

## Lyophilizer

### Labconco Lyophilizer (PSC 637)

**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 (#16).**

**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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### Labconco Lyophilizer

Before starting:

1. Check oil level of vacuum pump. Do not change oil if there is a problem with the lyophilizer holding a vacuum or if looks dirty or cloudy. Call or email the Core facility personnel to change the oil and clean up.
2. If the chamber has been defrosted or the lyophilizer has been turned off (lid should be to the side), you need to drain the water before proceeding. The drain tube is the black button near the bottom left of lyophilizer. Pull the tubing out, uncap and drain into the jar labeled water waste. Push tube back into hole and make sure recapped well.
3. **There is a Secondary Vacuum Cold Trap attached that provides additional protection for the vacuum. Fill the container (located in the back of the freeze dryer) with dry ice (located in the gray cold box across from the lyophilizer under the table) and Methanol (from your lab).**

Automatic

1. Turn on main power switch – front panel to the right.
2. Press refrigeration AUTO

3. Wait until temperature graph turns green + vacuum graph has one green and one amber lit. The graph is a cascade of lights. When the temp. and vacuum are right – the cascade should be all amber with the lowest light green. For samples that aren't as sensitive, you can put your sample on when the green light on the vacuum is 1 light from the bottom. The refrigeration graph should have the lowest light green.
4. SENSITIVE samples: should be added when only the lowest lamp is green.
5. To turn off: Break vacuum first. Press refrigerator **AUTO**
6. If there are samples already on the machine, put your sample on the valve and open the valve. When you are done, close the valve and remove your sample. If there are other people using the lyophilizer, be very careful that you don't leave the valve open unless either your sample is in place or the valve is closed.

#### Manual

1. Press refrigerator **MAN**
2. Press **VACUUM** when temperature  $\leq -40^{\circ}\text{C}$ 
  1. Add samples when vacuum is  $\leq 133 \times 10^{-3}$  mbar
  2. To turn off: Break vacuum first. Press refrigerator **MAN** and press **VACUUM**
  3. **If there are samples already on the machine**, put your sample on the valve and open the valve. When you are done, close the valve and remove your sample. If **there are other people using the lyophilizer**, be very careful that you don't leave the valve open unless either your sample is in place or the valve is closed.

#### To defrost

1. Check to be sure drain plug is in place.
2. Turn off lyophilizer and let it sit o/n with lid to the side, this is usually long enough for the ice on the condensor to melt.
3. After defrost, clean and dry condenser chamber and drain the water.