# OWNER'S MANUAL
## OF HOME FREEZE DRYER

# CONTENTS





# PRECAUTIONS

Thank you for purchasing our Household Freeze Dryer. The freeze dryer is very intelligent, it knows how to perfectly freeze and dry your materials and food. Once set up, you can simply place your products inside and press start. The entire freeze-drying process is fully automatic. When your batch of products is dry, the freeze dryer will beep to let you know it's finished.

Please do not bypass the freezing cycle of your freeze dryer. Doing this will void the warranty on your vacuum pump. Let the freeze dryer do its job; your end product will turn out better and your vacuum pump will last longer.

# UNPACKING

You should have taken the box off the freeze dryer and inspected for damage at the time you received your unit, before you signed the Shipper's Bill. Do not accept a damaged unit.

You should have received the following items:

- Freeze Dryer
- Vacuum Pump
- Power Cord
- Vacuum Hose
- Vacuum Pump Oil
- Shelving Unit
- Trays
- Scoop
- Owner's Manual
- Oil Filter
- Other materials, not listed here, may have been included

1. Remove the freeze dryer, vacuum pump, vacuum hose, and power cord from the packaging.
2. Check all items.
3. Remove the vacuum pump from the packaging and place it beside or behind the freeze dryer.

> ⚠ **CAUTION:** Do not lift the freeze dryer from the bottom of the door. Doing this may cause misalignment and inability to achieve proper vacuum, and voids the warranty. Always lift the freeze dryer from the base.

## WARNING:

- Electrical shock can cause personal injury or death.
- This device is designed for indoor installation only.
- Do not allow the device to become clogged with dust or other debris.



# GENERAL INFORMATION

## MAJOR COMPONENTS

**Power Switch:** located on the back of the freeze dryer ("0" for off, "I" for on).

**Vacuum Chamber:** This circular chamber includes a shelving unit for the trays. The orange heating pad on the shelf should face down.

**Tray:** Used to store materials to be freeze-dried. Do not overload the trays, otherwise, the processing time will be extra long.

**Power and Display:** The freeze dryer is powered by plugging the power cord into the back of the freeze dryer (one socket for the power cord and one for powering the vacuum pump) and a standard 220-volt (110V for North American version) power outlet.

**Vacuum Pump:** Connect the vacuum hose to the connection on the side of the freeze dryer and to the appropriate fitting on the vacuum pump. The vacuum hose should be tight. Be sure to hand tighten both ends of the vacuum hose to properly connect the freeze dryer to the vacuum pump. Plug the vacuum pump power cord into the receptacle on the back panel of the freeze dryer. Make sure to add the right amount of oil to the vacuum pump as specified in the manufacturer's instructions. Make sure the vacuum pump "on/off" switch is set to the "ON" position ("O" is off, "I" is on). It will not receive power until the freeze dryer completes the circuit at the appropriate time in the freeze drying process.

**Oil Demister:** The black cylinder attached to the top of the vacuum pumps that use machine oil.

**Drain Line:** This is a clear tube, located on the side, toward the bottom-back of the freeze dryer. This tube should be placed in a drain or a 5-gallon bucket (or similar container) to collect the water removed during freeze drying (collects as ice on the sides of the vacuum chamber). Don't open the drain valve with the open end of the clear hose in water or the water will be sucked into the freeze dryer.

Before you start a freeze drying cycle make sure the valve on the drain tube is closed. The small handle on the valve should be perpendicular to the tube.

# IMPORTANT SAFTGUARDS

## SAFETY INFORMATION

Before using the Freeze Dryer, please read all instructions carefully. Following these instructions will help prevent injury and damage to the freeze dryer, and will ensure you have the best possible experience with your freeze dryer. Please save these instructions.

When using this appliance, take basic safety precautions, including the following:

- Use this product only for the intended purposes as instructed in this Owner's Manual.

> ⚠ **WARNING:** Do not use extension cords when plugging in the freeze dryer into your power source. Most extension cords cannot handle a sufficient draw of power and may melt or deform causing a fire or other damage. .

