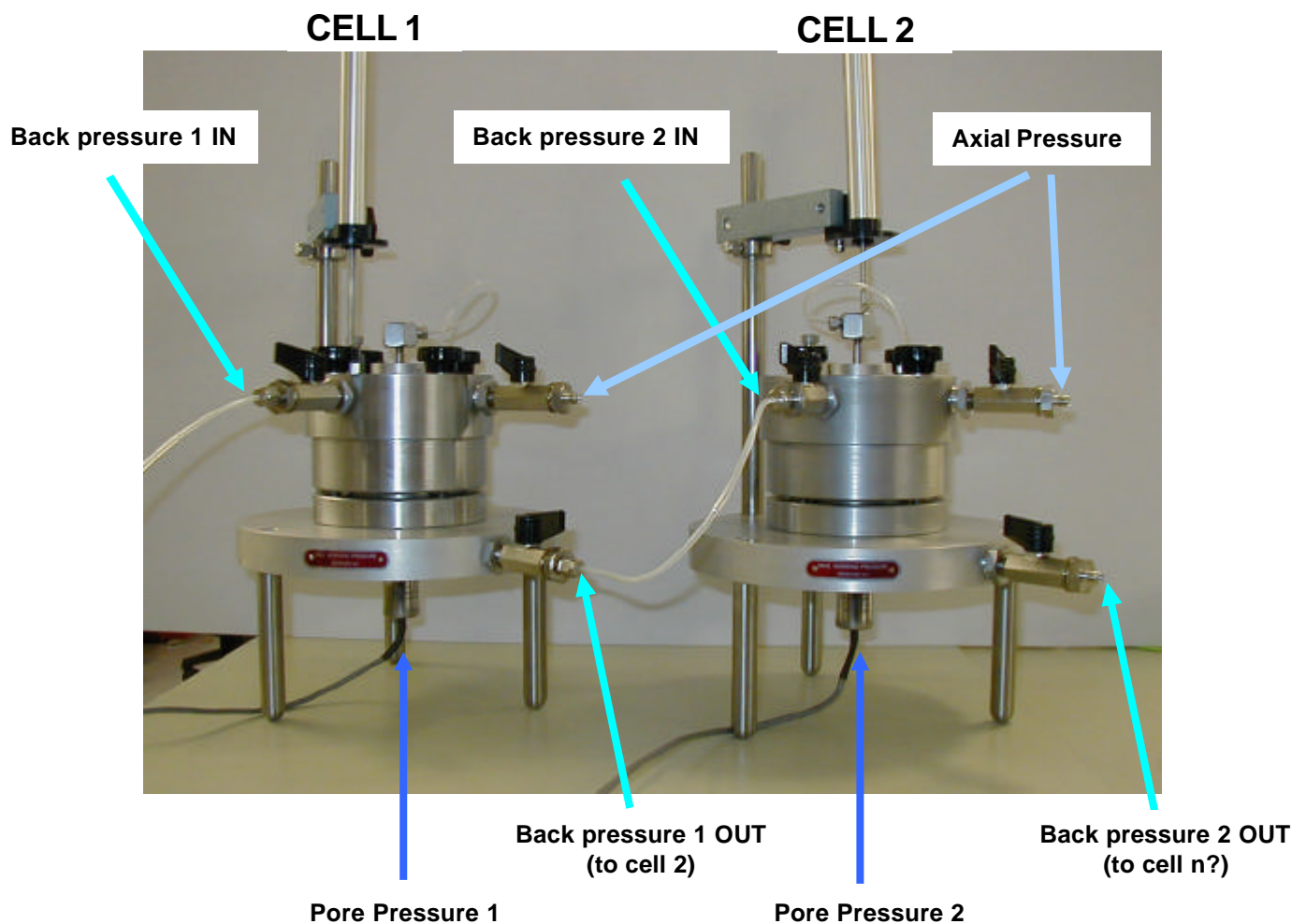# 136 Helpsheet

Hardware

Rowe & Barden Cell
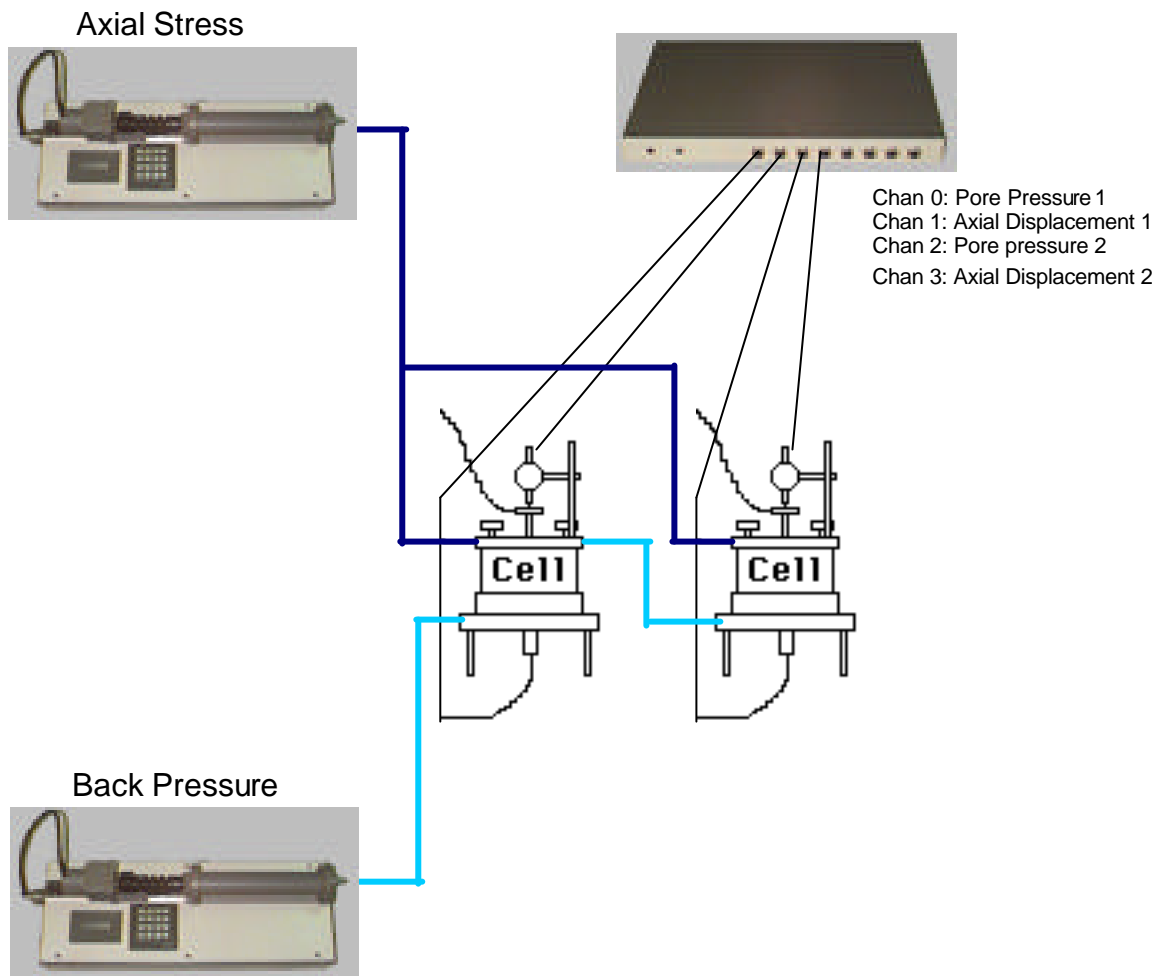
Testing using Mutiply Cells

This helpsheet shows the GDS recommended method for multiple interconnected consolidation cells.

1) Interconnecting Rowe and Barden Cells

2) Multi Cell system

Axial Stress

Chan 0: Pore Pressure 1
Chan 1: Axial Displacement 1
Chan 2: Pore pressure 2
Chan 3: Axial Displacement 2

Cell   Cell

Back Pressure

3) Recommended GDSLAB setup

To perform the interconnected consolidation test, GDS recommends the following as the simplest way to acquire data from the test using GDSLAB control and data acquisition software.

a) In the manual on page 2-5 entitled Station INI Files, the initialisation files you should select are dependant on the hardware you want to configure. To setup a system with 2 advanced controllers, 2 Rowe and Barden type cells and a GDS Serial Pad with 4 channels of data acquisition (Chan 0: Pore Pressure 1, Chan 1: Axial Displacement 1, Chan 2: Pore pressure 2, Chan 3: Axial Displacement 2), you should choose the following initialisation file within the following directory:

