



Actuator mounted onto cell (Covers removed)



Control Box

Force Actuator (GDSFA)

The GDS Force Actuator is the loading frame/compression machine you would expect from GDS - feedback control and continuous displays of axial load and platen displacement and USB computer interface. Force is measured by a load cell which can either be fixed to the end of the thrust cylinder or to some other part of the apparatus under test.

These outstanding features coupled with GDS software, GDS digital pressure controllers, and the GDS Data Acquisition System give you unlimited possibilities in conventional and advanced PC controlled testing of materials.

Key Features:

Benefits to the User:

User Interface: Smart Keypad:	The easy to use smart keypad is used for entering target values of axial load, displacement, ramp and cycle parameters.
Load control by closed loop feedback:	Normally, the feedback to the main control circuit board comes from the internal pressure transducer. However, this input could come from a different source, such as a remote transducer
May be used stand-alone or under computer control:	Compatible with the well-developed GDSLAB software which provides a consistent interface across all of your geotechnical laboratory testing.
Optional Mounting Plate:	The GDS Force actuator can be supplied with a mounting plate, to allow the user to safely mount the device next to the apparatus. Dimension of the mounting plate can be found in the diagram on the next page.

Technical Specification:

Load Range (kN):	10, 25, 50 (Custom ranges available upon request)
Load Resolution:	+/- 1 in 10,000
Load Cell Accuracy:	Non-linearity +/- 0.03%, hysteresis and non repeatability +/- 0.05%
Displacement Range:	100mm
Displacement Resolution:	0.1micrometre
Displacement Accuracy:	0.05% over 20mm
Max Platen Displacement Speeds:	Target: 3.75mm/min, Ramp: 1.88mm/min, Up/Down: 15mm/min, Ramp Target Load Control: 1.0mm/min. (No minimum displacement rate)
Frame Stiffness:	Greater than 50kN/mm
Control Panel:	Smart Keypad
Computer Interface:	USB
Dimensions:	Actuator 105mm x 150mm x 385mm. Control Box: 100mm x 355mm x 40mm (Excluding Smart Keypad)
Weight Approx (kg):	40
Power:	92-265v, A.C. 48-44Hz, 65w maximum, single phase three wire earthed supply, 2A fuse x 2

How does it work?

The GDSFA comprises a stepper motor and gearbox which drives a ball screw. Rotation of the screw displaces a ball nut which is captive in a thrust cylinder that slides on a linear guide. The complete mechanism is rigidly fixed to a base plate. The base plate is attached to the experimental rig and the thrust is applied by the thrust cylinder.

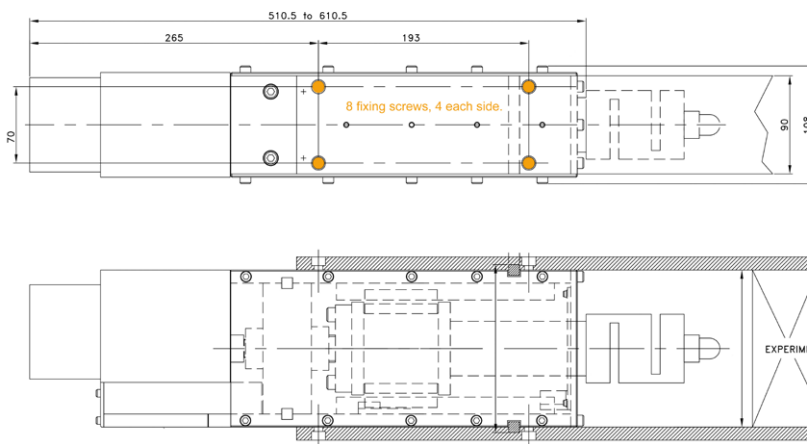
Force is measured by a load cell which can either be fixed to the end of the thrust cylinder or to some other part of the apparatus under test. The motor and gearbox is fixed to the base plate. Displacement is gauged by counting the steps to the stepper motor. The base plate is located into the experimental rig using a keyway and is bolted in place.

General Applications

Through the Smart Keypad or through the computer interface you can enter linear time ramps of load or displacement. These RAMP functions can also be used to cycle load or displacement in a range of low frequency waveforms. The smart keypad allows a few options (triangular, square, sine). GDSLAB will do a sinewave as one test setup. Other options will have to be self programmed. Under the control of your PC almost any test can be carried out. GDS control and data acquisition and reporting software is available for a wide variety of applications.

Why buy GDSFA?

- Simple to use keypad interface.
- Load control by direct feedback as well as the more standard displacement control functions.
- May be used stand-alone or under computer control.
- Compatible with the well-developed GDSLAB software which provides a consistent interface across all of your geotechnical laboratory testing.
- GDS worldwide technical support for peace of mind.



Mounting Plate (Optional)

GDS can supply a mounting plate if required, to allow the user to safely mount the device next to the apparatus. Dimension of the mounting plate can be found in the diagram to the left.

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.

