

Biax Experiment

For current calibrations – [gpfs/group/cjm38/default/Calibrations/](#)
Revised: 30 Nov. 2021

Exp. Name: p5741
Operator(s): Wood
Temperature (°C):
Relative Humidity (%):

Date/Time: 23/06/2022
Hydraulics start: 5380.2
Hydraulics end: 5385.2
Data Logger/Control File: 16-chan

Purpose/Description: Saw-cut L-block roughened with #80 grit. Try to measure change in outlet flow rate.

Sample Block Used and Thickness with **no** Sample: SDS Vessel 5x5 cm

Material: Westerly Granite Benchtop Sample Thickness (mm): 32.5
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Load Cells:

Contact Area: 0.0022231311 m²

Load cell name	Calibrations (mV/kN)	Target stress (MPa)	Init. Voltage	Volt. @ load
44mm Solid Horiz	129.984 (V/MPa): 0.289	4, 9.25, 10, 10.5	0.531	1.68689, 3.20399, 3.42071, 3.5652
44mm Solid Vert	120.364 (V/MPa): 0.2676	0	0	0.

Vessel Pressures:

Pore Fluid:H2O

Calibrations (V/MPa)	Pressures (MPa)	Init. Voltage	Volt. @ load
<i>P_c</i> : 0.1456	2, 8.25, 7.75, 7.25	0.018	0.3092, 1.2192, 1.1464, 1.0736
<i>P_{pA}</i> : 1.5083	2.6, 1.4, 1	0.023	3.94458, 2.13462, 1.5313
<i>P_{pB}</i> : 1.4611	2.6, 3, 4, 5	-0.055	3.74386, 4.3283 , 5.7894 , 7.2505

Displacement Transducers

Name	Gain (mm/V)
Horiz. Load-point	0.658
Vert. Load-point	3.51
Horiz. On-Board	0.416

Horizontal Servo Settings	
P: 900	D _{atten} : 10
I: 800	Feedback: 512
D: 10	E-gain: 800
Vertical Servo Settings	
P:	D _{atten}
I:	Feedback:
D:	E-gain:

<i>Chilled water at HPS</i>	<i>Chiller Unit</i>	<i>Proc. water @ Chiller</i>
1. Temp In (°F):	6. Panel Temp (°F):	10. Temp In (°F):
2. Pres. In (psi):	7. Panel Pres. (psi):	11. Pres. In (psi):
3. Temp Out (°F):	8. Near Pres. In (psi):	12. Temp Out (°F):
4. Pres. Out (psi):	9. Near Pres. Out (psi):	13. Pres. Out (psi):
5. Flow (lpm):		
<i>Hyd. Power Supply (HPS)</i>		
14. Tank Temp (°C):	15. Temp. Out (°C):	16. Pres. Out (psi):

Experiment Notes

550 NS to 4 MPa
1400 Pc to 2 MPa
1600 saturate, PpA to 1 MPa
5800 NS to 9.25 MPa, Pc to 8.25 MPa
7150 PpA & PpB to 2.6 MPa. attach on-board dcdds
24500 PpA to 1.4 MPa, flow-thru for 5 min.
30000 PpB oscillations. [0.1, 1, 1, 10, 10, 1]Hz @ 1 MPa. – run1.
907760 PpB to 3 MPa, PpA to 1 MPa, flow-thru for 5 min.
912000 PpB oscillations. [0.1, 1, 1, 10, 10, 1]Hz @ 1 MPa. – run2. PpB PID settings not tuned well.
1820100 NS to 10 MPa, Pc to 7.75 MPa
1821300 PpB to 4 MPa, flow-thru for 5 min.
1825200 PpB oscillations. [0.1, 1, 1, 10, 10, 1]Hz @ 1 MPa. – run3. PpB PID settings not great for 10 Hz osc.
2714400 Pc to 7.25, PpB to 5 MPa, flow-thru for 5 min.
2718900 PpB oscillations. [0.1, 1, 1, 10, 10, 1]Hz @ 1 MPa. – run4. PpB PID a little better @ 10 Hz osc.
3622000 Pc to 7.75 MPa, NS to 10 MPa.
3622500 PpB to 4 MPa, flow-thru for 5 min.
3626000 PpB oscillations. [0.1, 1, 1, 10, 10, 1]Hz @ 1 MPa. – run5. PpB PID settings not great for 10 Hz osc.
4504100 PpB, PpA, Pc to 0 MPa. NS to 10 kN.
4506100 unload NS