

**MTS Biaxial Extensometer****Model: 632.85F-05****Serial Number: 10544202****Location of Machine:** Composites Lab, RFM 1218**Location of SOP and Machine Operating & Safety Manual:** Composites Lab website under resources; Composites Lab TRACS site.**Emergency Contact:**

- Call 911
- Call EHS & Risk Management at 512-245-3616
- Call Head Lab Technician, Dr. Ray Cook (office 512-245-2050)
- Call Dr. Jitendra S Tate (office 512-245-4872)

**Before using this machine:**

- You must have permission from Dr. Tate.
- You must have received formal training from technician or, trained research student (designated by Dr. Tate) related to machine safety and operation.
- You must read and understand the **Biaxial Extensometer and MTS SOP**.
- You must use this machine under direct supervision of Dr. Tate or, Dr. Cook or, trained research student (designated by Dr. Tate).
- You must have signed "Lab Rules" document with Dr. Tate. This document must be signed every semester fall, spring, and summer (as applicable).
- If you do NOT follow above instructions you will be held responsible for your own safety and damages.

**Safety Precautions:**

Protective Equipment: Prior to performing this procedure, the following personal protective equipment must be obtained and ready for use: **Safety Goggles**

**Important Safeguards:**

- Make sure that the loads used do not break the specimen, or else the biaxial extensometer may fall off and break upon hitting the machine or the floor!

**Specifications:**

Refer to MTS SOP.



Biaxial Extensometer located in table cabinet labeled "MTS GRIPS, EXTENSOMETER"

### **General Information**

Biaxial extensometer should only be used in tension testing to determine the Poisson's ratio.

### **Specifications:**

Refer to MTS SOP

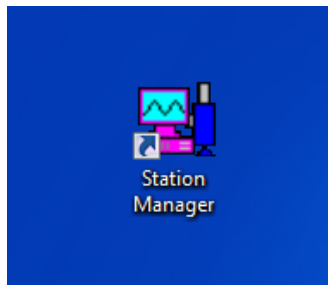
Power on the MTS hydraulics



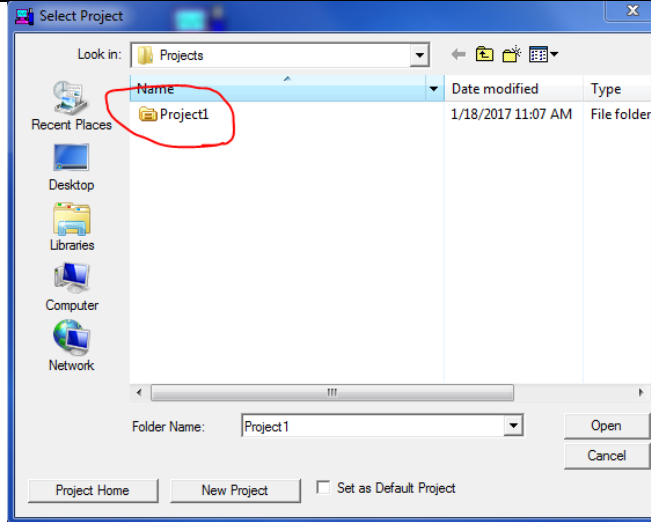
Turn on the MTS FlexTest SE Controller



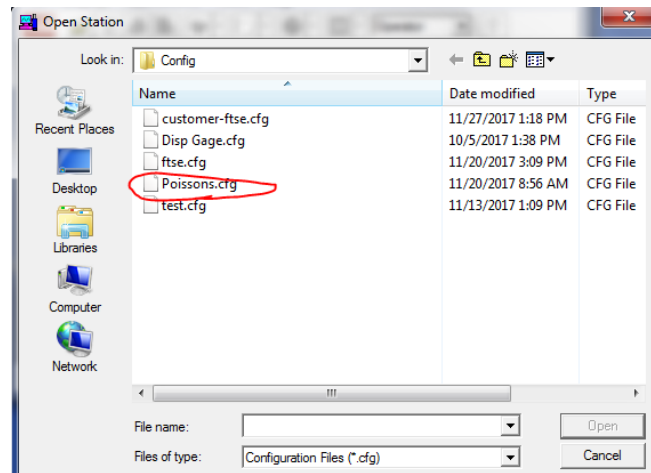
Open Station Manager



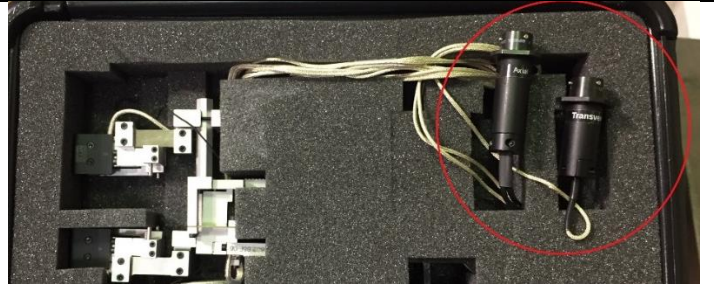
Select 'Project1'



