

DRY-PUMPING STATION OPERATION PROCEDURE

The chamber should always be left under vacuum!

Cryoholders should be stored in the station under vacuum when not in use.

I.

1. All valves (V1, 2, 3) should be closed.
2. Record the current state of the counter underneath the lights.
3. To take out or to insert a cryo holder, open V1 & V3 to vent the chamber. When the hissing sound stops the holder or the blanking plug may be pulled out.
4. Close all valves; insert the blanking plug (or cryoholder) and turn on the power.
5. Watch for amber (or green light) on front panel (to the right). If none of them are on than turn the unit off and find or call Misha or Mike. That means that turbo pump did not start. If amber lights are on, proceed.
6. Open V1 and V2. Eventually green light (the rightmost) in the front panel should be lit. If that does not happen in 3-5 min, or if you hear hissing sound, check V3 and the sleeve, if blanking plug or holder are missing.

Warming up the holders.

7. Pump the holder. Follow the above procedure **I**.
8. Push the main knob on SmartSet controller, select "warm up" mode from the menu and start it. The heater in the holder will be warming up the holder's tip until all ice has sublimated and the temperature has risen up to ~40°C. Wait until vacuum is back to low 10^{-5} Torr range.
9. Shutdown the station.
10. Record the state of the counter.

II. Shut down procedure

1. Close all valves (V1, V2 and V3).
2. Turn the power off. Remember that the station's pumps will be vented, that is why all the valves should be closed to keep the station under vacuum.

III. Regenerating zeolite.

1. Insert a holder into the station; follow procedure **I**.
2. Connect plastic tubing to the pumping port on the cryo-holder dewar. Make sure that the second line of the valve V3 is plugged.

3. Pump the holder (**I**).
4. Close V1.
5. Open V3 (note that V2 stays open) and pump down to low 10^{-5} Torr range.
6. Open the valve on the dewar of the holder. Make sure that both V3 and the dewar's valve are completely open.
7. Use SmartSet Controller's "zeolite bake out" mode to regenerate the zeolite. Pump the dewar for at least one hour (standard bake out cycle is two hours); allow holder to cool down to room temperature. Close dewar's valve, then close V3 and V2 and turn the power off.
8. You can take the holder out from the station now. Re-evacuate the station after that.
9. Record the state of the counter.