

Lyophilizer

Virtis Lyophilizer (NSC 460)

Every time you use the lyophilizer, you MUST sign the logbook.

Make sure white knobs are all turned the correct/closed direction. Closed is with the large white tab lined up with the small black rubber tab.

When you turn the vacuum off, release the vacuum by opening one of the ports. If you don't, the oil will be sucked up into the system.

Be careful when someone is already using the Lyophilizer – see instructions below (#13).

Be sure sample is frozen.

Be sure to drain water if the chamber has been defrosted. When you turn the vacuum off, release the vacuum by opening one of the ports. If you don't, the oil will be sucked up into the system.

Ice condenser is extremely cold – do not touch.

Utilization of acid requires extra cleaning and neutralization after defrost or physical damage will result.

Difference between Virtis and Labconco Lyophilizers: Virtis lyophilizer cools down to -110°C, Labconco cools to -80°C.

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Virtis Lyophilizer

***Vacuum meter is broken (OK, you don't really need it). "Automode" is also out of order.**

1. Check oil level of vacuum pump. Change oil if there is a problem with the lyophilizer holding a vacuum. Dispose of any used oil in the jar next to the pump. Clean up any spills.
2. Get rid of water in a water trap using drain tube every time before use. Snap tubing into drain (on the left side of the lyophilizer). Be sure to remove the tubing, otherwise water will go all over the place.
3. Put manifold (has a lot of black rubber ports) and plastic shield on water trap. The bottom plastic shield may also be off – place over water trap with small rubber rim up.
4. Turn on main power switch. It is behind the machine on the left.
5. Press "Refrig" and wait until temperature goes down to -100 °C. 30min or more. To read actual temp. select "Cond."
6. Press "Vacuum" and wait 30min.
7. To confirm that vacuum is OK, put a freeze dry sample bottle, which contains 3ml of H₂O and start the vacuum by opening the port. You can visually see that a vacuum seal is formed by looking at the black seal between the manifold and the

- plastic cover on top. Without a good vacuum, the seal is grayish black and once the seal forms besides the fact that you can't open the plastic lid, the seal is dark black. Note the color of the seal before you start so you can tell the difference. The water should start freezing within a few minutes. If it does not start freezing, air is leaking from somewhere. Find it. Fix it.
8. Put your frozen sample in Freeze Dry bottle and start vacuum by opening port. . If your sample is not frozen, it will start to boil and you will lose it.
 9. 30 min later, check your sample to make sure it is still frozen. If not, air is leaking from somewhere. Fix it. If your sample does not remain frozen, it will start to boil and you will lose it.
 10. Once sample is dry, close port and remove sample bottle.
 11. To turn off, open one valve to release the vacuum. Press "Vacuum" off.
 12. Press "Refrige" to stop refrigerator. Remove the head part.
 13. **If someone is already on the Lyophilizer** – you can still put your sample on. Close the vacuum valve on the other samples, put your sample bottle on. Open both your sample valve and the other sample valves. **When removing your sample bottle when someone else is also using the Lyophilizer** – close both valves, remove your sample bottle. Open the other sample valves.

When a lot of air is leaking, pump will start smoking. Find leaking part.