

# 50 GDS Helpsheet



*World Leaders in Computer Controlled Testing  
Systems for Geotechnical Engineers and Geologists*

## Hardware

### Triaxial Testing Systems

### Checking Transducer Calibrations

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## 1. Introduction

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Whenever you make a change to the set up or configuration of your system you should check that the calibration of the system transducers remains correct.

The calibrations that you should check are as follows:-

- Load cell.
- Pressure transducers.
- Displacement transducers.

## 2. Load Cell

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The load cell can be checked by applying a known load and then checking that the system output matches this load. At the simplest level this could be achieved by running the system to display the transducer readings and merely pushing on the end of the load cell. You can expect to push about 20kg (200N). This is therefore a very rough check that your setup is correct. At a more advanced level you could use a small proving ring to check the readings at low loads. If you have a Bishop and Wesley stress path cell you can put a dummy test specimen between the base pedestal and the load cell and apply a known calibrated pressure in the lower chamber. From a knowledge of the area of the Bellofram rolling diaphragm in the lower chamber you can calculate the force exerted by the applied pressure. At the highest level you should use a second reference load cell to cross check the readings from the system.

## 3. Pressure Transducers

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You can connect all of the pressure devices and transducers to a vessel which can be pressurised - this will normally be your triaxial cell. Set a pressure using one of the devices and check that all of the other devices read the same value. If they do then this is a good sign that they are all reading correctly. If you have an independently calibrated source of pressure you could also use this as a reference. However you should always be sure before you distrust a GDS controller because our experience with the GDS controllers is that the pressure calibration stays accurate to within one percent even after more than five years without calibration

## 4. Displacement Transducers

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These are the simplest devices to verify the calibration for. You can set a known change of position of the device and check this with calliper's, a steel rule or a slip gauge (piece of metal of known dimensions).