- Do not use surge protectors or plug your freeze dryer into a GFI outlet. These sources are very sensitive and may cause your freeze dryer to unnecessarily trip the power breaker.
- Do not allow children to climb, stand on the freeze dryer, or hang on the door or shelves. They could damage the freeze dryer and injure themselves.
- After your freeze dryer is in operation, do not touch the cold surfaces during the freezing cycle, particularly when hands are damp or wet. Skin may adhere to these extremely cold surfaces.
- Do not store or use gasoline or other flammable vapors and liquids in the vicinity of the freeze dryer.
- Keep fingers out of "pinch point areas". Clearances between the doors and closing mechanism are necessarily small. Be careful closing doors when children are in the area.
- Unplug your freeze dryer before cleaning or making repairs. We strongly advise that service be done by a qualified individual.
- Refrigerants: All refrigeration products contain refrigerants, which under federal law must be removed prior to product disposal. If you choose to dispose of an old refrigeration product, check with the company handling the disposal about what to do.
- This appliance is not intended for use by small children or infirm persons without capable, adult supervision. Children should be supervised when using the appliance.
- Do not use a wet or damp cloth when cleaning the plug at the end of the power cord. Remove any dust or foreign matter from the power plug pins. A dirty power plug can increase the risk of fire.
- Do not block vent air holes. If the air holes are blocked, the freeze dryer could overheat. Keep vents clean.
- Never unplug your freeze dryer by pulling on the power cord. Always grip the power plug firmly and pull straight out from the outlet. Pulling on the power cord could cause a fire and/or electric shock. A damaged power cord must be replaced by the manufacturer, a certified service agent or qualified certified service personnel.
- Use caution when putting your hands under the appliance. Any sharp edges may cause personal injury.
- Do not insert the power plug with wet hands. It may cause electric shock. In general, power consumption will average between 9-11 amps of power and spike near 16 amps. Usage of a dedicated 20 amp circuit will prevent power outages and allow for proper freeze drying.
- Do not defrost your freeze dryer with a blow dryer or other heating device. There is a thermal cutoff that protects the machine and the material inside the chamber from overheating. If the thermal cutoff gets too hot, it will eliminate all power to your shelf heaters and will need to be replaced with appropriate parts.
- Do not run the freeze dryer when the room temperature exceeds 40.5ºC (105ºF). Doing so will void the warranty. The freeze dryer records ambient room temperature during each batch. If it is found that batches are being run in temperatures that exceed 40.5ºC (105ºF), your warranty will be voided.

## NEVER OPERATE THE FREEZE DRYER IF IT APPEARS DAMAGED

If it falls or is damaged in any way, call customer support immediately for inspection, repair, electrical or mechanical adjustments, or possible replacement of parts.

## BE CAREFUL ABOUT WHAT YOU PUT IN YOUR FREEZE DRYER

The freeze dryer is used to freeze dry materials or products containing water. Freeze drying other materials may void the warranty and could damage the freeze dryer.

## VACUUM PUMP RUNS HOT

Use caution when running your freeze dryer as the external vacuum pump can reach 70°C (160°F) during operation. Keep your vacuum pump out of the reach of children as it may cause injury if touched. Your vacuum pump is built to run hot. Use care and caution in order to prevent injury.

## RECOMMENDED OPERATING TEMPERATURES

Your freeze dryer is designed for various ambient temperatures, but extreme high and low temperatures can affect its performance. The recommended operating temperature range is 0 to 32℃ (35-90℉), with the most effective range being between 10 to 25℃(45-75℉).

Although safe, operating the freeze dryer above 32℃ (90℉) will increase batch times and may have adverse effects on the condensing unit (freezer). Do not run the freeze dryer when the room temperature exceeds 40.5℃ (105℉).

