

Airflow Measurement Experiment

ver 6.05

Startup:

1. Take all the metal rings off of the bypass valve through the window.
2. There are eight rings available. You can either keep track of what numbers you use and weigh the rings later or just assume that they are all the same weight.
3. Go to a Bailey station and use 2 computers (one for control, the other for data acquisition).
4. To learn how to run Bailey, click [here](#).
5. On the control station, go to the Airflow Control Area (option K).
6. Make sure you get read-outs for the differential, absolute and lab temperatures.
7. Press the “page down” key to access the associated temperatures and the control itself. This needs to be in manual mode and at “100%” to begin.
8. Keep in mind that each pressure and temperature corresponds to a point along the pipe as shown in the diagram.
9. The “c” key will activate the right-hand area of the screen; change it to manual control.
10. Begin your data acquisition on the second computer. It is suggested that you set the sample rate to once every 1-5 seconds. For more information on how to do this click [here](#).



11. Once it is all set up, go behind the air compressor and switch it on.
12. Okay, now you're to the hard part. The Bailey measures and records every meter except for the flow meter (rotameter) which is read manually. The best way to take a reading is to take not one but several measurements (10-30) over a specified time (10-30 seconds for example) and then take the average.
13. Arrange within your group to have someone read the flow meter, another to record what the first person reads, and another to look at either the absolute time or the sample Bailey is on. That way your flow rate data will correspond to what Bailey records.

Shutdown:

1. Remove the disks from the bypass valve.
2. Turn off the compressor by pressing the red STOP button on the wall.

