

156 GDS Helpsheet



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

Hardware

Operational procedure to remove and replace the glass inner cell

In all the procedure steps please refer to the general assemble PDF that has been sent with this document.

Remove the cell top from the base & access ring (M16 bolts)

Invert the cell top and make sure that it is support so that none of the attachments on the cell top can be damaged. You should then see a number of M12 nuts and washers

Remove the nuts and washers in opposites as to not over stress the cell walls, use a second spanner to secure the tie bars at the flattened section so as not to damage the top section of the cell.

Remove the cell top ring making sure to keep the o-ring intact.

Remove the inner cell lower ring again making sure to keep the o-ring intact.

Carefully remove the broken glass inner wall making sure to clean any remnants of broken glass from inside the cell with the use of a vacuum cleaner, replace the upper o-ring making sure to re-grease it and set it into its insert correctly, then replace the glass inner cell wall carefully making sure that it does not foal with the upper ring.

After replacing the new inner glass wall reassemble the cell in the reverse order in which it was dismantled, ***Note: Do not forget to replace all the o-rings and re-grease them in their original positions, if not done this will break the glass inner cell when the M12 tie bars are tightened.***

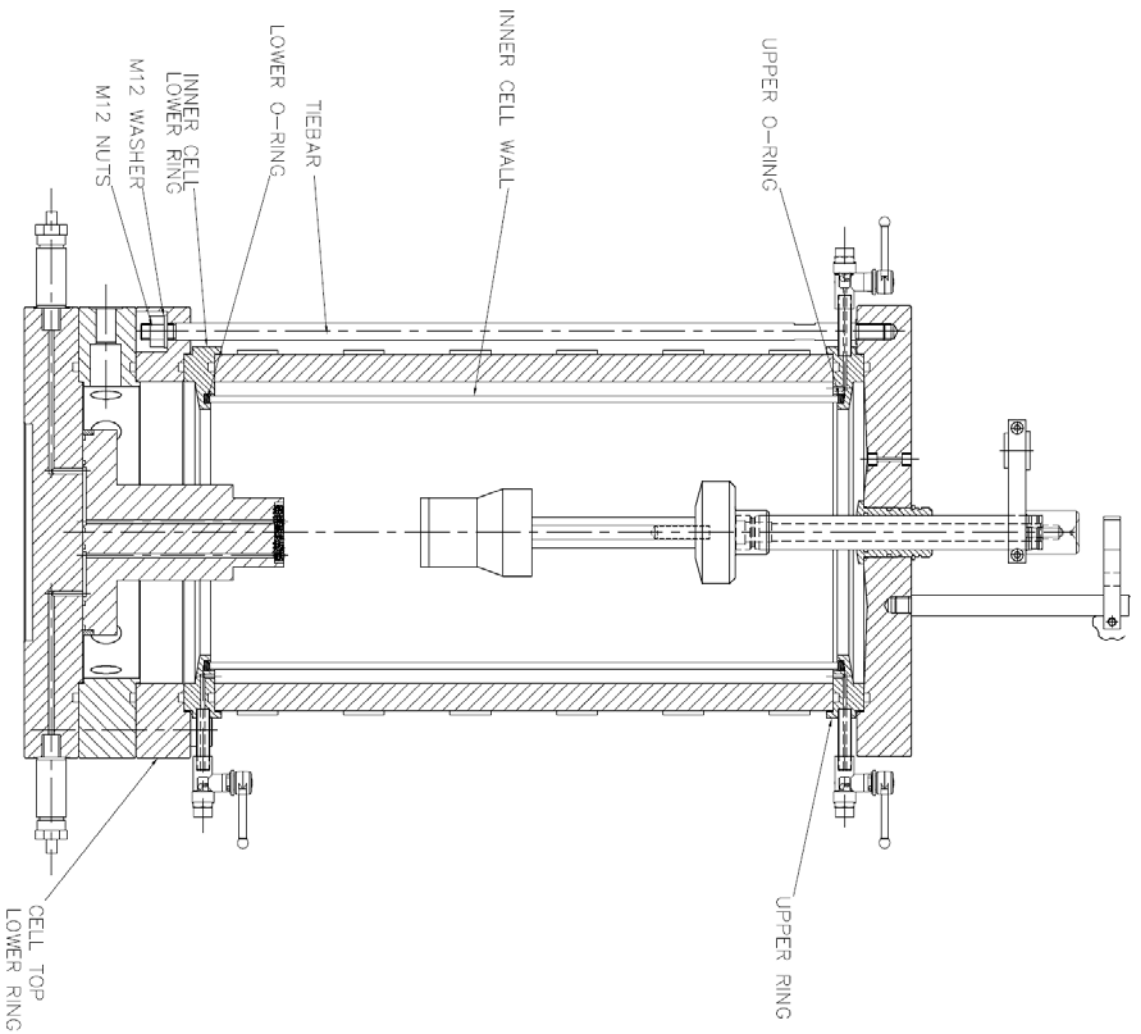
When tightening the M12 nuts tighten them to a torque of 20N/m in the same opposite manor as before.

Pressure test the cell, ***Note: make sure that the cavities between the inner cell wall and outer cell wall are at equal pressure.***

Using two different controllers follow the below procedure:

- Connect the inner cell chamber connection (preferably the one located in the cell top) to the valve that supplies the cavity between the glass cell and the Perspex cell with a length of pipe, this will allow them to pressurise in unison, then fill with water de-airing the system in the process.

- Pressurise the cell and cavity to 100kPa using a single controller connected to the second valve that allows the cavity to be filled/pressurised.
- Leave until the volume change is negligible, then close the valve at the top section of the cell thus cutting off the link between the cavity and the cell pressure, but **do not** remove the section of pipe connecting the two, this will release the pressure from the cell and could cause the glass to crack due to the difference in pressure either side.
- Connect a second controller to the inner cell using one of the available valves at the base of the cell and target the controller to 100kPa.
- Both controllers should now be targeting 100kPa with no volume change. Zero both of the controller's volumes.
- Increase the pressure of the cavity to 110kPa and leave to settle, if there are any leaks the volume change in the controller connected to the inner cell pressure will increase constantly.
- Restore the pressure of the cavity to 100kPa then re-open the valve with the pipe connection that was used before and open the valve so the cavity and inner cell pressures are equalised, make sure now that neither controller is targeting a pressure.
- Using either of the controllers attached target 0kPa.



All Dimensions And Tolerances Apply After Finishing

Tolerances:

UNIT	±1
1 DEC PLACE	±0.50
2 DEC PLACE	±0.25
3 DEC PLACE	±0.13
SURFACE FINISH UNLESS OTHERWISE STATED	✓

(C) GDS Instruments Ltd

Unit 32
Murrell Green Business Park,
Hook RG27 9GR, UK
Tel: + 44 (0) 1256 582450
e-mail: enquiry@gdsinstruments.com

SCALE	DATE	DRG NO.	MTS
CHECKED			
DRAWN	JS	23/10/12	
USED ON	xxxx		

THIS DRAWING IS CONFIDENTIAL AND IS THE PROPERTY OF GDS LTD. IT MUST NOT BE DISCLOSED TO A THIRD PARTY OR REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS WITHOUT THE WRITTEN CONSENT OF GDS.

DRG DESCRIPTION:
150mm DOUBLE WALLED CELL
SERVICE DIAGRAM

File Name: 150DWC- SERVICE DIAGRAM

REV.	DESCRIPTION	DATE
A	FIRST ISSUE	23/10/12