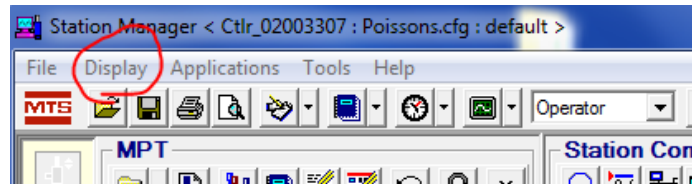
Select 'Poissons.cfg'



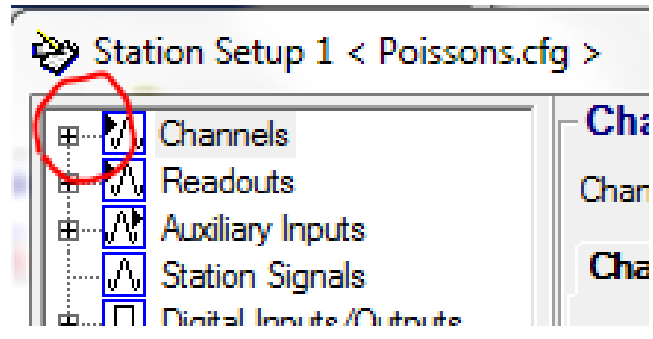
Connect the two cords of the Biaxial Extensometer called “Transverse” and “Axial” to the cords available on the left of the MTS machine called “Transverse Disp gauge” and “Poissons Axial” resp.



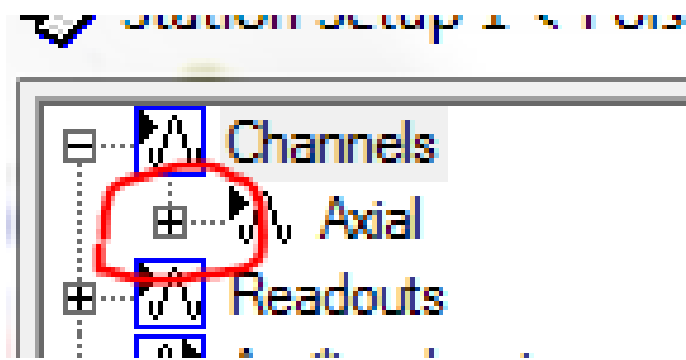
To double check that the Biaxial Extensometer corresponds to the software, click the ‘Display’ tab at the top of the screen and select ‘Station Setup’ in the dropdown menu.



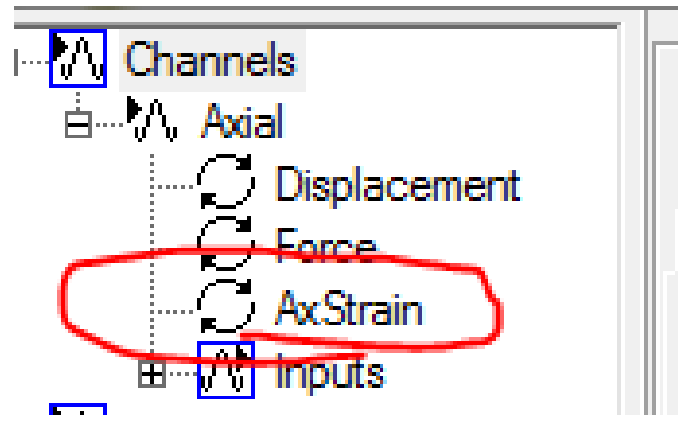
Click the + icon next to 'Channels'



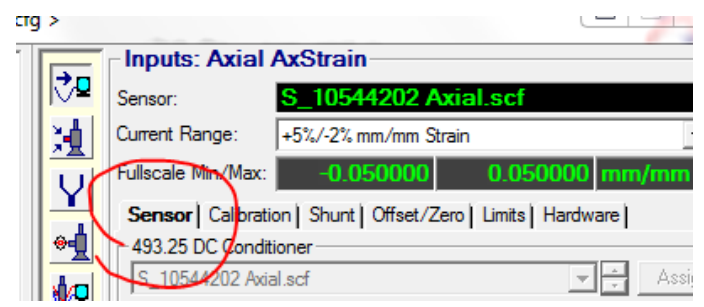
Click the + icon next to 'Axial'

