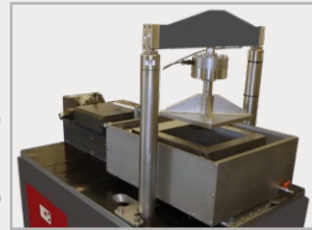


## GDS Large Automated Direct Shear System (300mm) GDSLADS)



**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.

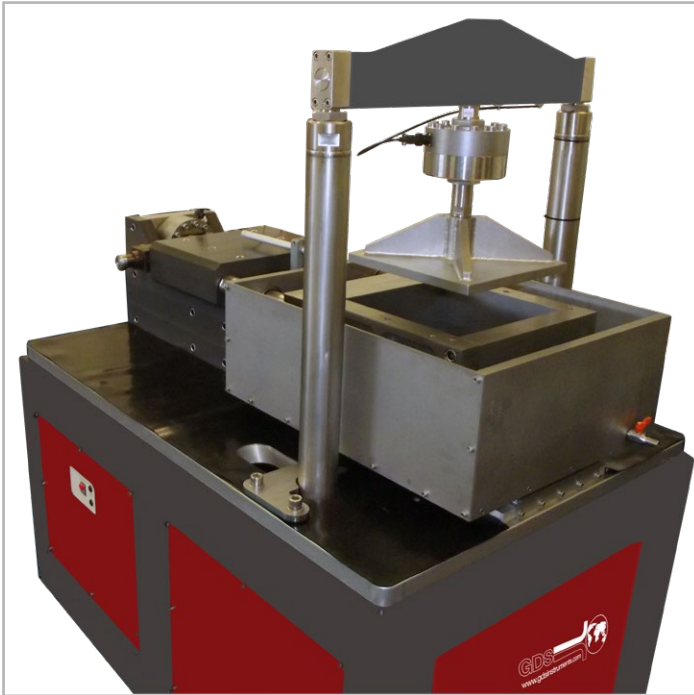
### Tests that can be Performed:

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:

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

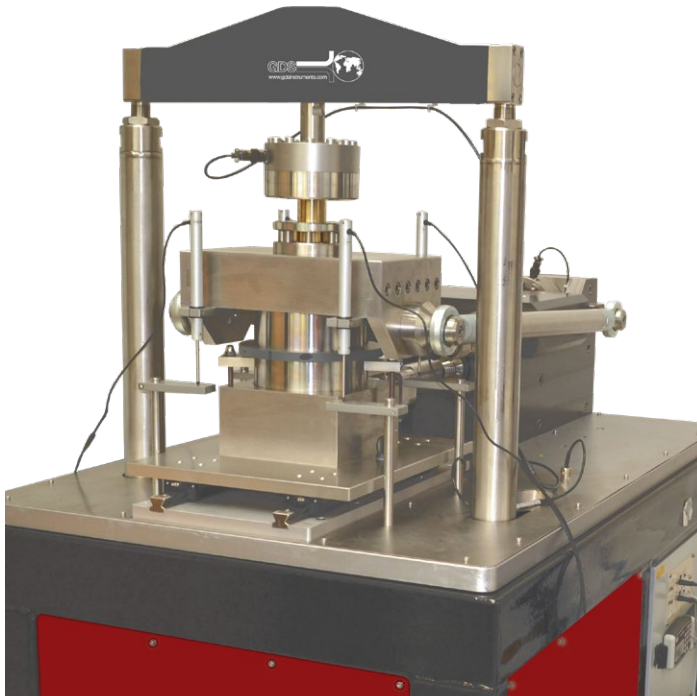
- Water Bath for Soil samples up to 305mm Diameter or Square
- Water bath mounting assembly and linear slides. *(Not required for Rock Testing set)*