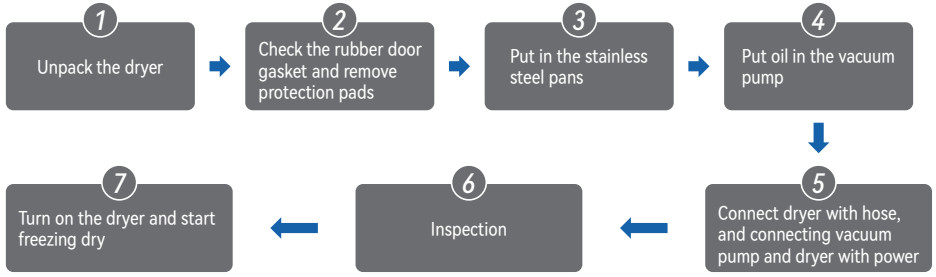
As the temperature rises where your freeze dryer operates, so does the length of time it takes to finish. This happens because with hotter operating temperatures it is harder to reach the extreme cold required for freeze drying. When running your freeze dryer in temperatures higher than 32℃ (90℉), place a small fan in a location where it can blow air on the vacuum pump. This will help the pump run more efficiently and may increase the life of the vacuum pump.

For example: a batch that normally takes 24 hours to finish in a 25℃ (75℉) environment could take over 40 hours to complete in hot temperatures.

# FREEZE DRYER ASSEMBLY

## ASSEMBLY INSTRUCTIONS

Wait 24 hours before running your freeze dryer in order to facilitate proper settling of the refrigerant within the condensing unit.




1. Once unpacked, place the freeze dryer on a level and stable surface. The ideal location for operating the freeze dryer is in a cool, dry, and clean environment. Dirty air can clog the fins of the condenser coil and reduce the lifespan and efficiency of the refrigeration system. Ensure that the side vents of the freeze dryer are unobstructed to allow proper airflow during use.

2. Check the Rubber Door Gasket and Remove Protection Pads: Check the rubber door gasket, to make sure it is clean. Take out the protection pads as shown in Figure 2. Make sure the inside of acrylic door is clean. Use only dry cotton cloth and warm water, no cleaners.

*Figure 1*

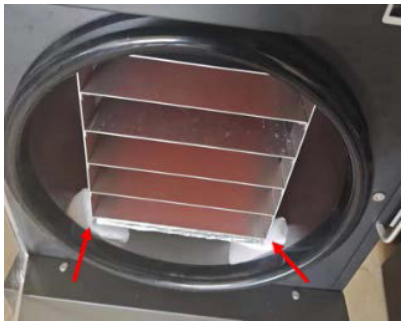


*Figure 2*

3. Remove the Stainless Steel Tray Packaging: Take out the stainless steel trays, remove the outer packaging, wash them clean, and set aside for later use.

4. Put Oil in Your Vacuum Pump: Open the vacuum pump packaging, take out the vacuum pump, and unscrew the oil demister on top of the pump. Fill your vacuum pump slightly above the center of the sight glass and replace the cap (see Figures 3-5).

*Figure 3*

*Figure 4*

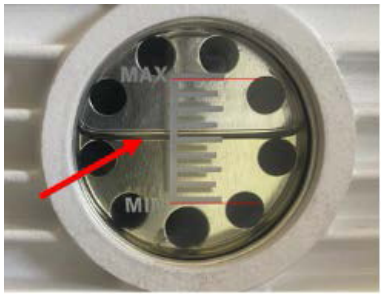



*Figure 5*

**5.** Hose and Wire Connection:

**5-1.** Connect the hoses to the freeze dryer (Figure 6) and the vacuum pump and tighten (Figure 7). Hand tightening is generally adequate, but you may gently use pliers or vice grips, as required. Do not add any additional Teflon tape, or any type of adhesive, when installing the vacuum hose. Doing this usually creates a vacuum leak because it interferes with the O-ring in the hose.

*Figure 6*

*Figure 7*

**5-2.** Connect the freeze dryer power cord to the receptacle on the rear panel of the freeze dryer and to a 220V (110V for North America) outlet.

**5-3.** Connect the power cord of the vacuum pump to the receptacle on the back panel of the freeze dryer. (See Figure 8 for socket location).