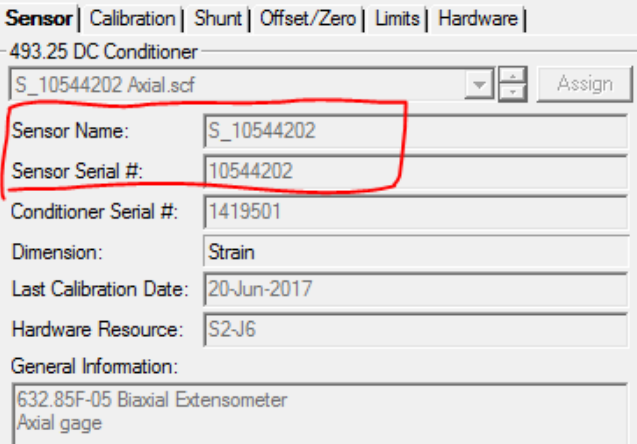
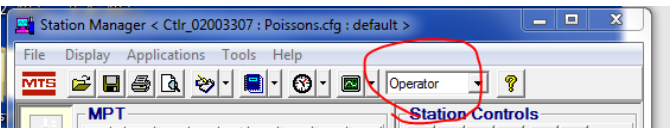


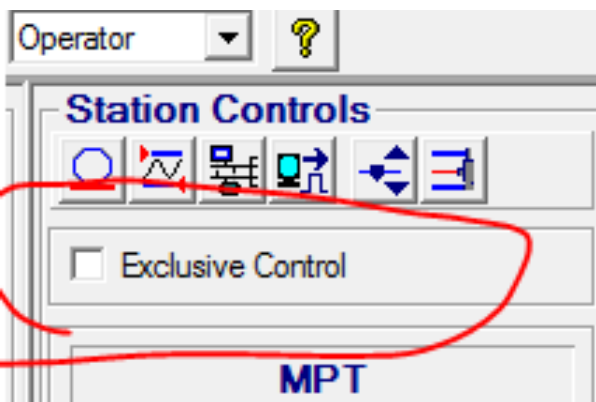
Click on 'AxStrain'



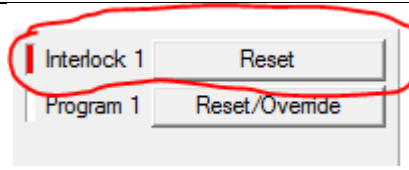
Click on the 'Sensor' tab on the right.



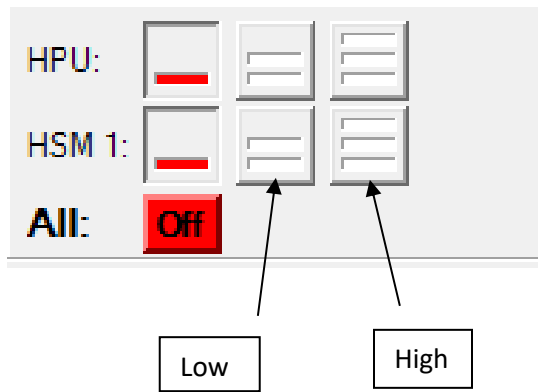
<p>Verify that the sensor name is 'S_10544202Axial.scf' and that the serial number is 'S_10544202'.</p> <p>If these are different, double check that you are in the Poissons.cfg folder.</p>	
<p>If you are in the correct folder and these are still different, you will need to enter calibration mode to make edits. To enter calibration mode, click the drop down box titled 'Operator' at the top of the screen and select 'Calibration'. It will then prompt for a password, which is 'Calibration'. You will now be able to make changes to the sensor name and serial number at this location.</p> <p>To get into tuning mode, the password is 'Tuning'</p>	

<p>Continue the setup procedure as normal until the specimen is mounted on the MTS machine.</p> <p>Click on and check the 'Exclusive Control' box on the Station Manager home screen.</p> <p><i>Note that this will have to be unchecked before starting the test.</i></p>	
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Reset the Interlock

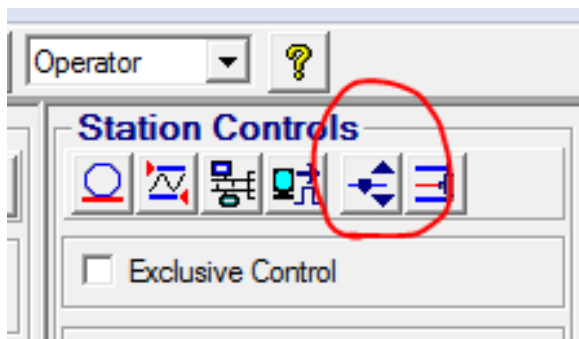


Turn the HPU Low on, wait until it stops flashing. Turn HPU High on.