### 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.

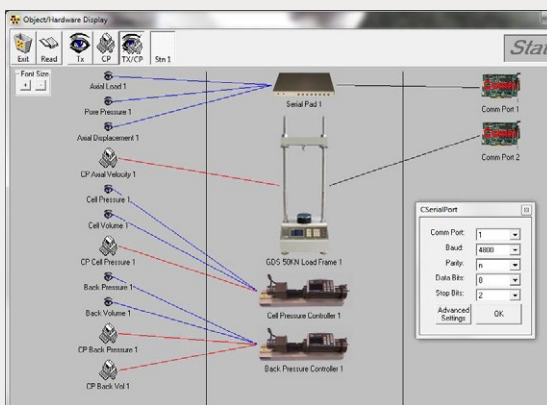


Fig 1. Show a typical set-up screen in GDSLAB

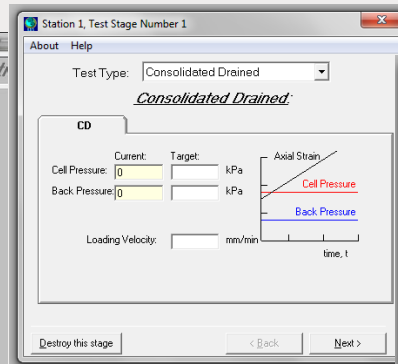


Fig 2. Show a typical station test stage set-up in GDSLAB

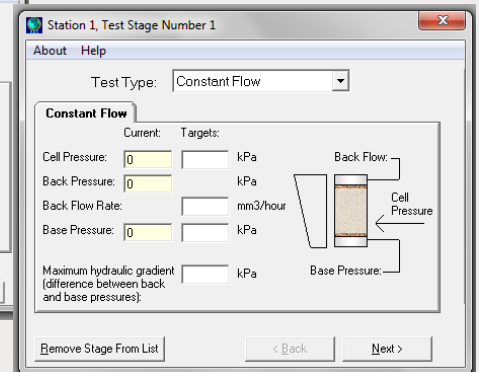


Fig 3. Show a typical station test stage set-up in GDSLAB

*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

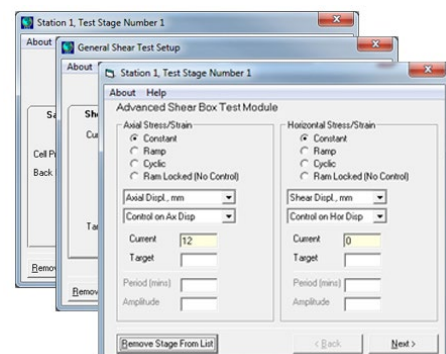


Fig 4. Show a selection of screenshots from the GDSLAB test stages.

## Why Buy GDS?

### GDS have supplied equipment to over 86% of the world's top 50 Universities:

GDS have supplied equipment to over 86% of the world's top 50 Universities who specialise in Civil & Structural Engineering, according to the "QS World University Ranking 2020" report.

GDS also work with many commercial laboratories including BGC Canada, Fugro, GEO, Geolabs, Geoteko, Golder Associates, Inpijn Blokpoel, Klohn Crippen, MEG Consulting, Multiconsult, Statens Vegvesen, NGI, Ramboll, Russell Geotechnical Innovations Ltd, SA Geolabs, SGS, Wiertsema and Partners to name a few.

**TOP  
50**

### Would you recommend GDS equipment to your colleague, friend or associate?

**100% of our customers answered "YES"**

Results from our post-delivery survey asked customers for feedback on their delivery, installation (if applicable), supporting documentation, apparatus and overall satisfaction with GDS. The survey ran for two years.



### Made in the UK:

All GDS products are designed, manufactured and assembled in the UK at our offices in Hook. All products are quality assured before they are dispatched.

GDS are an ISO9001:2015 accredited company. The scope of this certificate applies to the approved quality administration systems relating to the "Manufacture of Laboratory and Field Testing Equipment".

**40 YEARS OF  
BRITISH  
INNOVATION** 

### Extended Warranties:

All GDS apparatus are covered by a 12 month manufacturers warranty. In addition to the standard warranty, GDS offer comprehensive extended warranties for 12, 24 and 36 months, for peace of mind against any repairs in the future. The extended warranties can be purchased at any time during the first 12 months of ownership.



### GDS Training & Installation:

All installations & training are carried out by qualified engineers. A GDS engineer is assigned to each order throughout the sales process. They will quality assure the apparatus prior to shipping, if installation has been purchased, install the apparatus on the customers site & provide the training.



### Technical Support:

GDS understand the need for ongoing after sales support, so much so that they have their own dedicated customer support centre. Alongside their support centre GDS use a variety of additional support methods including remote PC support, product helpsheets, video tutorials, email and telephone support.