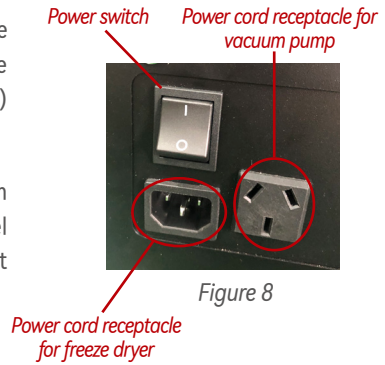



*Figure 8*

**6.** Inspection:

**6-1.** Make sure the power switch on the vacuum pump is in the "ON" position ("O" for off, "I" for on). The power button is located on the back of the oil vacuum pump. (See Figure 9).

**6-2.** Secure the door latch to create a good seal. The door latch is a two-stage handle. The first stage locks the door, and the second stage tightly compresses the door to the rubber gasket. Turn the handle as far to the right as possible. Do not apply too much force. Don't break the door latch.



**6-3.** Make sure to close the drain valve on the freeze dryer, located on the side, toward the bottom back of the freeze dryer. When in the closed position, the small handle on the valve should be perpendicular to the direction of the drain pipe (Figure 10). If the drain valve is not closed, there will be a vacuum leak which could damage your vacuum pump and void the vacuum pump warranty. Be sure to place the open end in a 5-gallon bucket, drain, or similar container, to collect the water that is removed during the freeze drying defrost process. Be sure to keep the hose out of the water, as it will suck water into the chamber.


*Figure 9*

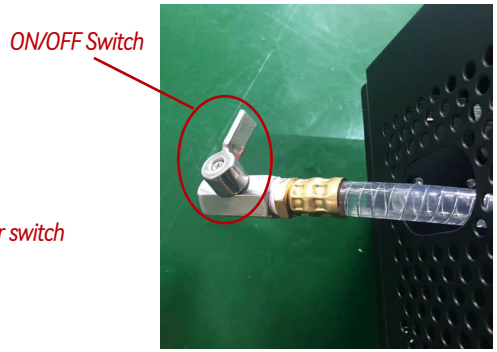



*Figure 10*

**6-4.** Ensure that the acrylic door makes contact with the rubber gasket by examining the door in the fully closed position. You will see a thin line in the middle of the gasket (that goes partially around the gasket) as it presses up against the door. When the pump turns on, make sure the door fully seals against the gasket. 6.5 As described in previous steps, it is your responsibility to make sure the door is closed properly, the drain valve is closed, and the hose connecting the vacuum pump to the freeze dryer is connected. The successful functioning of the vacuum pump depends on these steps being performed properly.

**7.** Turn on the power switch:

You are now ready to start your first batch. Set the switch to "on" ("O" indicates on, "I" indicates off) to turn on the freeze dryer. The ON/OFF switch is at the back of the freeze dryer. To perform a quick test and ensure that the freeze dryer is set up correctly, complete the following steps. To accomplish this task, the freeze drying chamber must be free of any moisture or wet substances, such as water or condensate. It needs to be completely dry.

## IMPORTANT INFORMATION ABOUT YOUR FIRST BATCH

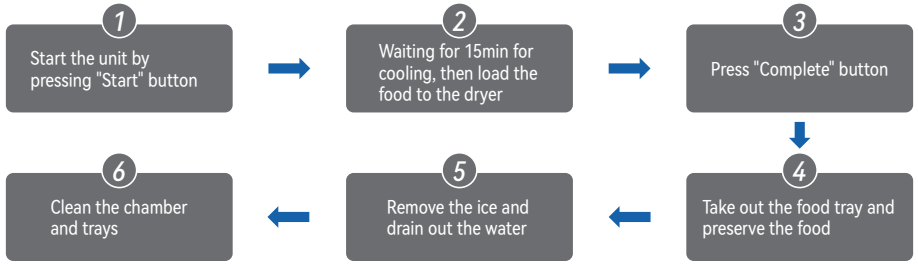
Throughout the freeze drying process, the system will monitor the cooling, vacuum, and heating functions. If it detects a problem, it will provide information to help you resolve the issue. While waiting for you to respond to the error message, the system will attempt to resolve the issue itself. If it is successful, it will no longer display an error message and continue processing the batch.

