



Dynamic Back Pressure Shearbox (DYNBPS)

Overview: The Dynamic Back Pressured Shearbox (DYNBPS) is used for static and dynamic direct shear testing on soil specimens with control of sample pore pressures. The control of pore pressure during direct shear testing allows real-world situations to be modelled in the laboratory.

This dynamic version of the device allows a landslide to be modelled as it quickly gains velocity after the initial moment of failure. Cyclic direct shear testing is also possible while still controlling and measuring pore pressure.

Key Features:

Benefits to the User:

Electro-mechanical actuators:	Designed for long life and highly accurate position control. Unlike pneumatic actuators this type of actuator is suitable for carrying out small strain testing, long term creep tests and dynamic tests up to 5Hz.
Realistic modelling:	The DYNBPS provides a realistic model of many real-world cyclic and seismic geotechnical problems, such as slope stability and earthquake loading.
Interchangeable internal load cells:	For increasing accuracy and resolution on soft soils.
Closed-loop control:	For shear force/displacement and normal force/displacement.
Shear gap:	Manually set-able from outside the pressure vessel whilst under pressure.
Balanced rams:	Allows cost effective static pressure controllers to be used for back pressure with minimal pressure fluctuations during dynamic tests.

Tests that can be Performed:

Back pressured static direct shear tests, back pressured cyclic shear load tests and back pressured cyclic shear displacement tests.

Upgrade Options:

Bender elements and small strain transducers.

Technical Specification:

Axial Force Resolution:	16bit (i.e. <0.4N for 10kN load cell, <1.5N for 40kN load cell)
Computer Interface:	USB
Data Acquisition:	16bit
Dimensions (mm):	1200(H) x 500(L) x 770(W)
Load Range (kN):	Normal force 25, Shear force 10
Operating Frequency (Hz):	5
Power:	3 phase
Pressure Range (MPa):	1
Resolution of Measurement and Control (MHz):	10
Sample Sizes (mm):	Square: 50, 75 (custom sizes available on request) Sample height: 20-40
Weight Approx (kg):	160

Tests that can be Performed:

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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.

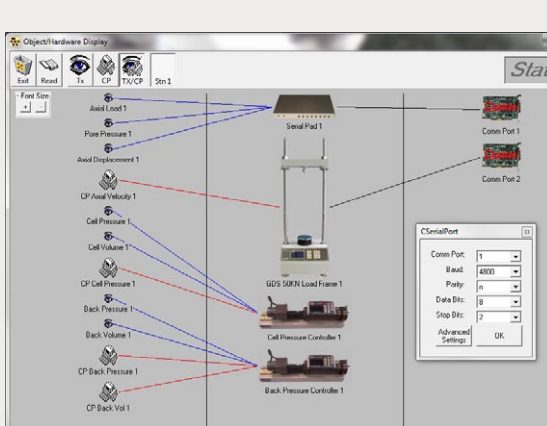


Fig. 1 Show a typical set-up screen in GDSLAB

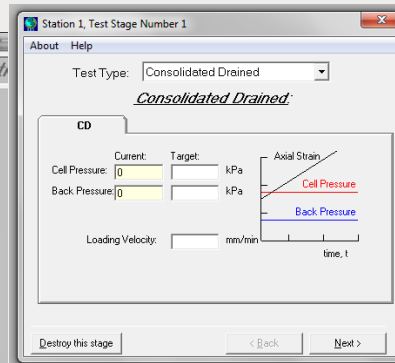


Fig. 2 Show a typical test stage in GDSLAB

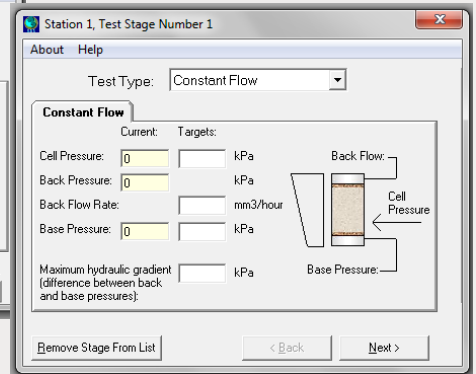


Fig. 3 Show a typical test stage in GDSLAB

Operating System: Windows XP SP3 or higher (We recommend that whichever version of Windows you are running, that it is up to date with the latest Service Pack). PC Spec Hardware: 1GHz (minimum) / 1GB Ram (minimum): CD Rom.

Optional GDSLAB software modules for DYNBPS 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

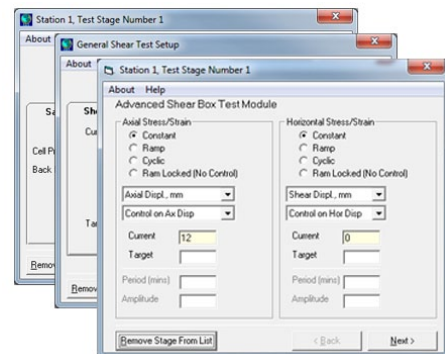


Fig 4. Show a selection of screenshots from the GDSLAB Reports software.

Why Buy GDS?

Technical Support:

GDS provide comprehensive on-site product training and installation. GDS understand the need for ongoing after sales support, so much so that they have their own dedicated customer support centre. The support centre allows the user to log queries, download helpsheets and get the latest information on product updates. The site is fully searchable and provides a great resource to customers.

Alongside their support centre GDS use a variety of additional support methods including...

- **Remote PC Support:** Remote PC support works by GDS providing a secure link to a customers PC, thereby allowing GDS to take control. Once in control of the PC, GDS can help with any problems associated to software, installation, testing etc.
- **Product Helpsheets:** The helpsheets are the GDS FAQ documents. They cover a multitude of hardware and software questions and are free to download from our online support centre.
- **YouTube Channel:** GDS YouTube channel holds both software and hardware video's aimed to give you better understanding of how the products work.
- **Email & Telephone Support:** If you prefer you can email requests to support@gdsinstruments.com where they will be automatically added to the support system and then allocated to a support engineer.

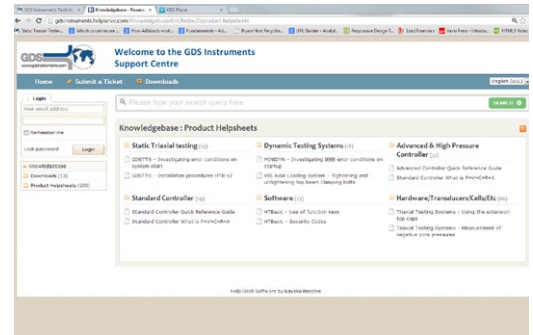


Fig. 5 GDS online customer support centre.

GDS Awarded Queens Award for Enterprise in International Trade:

GDS have been presented with the most prestigious corporate award made in the UK – The Queen's Award for Enterprise in the International Trade category. GDS are delighted to have won the award which has been given to GDS for increasing overseas trade by 190% over six years of continuous sustained growth, and for selling over 85% of their production overseas. GDS have achieved this through a combination of continuous product development, understanding customer's requirements and a company wide dedication to customer support.



THE QUEEN'S AWARDS
FOR ENTERPRISE:
INTERNATIONAL TRADE

Made in the UK:

All GDS products are designed, manufactured and assembled in the UK at our offices in Hook. Quality assurance is taken of all products before they are dispatched.



GDS are an ISO9001:2000 accredited company. The scope of this certificate applies to the approved quality administration systems relating to the "Manufacture of Laboratory and Field Testing Equipment".



Due to continued development, specifications may change without notice. See the GDS website for the full product range & to visit our Geotechnical Learning Zone.