

\*\*\*please read full SOP before operation

Computer part:

1. After turning the computer on and signing in open LABVIEW

\*\*\*the computer will only turn on if the **main power for the instron is on** (located bottom right of machine)

2. In labview open file: **Main-20K-Load Cell.iv** FIGURE 1

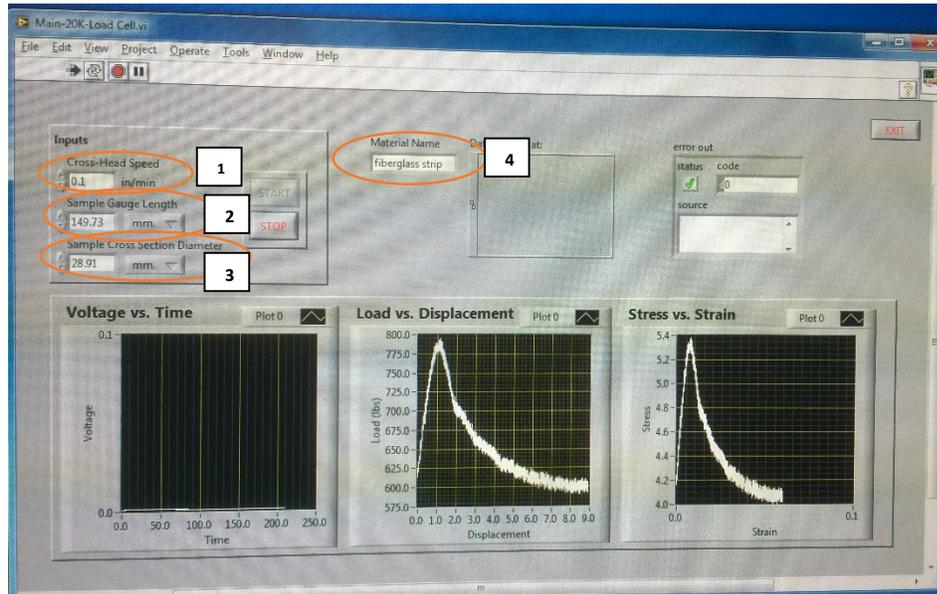


Figure 1 image of LABVIEW program

3. Set cross head speed to .2 in/min [1]
4. Using a caliper measure (in mm) gauge length and width FIGURE 2 (RECORD IN LAB NOTEBOOK) use a sharpie to mark the ends of the gauge length.

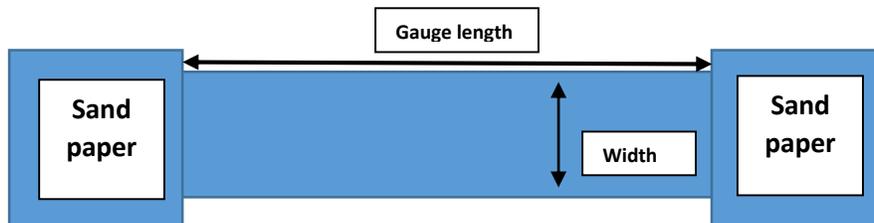


Figure 2 Visual measurement definitions

5. Enter values of gauge length [2] and width (cross sectional diameter) [3] in program FIGURE 1
6. Enter sample name [4]

Instron part:

1. Make sure main power is on. (only the main power switch should be up) FIGURE 3
2. Check cross head speed is behind the latched door (machine will not work if this door is open) the gears should be Bx, By (if not tell Dr. R)
3. Close door latch.
4. Check that cycle control is turned to manual [1]. FIGURE 4
5. Turn the Amplidyne switch up. FIGURE 3
6. Move the BOTTOM clamp up and down using the switch [2].

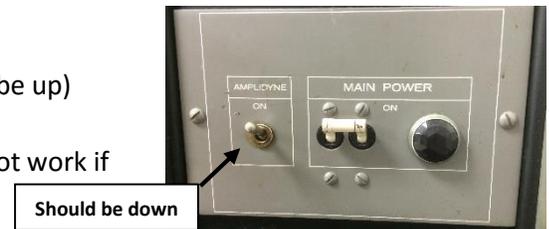


Figure 3 Amplidyne and main power switches

\*\*\*\*The bottom clamp should be well below upper, such that the bottom of your sample is above the bottom clamps. (this makes loading easier)

7. Load the top of your sample in to the top clamps such that top of sample and sandpaper are at the top of the clamp.
8. Use wrench to tighten (down) and loosen (up) left side of the clamp until sample is secure.
9. Open the bottom clamp enough so your sample will slide in using wrench. Right side: tighten (up) loosen (down)
10. Raise the bottom clamps using the up option on the switch [3].
11. Secure bottom of sample such that the bottoms of your sample and sandpaper are even with the bottom of the clamps.

Running the program:

1. In LABVIEW, Press the run button, then press start.
2. On the machine, hit the down button [4].
3. Press **stop** [5] once sample fractures/pulls out

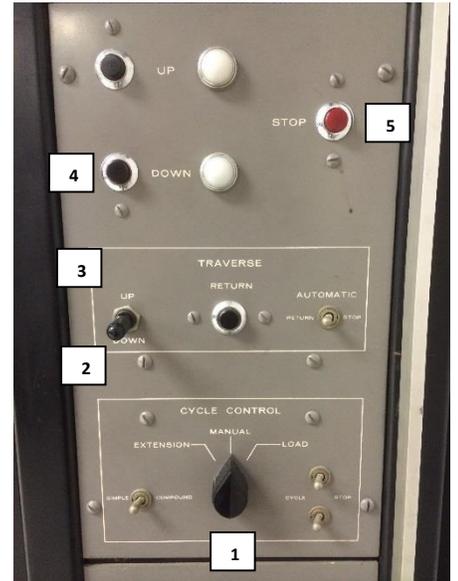


Figure 4 Instron control panel

**\*\*\* To stop the machine at ANYTIME, hit the STOP button\*\*\***

- 1) This program will only provide that data for displacement. Use the Load (20K), beginning length, final length etc. to find the stress and strain values.
- 2) Also determine if it is a ductile or brittle fracture—be able to defend your choice.