New freeze dryers need to have a one batch burn in period. That means, you should fill the freeze dryer with moist bread slices and freeze dry it. After the bread is finished, test it for dryness and throw it away. This way you can make sure your freeze dryer is working properly and it will help remove any manufacturing “new car” type smell.

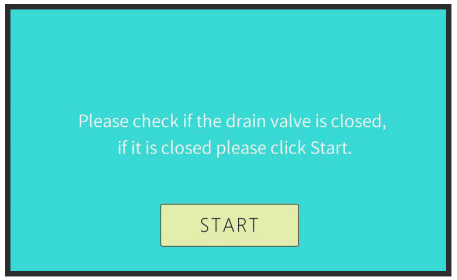


# FREEZE DRYER OPERATION

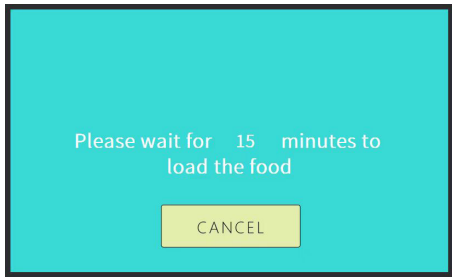
## OPERATING INSTRUCTIONS




1. From the startup, press “START”. Before starting, check the drain valve to ensure it is closed.

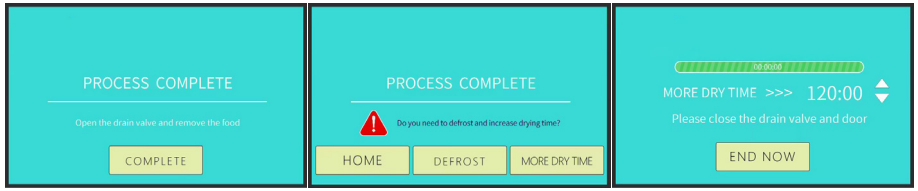



2. After 15 minutes of cooling, fill the trays with food and load them to the cabinet (for optimal freeze-drying results, slice vegetables and fruits to a thickness of around 5mm), and close the door.



3. The equipment enters the automatic operation stage. After running automatically for 16-24 hours, the freeze-drying process ends, indicated by a "beep" sound.


4. Click "COMPLETE" and open the drain valve. After balancing the internal and external pressure, open the freeze dryer door. Check if the freeze-dried fruits and vegetables are dry. If additional freeze-drying time is needed, press "MORE DRY TIME". By default, each press increases drying time by 2 hours, but you can manually increase or decrease the time.




5. After completing freeze-drying, remove the freeze-dried items and promptly place them in sealed glass jars for storage. The freeze-dried products have minimal moisture content inside. They may absorb moisture if exposed to air for an extended period.

6. After completing the freeze-drying cycle, you can click "DEFROST" or "HOME". During the defrosting process, the heating of the material tray melts the ice on the chamber wall. Please close the door and avoid touching the material tray to prevent burn. Open the drain valve to promptly discharge any water from the freeze dryer.


7. After use, clean the surface of the freeze dryer, the inner walls of the stainless steel chamber, and the stainless steel trays to ensure the longevity of your freeze dryer.



# A CLOSED SYSTEM

## WHAT IS A CLOSED SYSTEM

In order to freeze dry items, your machine will use a vacuum pump that removes the air and creates a vacuum environment. In order to achieve adequate vacuum pressure, it is VERY IMPORTANT to ensure that all valves are closed tightly. If there is a leak somewhere in the system, the freeze drying process will not occur.

⚠ **WARNING:** You may think there is not an air leak in your machine because the door will not open (a sign that you are pulling a vacuum). However, it is possible to achieve less than suitable vacuum pressure, yet have enough vacuum to hold the door closed. Check if there is any leak point. Make sure the drain valve is closed and the door gasket is sealing properly (clean gasket with warm water, let dry, and reinstall–do not wipe dry because lint may prevent a good seal). While every precaution has been make to ensure that there are no leak points in your vacuum system, a situation could arise where there is a leak point. It is important to check the following possible leak spots in order to achieve optimal freeze drying.