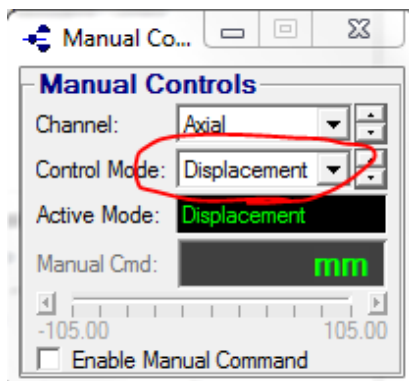


Turn the HSM 1 Low on. Turn HSM 1 High on.

Click the  'Manual Command' icon.



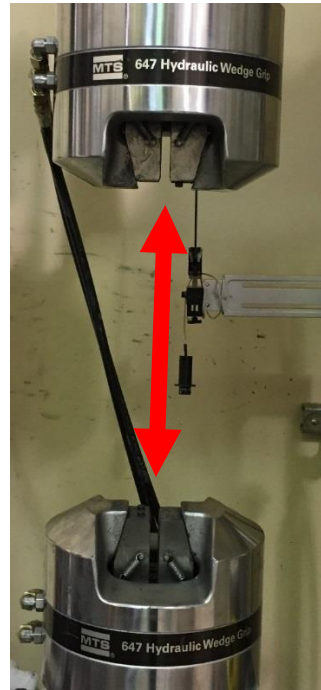
On the popup screen, make sure that control mode is set to 'Displacement'



Click enable manual command 

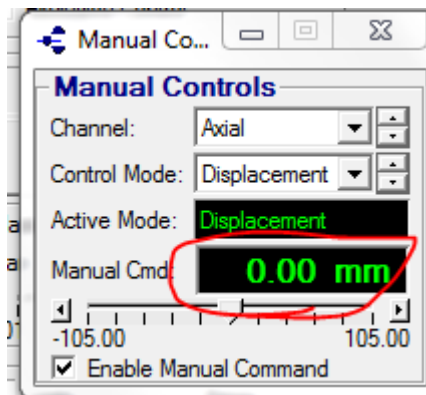


Make sure that there will be no interference between the top head and bottom head of the actuators

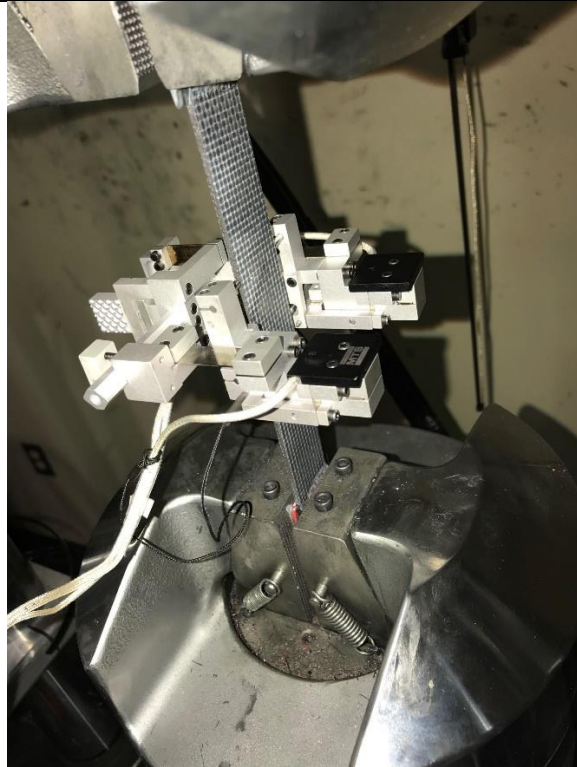


Set the 'Manual Cmd' to 0.0mm, which will raise the bottom head up to home position.

Uncheck the Enable Manual Command



Load specimen and carefully connect the Biaxial Extensometer to the center of the specimen.



Fasten grips on specimen using allen wrench.



Run test.