> \Hardware Configuration Files\ADVCTS\Multi cell CTS\

> then select the following files:

> **ADVCTS_2Cell(pad_4ch).ini**
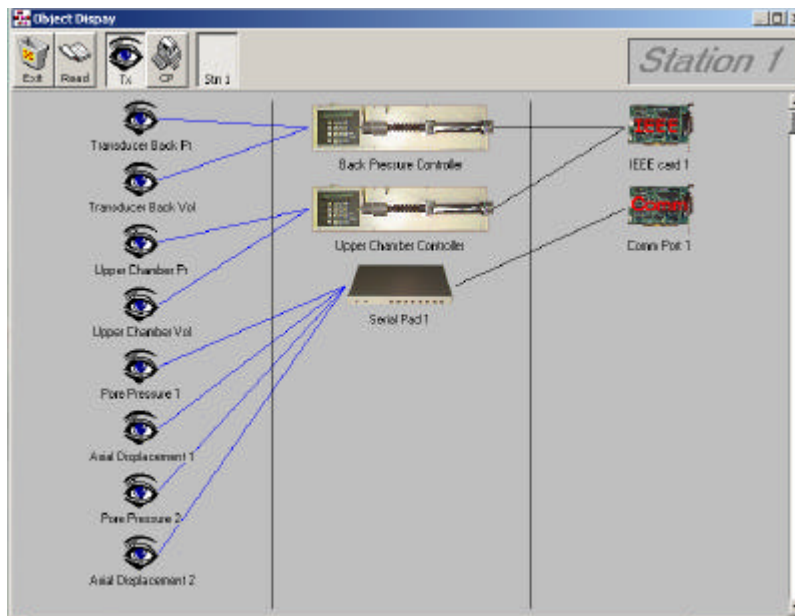
b) There is no specific control module available in GDSLAB that will allow for the configuring of multiple cells or specimens. The "Triaxial Acquisition" test module should therefore be used with the test type of "Just Log!" for the test. This will ensure that data for all of the transducers setup in the initialisation file (above) is saved.
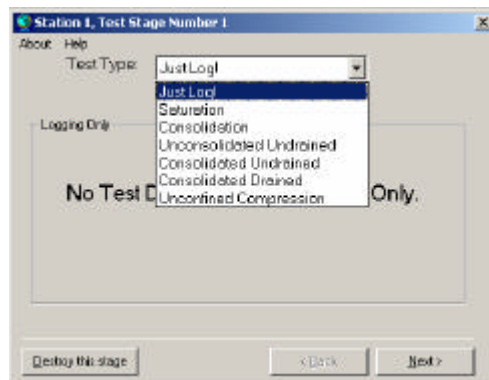
c) Within the saved data file, the 4 transducers are saved under the following headings:

Chan 0: Pore Pressure 1 *saved under the name of* **Pore Pressure 1**

Chan 1: Axial Displacement 1 *saved under the name of* **Axial Displacement 1**

Chan 2: Pore pressure 2 *saved under the name of* **Mid Plane PWP**

Chan 3: Axial Displacement 2 *saved under the name of* **Axial Displacement 2**

The reason that the Pore Pressure 2 is saved under the name of "Mid Plane PWP" is because there is no "Pore Pressure 2" within GDSLAB that it can be configured as. It should therefore be noted and remembered that the Pore Pressure 2 will always be saved under the heading of **"Mid Plane PWP".**

d) Control of the test is performed via manual control of the two advanced controllers.

e) At the start of the test it is recommended that both the displacement transducers and the volume change on each controller is set to zero either manually or via the software (within the object display).

f) Specimen parameters (such as initial height etc) should be entered for the specimen that Axial Displacement 1 and Pore Pressure 1 are attached to. In this way, the calculated parameters on screen will refer to this specimen and give you a guide to how the consolidation is progressing. In other words, the test should be considered as a single consolidation test, where additional transducers (not involved in the main calculations) are also attached taking synchronised data from other cells during the test. The only parameter that will not be correct for the primary specimen will be the back volume change, because this of course will be flowing out of the first sample and into the second.