## POSSIBLE LEAK POINTS ON THE VACUUM PUMP

- Vacuum pump hose connections
- Vacuum pump oil is contaminated
- Vacuum pump oil level is too low
- Gaskets in the vacuum hose are damaged

For additional information about your vacuum pump, review the instruction manual that came with your vacuum pump.

## POSSIBLE LEAK POINTS ON THE FREEZE DRYER

- Drain valve is open
- Vacuum pump hose not connected properly or tightly
- Door not properly shut (2 stages of closing, latch and compression against gasket)
- Door gasket not clean inside and out
- Door needs adjustment

# OIL PUMP MAINTENANCE

## STANDARD OIL PUMP MAINTENANCE

We recommend you change and filter your oil every 10 batches (or sooner if the oil is cloudy) in order to ensure high vacuum performance and to increase the life of your vacuum pump. After every fourth batch of use, a notification for oil change will appear on the main screen. Once a new batch is started, the notification on the screen will disappear.

For optimum performance of your vacuum pump do not bypass the the freezing cycle of your freeze dryer. For shorter freezing cycles you may pre-freeze the products until they are frozen solid before placing them in the freeze dryer but still do not bypass the freezing cycle. The unit is intelligent. It will only freeze to the temperature it needs in order to adequately dry a batch. Freeze drying products that have even a little non-solid moisture in them will reduce the performance and the life of the vacuum pump.

DO NOT overload the trays in the freeze dryer. Too much product will produce too much evaporated moisture which may exceed the ice capacity inside the vacuum chamber and cause the vacuum pump to suck in the excess moisture. This may affect the performance and shorten the life of the vacuum pump.

## OIL CHANGE

1. Turn off the vacuum pump.
2. Locate the drain valve for the oil reservoir located at the bottom, front of the pump (as shown in the diagram). Make sure it extends past the edge of the table or cart.
3. Place the oil filter underneath the drain valve to collect the oil.
4. Open the valve.
5. Drain the oil from the vacuum pump into your filter.
6. Elevate the back of the pump and drain the remaining oil from the drain valve. Once all the oil is drained, close the drain valve.
7. Using new or filtered oil, refill the oil reservoir to the appropriate level.
8. Turn the vacuum pump switch back on.


## OIL FILTRATION

1. Approximately every 10 batches (preferably when the oil is still warm), place the oil filter below the oil reservoir drain valve.
2. Open the oil reservoir drain valve and allow oil to drain into your oil filter. Assure all of the oil comes out by lifting the rear of the vacuum pump slightly.
3. Wait for the oil to filter through your filtration system (this could take a couple of hours).
4. Remove the water from the oil by pouring off the oil and discarding the water. Do not pour the water back into the vacuum pump.
5. Pour the filtered (or new) oil into your vacuum pump.
6. Start your freeze dryer.

## COMMON FILTERING ISSUES

**How do I know if my filtered oil is clean?**

The best indicators of cleanliness are as follows:

- The oil is transparent (it may have a yellow or amber color, but remains transparent).
- Your vacuum pump reaches the pressure suitable for freeze-drying.

**How do I know when I need to replace the oil filter?**

- Oil does not pass through the filter (over time, debris accumulates).
- The oil appears relatively murky.


Normal


Need to change


Not allow to use

The oil filter can be used approximately 20-30 times (but if the oil looks dirty, it may need to be replaced sooner). Please refer to the diagram above.

# CARE AND CLEANING

## CLEANING THE INTERIOR AND EXTERIOR OF THE FREEZE DRYER

**Interior:** First unplug your freeze dryer from the wall. Clean the vacuum chamber and shelves with a mild detergent and then wipe dry with a soft cloth. Remove shelves for a thorough cleaning. In order to remove the shelves, you will need to take off the black rubber gasket that the door seals against. Gently pull out the shelf. Then disconnect the cable. Once the red tab is unlocked, press the black tab down and pull the two pieces apart. When finished cleaning, ensure that the shelves and chamber are dry. Next, reconnect the power line to the shelving unit.

