

Labconco FreeZone 1 Liter Lyophilizer, Model 7740021

AF | 2018-09-28

If you encounter problems while running the instrument, please use submit an **Instrument Incident Report** with a description of your problem. **For urgent problems please report to Al Fischer, NS 209, dfischer@wcu.edu, x2695!**

1 Setup

1. Create an entry in the log book with your name, the date, your sample and solvent, and any problems you encounter.
2. Plug the lyophilizer into a 20-amp dedicated outlet (has one vertical and one horizontal prong, in addition to the normal grounding prong).
3. Check the oil level in the pump and ensure it is within the acceptable range. If it is not please notify the Instrumentation Specialist.
4. Ensure the gasket on the chamber's upper lid, the gasket on the lower lid, and the gasket between the collector and the chamber are all free of debris. Clean them soapy water and dry with a Kimwipe if necessary. Debris on the gaskets may cause leaks.
5. Place the lower lid (with hole) on the collector, center the small gasket on the hole in the lid, center the chamber over the small gasket, and place the lid on the chamber.
6. Ensure all valves on the chamber are in the closed position (beveled side up).

2 Turn On

1. Turn the lyophilizer on by flipping the power switch on the right side of the instrument.
2. Allow the instrument to cool to -50 degrees C. It should reach this temperature within 10 minutes; if it does not please notify the Instrumentation Specialist.
3. When the instrument is below -40 degrees C you may turn on the vacuum. Press the green **Vaccum On/Off** button. If the pressure is not < 0.133 mbar within 10 minutes of starting the pump, please notify the Instrumentation Specialist.

3 Process Samples

1. Pre-freeze your samples using an appropriate protocol and load them into one of the glass sample holders. Connect it to a port on the chamber with the adapters provided. *The sample container should always be 2-3 times the sample size!*
2. When the temperature and pressure are acceptable, open the sample valve to place your sample under vacuum (beveled side of valve will be down).

Remember the glass container will be under vacuum and should be handled with extreme care!

3. Watch for all frost to disappear from the sample container and then dry the sample for several hours past that point.
4. Move the plastic knob to the closed position (beveled side up). This will allow air to enter the container and bring the sample to atmospheric pressure; alternatively, the sample can be purged with an inert gas.

4 Turn Off

If you plan to lyophilize again within the next 24 hours you may leave the system on. Otherwise, turn it off when you finish.

1. Break the vacuum while the instrument is still on by opening one of the spare valves on the sample chamber. You should hear a hiss, and the vacuum pressure should read “HI”.
2. Press the green vacuum button on the front of the instrument to turn the pump off.
3. Turn the system off by flipping the power switch on the side.
4. Wipe the inside of the chamber with a Kimwipe to remove any residues and clean gaskets with hot, soapy water if they’ve been dirtied.
5. If significant amounts of ice have developed on the collector coil, place the drain hose (black, on front of instrument) in a suitable container (e.g. plastic tub) and remove the drain plug. Empty the water and replace the drain plug when the defrost is complete.
6. Clean up your work area.