www.rbdinstruments.com

545 System Up-to-air Procedure

1. Turn off all filaments and power supplies, except for the Boostivac ion pump control. Make sure that the ion gauge control is also turned off.
2. Close the poppet valve by turning it CW until it is snug. It works like a scissors jack, so do not over-tighten it. It is the chrome handle under the roughing manifold.
3. Make sure that the turbo pump is off and all turbo valves closed.
4. Open the up to air valve on the roughing manifold located under the tabletop. It is a small aluminum knurled knob. If possible, connect dry nitrogen to this line at a pressure of 3PSI.
5. Slowly open the gold seal valve located near the center of the roughing manifold. It is normally closed to 50 foot pounds, so you may need a wrench to get to started.
6. As you open the gold seal valve you will hear Nitrogen or air hissing into the system.
7. After the hissing sound is finished (about 5 to 10 minutes), the system is up to air and you can remove flanges as required.

545 System Pump Down procedure

1. Make sure that all flanges are tightened. Use new copper gaskets when replacing flanges. Tighten evenly.
2. Make sure that the turbo pump is OFF
3. Close the gold seal valve, tighten it to 50 foot-pounds (or the same torque as when you opened it up, which may be a little higher).
4. Close the up to air valve on the roughing manifold.
5. Open the intro pump valve as if you were going to be loading a sample into the chamber.
6. Open the gate valve by pulling the emergency vent valve located under the sample intro switch assembly towards you. It is a little toggle switch slightly forward with respect to the IN button on the intro switch assembly.
7. Turn on the turbo pump. The turbo will take about 20 minutes to pump the system down to the 10-4 range. You may see some oil vapors coming out of the mechanical pump for the first few minutes. This is normal.
8. After about 20 minutes the turbo should be up to full speed. If so, you can turn on the DIG ion gauge filament to monitor the system vacuum.
9. Once the system is in the low 10-4 or high 10-5 range, you can close the gate valve by running the intro probe slightly into the chamber and then back out again. This will close the gate valve.
10. Once the gate valve is closed, slowly open the poppet valve by turning it CCW. Monitor the High Voltage Meter on the Boostivac ion pump control to determine how fast to open the poppet valve. The high voltage is normally about ½ of full scale on the 10KV scale. You do not want it to drop to less than about ¼ scale (2500 volts). Note: Full scale on your unit may be 5KV, in which case you do not want it to drop to less that ½ scale.

11. Once the poppet valve is fully open the system will continue to pump and the vacuum should improve to the normal level over a period of a few days.