It is important to clean the chamber and the shelf on a regular basis. It is necessary to do this by hand. You can put the shelf in a large sink and wash it with dish soap, brushes and rags; however, a dishwasher can get so hot that it will melt the glue and cause the heating pads to loosen and fall off.

Using a dishwasher to wash shelves will void the freeze dryer warranty.

**Exterior:** The outer door, handle, and cabinet surfaces should be cleaned with warm water and a mild detergent and then wiped dry with a soft cloth.

## CLEANING CAUTIONS

Do not use hard bristle brushes or sandpaper/pads to clean the interior or exterior of the freeze dryer, as this may dull or scratch the surface. Do not use chemical agents such as benzene, solvents, or alcohol for cleaning. They may damage the surface of the equipment and could even cause a fire.

## MOVING OR LONG ABSENCES

If you have a long vacation planned, or if the freeze dryer is not in use for an extended period of time, empty the freeze dryer and keep it turned off. Wipe any moisture from the inside and leave the door open to keep odor and mold from developing. Drain the pump and fill with fresh oil. If dirty oil is left inside the pump when it is not in use, it will corrode the internal parts and could cause premature failure.



# TROUBLESHOOTING

## FREQUENTLY ASKED QUESTIONS

**Why has the freeze dryer been running for over 46 hours and the process is not complete?**

Warmer temperatures will affect your freeze drying times. If your freeze dryer is in an area that gets hot, such as your garage, you should expect longer batch times. If temperatures exceed 90 degrees in the area you are freeze drying in, you may want to purchase a fan and have it blow on your vacuum pump. There are a number of factors that can contribute to longer cycle times. Some of which may be a combination of the following:

1. Some items are more challenging to freeze dry than others. Because of their cellular structure, sugar, and moisture content, oranges, pineapple, strawberries, blueberries, and other foods/meals with high amounts of sugary liquid may take longer to freeze dry. The freeze dryer is measuring the removal and moisture and knows when the process is complete.
2. There is so much water in the material being dried that the condensed ice on walls of chamber has begun to encroach on the trays. While rare, if this occurs, the freeze dryer cannot recognize that the process is complete because it will sublimate the ice that is coming onto the trays. If this happens, remove the trays and put them in the freezer, defrost the ice in the freeze dryer, put the trays back in the freeze dryer, and allow it to finish the process.
3. The Standard Vacuum Pump oil should be changed and filtered every 4-5 batches (sooner if the oil is cloudy).
4. The freeze dryer is working properly if during the drying portion of the freeze dry cycle, the vacuum is working properly without any leak point.

**After my freeze dry cycle finished and I released the drain valve, water came rushing into my vacuum chamber. What happened?**

Make sure to empty the container that your freeze dryer drains into. If the drain hose is sitting in water when the vacuum is released by opening the drain valve, water will suck through the drain hose and into the freeze dryer vacuum chamber like a giant straw.

**We had oil spray out of our vacuum pump, what is happening?**

1. It is likely that air is leaking into your freeze dryer chamber (or the vacuum pump is over-filled). This can happen if the drain valve is accidentally left open, the door isn't clean/aligned properly, the door seal isn't clean, or the vacuum hose is not completely tight on both ends. It can also occur if all of the caps/fittings on the pump aren't tight. These are the most common reasons for an oil spray.
2. The oil level is too high. It may have been over-filled or because of water vapor coming through the vacuum hose and condensing as liquid into the oil (it is important to drain this water out of your vacuum pump and discard it so that you can preserve the life of your oil as well as prevent an oil spray).

**When the process is complete, sometimes the shelves are warm and sometimes they are cold. Why?**

When the process is finished, the "COMPLETE" screen will appear. The shelf heaters and the vacuum pump turn off. The refrigeration unit will continue freezing until you stop the process or press "DEFROST".

