up to 305mm Diameter or Square
- Water bath mounting assembly and linear slides. *(Not required for Rock Testing set)*

Rock Sample Set

Large Direct Shear Apparatus Specimen Set For use with Rock (150 mm)

Includes:

- Upper specimen holding ring (150 mm diameter x 75 mm deep)
- Lower specimen holding ring (150 mm diameter x 75 mm deep)
- Top cap
- Connections to shear box assembly.
- Allows for setting of rock specimens in plaster within shear box assembly.



Tests that can be Performed:

Some typical applications of tests available in the GDSLADS include one-dimensional specimen consolidation, shearing under constant normal force, shearing under a constant volume condition, and shearing of rock specimens.

GDSLAB Control Software

GDSLAB is the control and data acquisition software for geotechnical laboratory applications. GDSLAB starts with a core application known as the kernel. The GDSLAB kernel allows for data acquisition from your hardware, but no test control. Simply add the appropriate module or modules to complete the test suite functionality you require. GDSLAB is compatible with all existing GDS equipment and furthermore key hardware from other manufacturers.

GDSLAB has the ability to be configured to your hardware of choice, no matter how unique the arrangement. A text file (*.ini) or initialisation file is created that describes the hardware connectivity to the PC. The hardware layout is available in graphical format via the GDSLAB 'object display'. This makes setting up the devices and checking the connectivity extremely simple.

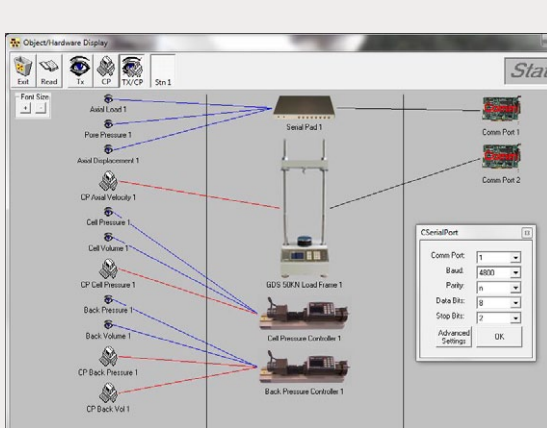


Fig 1. Show a typical set-up screen in GDSLAB

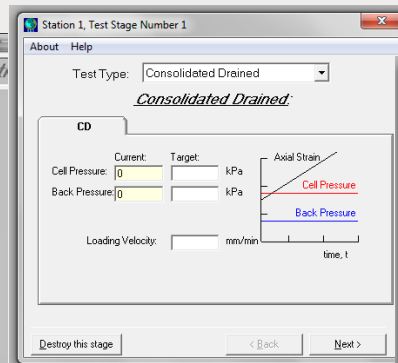


Fig 2. Show a typical station test stage set-up in GDSLAB

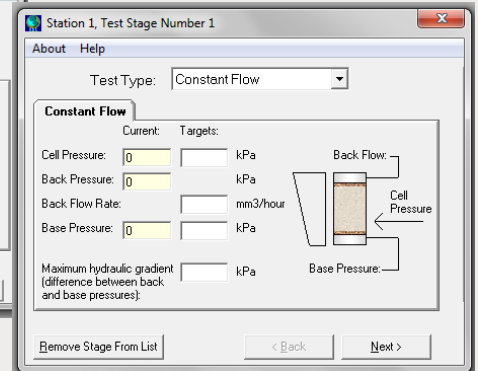


Fig 3. Show a typical station test stage set-up in GDSLAB

Required Operating System: Windows 7 SP1 or higher (We strongly recommend that Windows is fully up to date and running the latest Service Pack/Version available). Recommended PC Specification: 2GHz processor, 4GB Ram, 64Bit Operating System and USB connectivity. Note: GDS software can run on lower spec PC's however; performance and processing of data may be affected.

Optional GDSLAB software modules for GDSLADS machines

Standard Shear Testing

- Stepped loading
- Constant loading
- Constant velocity shearing

Advanced Shear testing

- Independent control of Primary Control Parameters
- Constant
- Ramp
- Slow speed cyclic

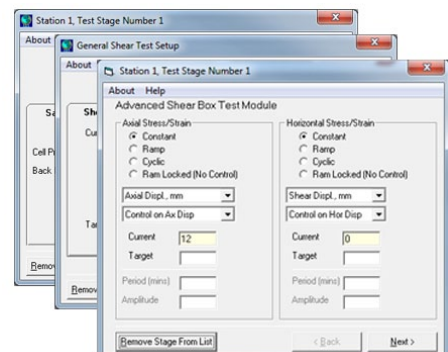


Fig 4. Show a selection of screenshots from the GDSLAB test stages.