If you remove the food/material immediately after the process finishes, the trays will be warm. If you wait for an hour or longer, they will be very cold. Hot pads or gloves should be worn to remove these cold trays.

Test that the product is completely dry by breaking the thickest piece to check for ice. If it is cold or wet in the middle, there may be a bit of moisture remaining. If this is the case, add "MORE DRY TIME".

**I packaged my food and it was very dry when it came out, but now it is not dry. Why?**

1. Properly packaging the freeze-dried material is vital. It is important to promptly package your freeze-dried product. When packaging food, you can use Mylar bags (in order to seal thoroughly, we recommend you seal the bags twice to be safe), #10 cans, or mason jars. Always use the appropriate oxygen absorber. To ensure long shelf life, store in a cool, dry location.
2. Occasionally, all of the product will be perfectly freeze dried with the exception of a couple of pieces. This can happen if you cut a few pieces of your product much thicker than the rest. If packaged, one wet piece will rehydrate and ruin the whole batch. When a batch is complete, it is a good idea to break the thickest piece on your trays in half and test it in order to be sure that the product has completed the drying process. If you find that the material is not completely dry, simply put it back in the freeze dryer and press "DRY MORE TIME" to get right back into the vacuum pump/drying portion of the freeze dry cycle. The freeze dryer will then finish the pieces that weren't quite complete.



## PUMP ISN'T TURNING ON DURING THE DRY CYCLE

Make sure your pump is plugged into the back of the freeze dryer and is switched to the "ON" position. The freeze dryer controls the pump turning on and off, but it cannot do so unless the pump is switched on (switch is located on the back of the pump) and plugged into the freeze dryer.

# LOADING AND PACKAGING FOOD

## GUIDELINES FOR LOADING THE TRAYS OF YOUR FREEZE DRYER

- Fruits such as apples, bananas, peaches, pineapple, strawberries, and raspberries should be placed in one layer across the trays. The fruit slices may be placed close together, but should only be one layer deep.
- Fruit should be sliced and the skin side (if it is kept on) should be placed down on the tray with the cut side up. Pieces may be thickly sliced; however, if they are thick, they will take longer to dry. For instance, some people just cut strawberries and apricots in half and place them skin side down on the trays.
- Liquids are a little tricky to get in the freeze dryer. When freeze drying runny liquids such as raw scrambled eggs, milk, soup and so on, it is best to place the empty trays in the freeze dryer and then while partly pulled out, pour the liquid onto the trays. Once filled, gently slide the trays into the freeze dryer.
- Again, the thicker something is, the longer it will take to dry.
- Things like blueberries and grapes need to be cut so that the water can escape through the skin.
- Casseroles and pastas (such as beef stroganoff, mac and cheese) may be spread thickly across the trays. In general, foods should not be higher than the sides of the tray.

## PACKAGING FREEZE-DRIED MATERIAL INSTRUCTIONS

Customers should prepare the package material for the freeze-dried food. We recommend to use the aluminum foil sealing bag or sealing jar. Or storage the food with an oxygen absorber and packed by Mylar bags sealed with sealer.

The following are things to consider:

1. When you open a pouch of oxygen absorbers, they need to be used immediately. Therefore, you should not open your oxygen absorbers until your freeze-dried material is in the bags and is ready to be sealed.
2. Immediately reseal your bag of oxygen absorbers. And, immediately seal your bags that have the absorbers in them. The setting for sealing the bags of oxygen absorbers is less than for the Mylar bags. To seal bags of oxygen absorbers use setting 5 on your Harvest Right sealer.
3. A chemical reaction takes place when the oxygen absorber is in the open air. During this process, the oxygen absorber package will get hot. This is normal. However, if you leave the oxygen absorbers in the open air too long they will get hot before you seal them in Mylar bags and they may not work.
4. When you are sealing your bags, try to press all the air out of them before you seal them.
5. There should be no folds in the seal of your bags. If you seal a fold, it likely will allow air in and spoil the food in the package.