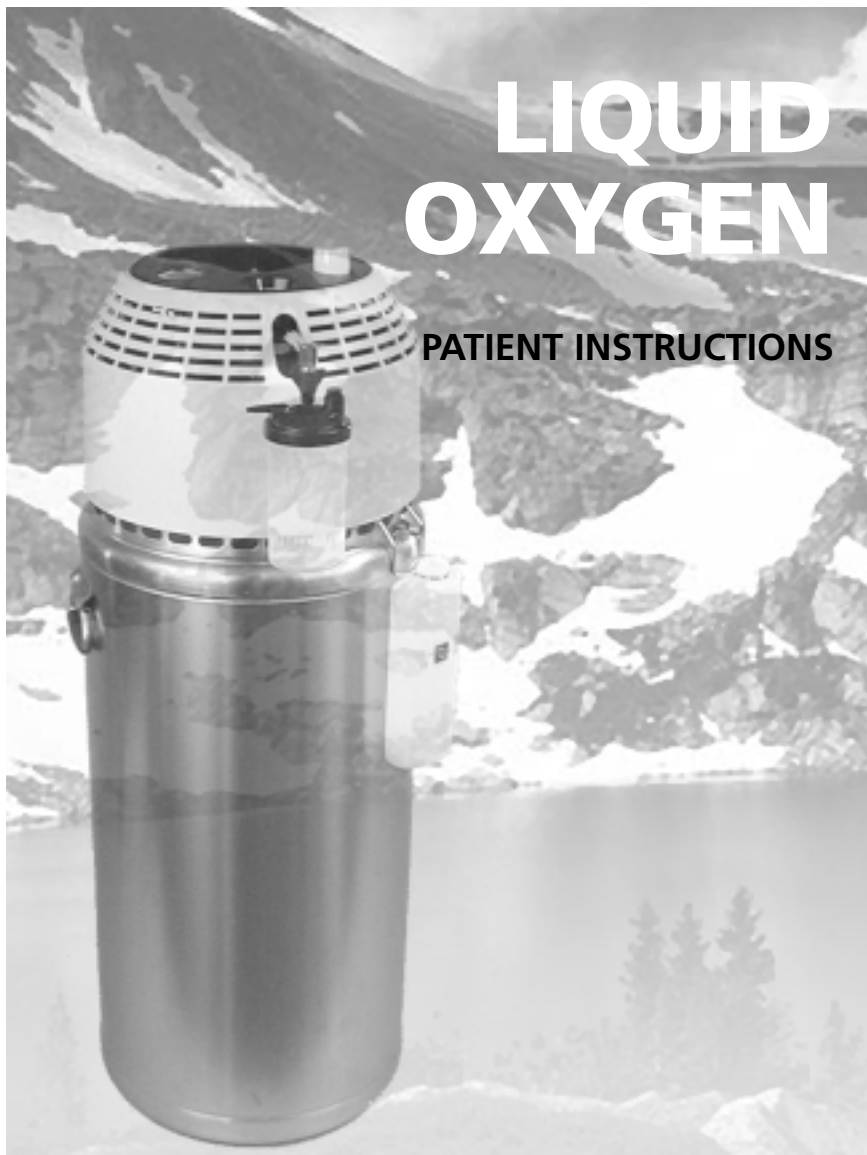


LIQUID OXYGEN

PATIENT INSTRUCTIONS



**WRIGHT
&
FILIPPIS**

www.FirstToServe.com

YOUR LIQUID OXYGEN SYSTEM

When oxygen is cooled to a very low temperature (around 300 degrees below zero, Fahrenheit), it becomes a liquid. In the liquid form, large amounts of oxygen can be stored in a container at quite a low pressure. This provides not only a large storage capacity, but also allows for filling and refilling of a smaller unit from the large unit.

To remain in liquid form, the oxygen must continue to be kept very cold. Therefore, the units in which the liquid oxygen is stored are insulated canisters, similar to large thermos bottles. As the liquid oxygen leaves the container, it warms up to room temperature and becomes a gas again.

A liquid oxygen system usually includes two units: a **stationary reservoir** and a **portable unit**.

YOUR STATIONARY RESERVOIR

The liquid oxygen stationary reservoir is a large unit. The stationary reservoir can store over 75 pounds of liquid oxygen. For most patients, this will last from four to eight days.



Stationary reservoirs are available in different sizes and models. However, all models have the same basic parts: a **contents indicator** that shows the amount of oxygen in the unit, a **flow selector** that regulates the amount of oxygen you receive, a **filling connector** that allows the portable unit to be filled, and if recommended, a **humidifier bottle**.

The oxygen is delivered to you through a nasal cannula or facemask. The tubing on the cannula or mask is attached to the outlet on the flowmeter. Sometimes, an extra length of tubing may be attached. This will allow you to move about at a farther distance from your stationary reservoir.

OPERATING YOUR STATIONARY RESERVOIR

The following step-by-step instructions will help you operate your stationary reservoir:

Step 1: Although most reservoirs have a built-in flowmeter, some models may require that the flowmeter be attached to the reservoir outlet tube. If your model requires a flowmeter, attach it by turning the threaded cap onto the outlet **tube** until it is tight.

Step 2: *If recommended, attach a filled humidifier bottle.*

Center the threaded cap on the humidifier bottle under the threaded outlet tube on the reservoir. Turn the cap on the humidifier bottle until it is tightly screwed onto the outlet tube. Attach the oxygen tubing to the nipple outlet on the humidifier bottle lid.

NOTE: Humidifier bottles are generally recommended only for patients using flow rates greater than four liters per minute.

Step 3: *If you are not using a humidifier bottle, you should attach a nipple valve to the reservoir outlet tube and attach the oxygen tubing to the nipple outlet.*

Step 4: *Adjust the oxygen flow rate by turning the liter control knob until the flow is at the prescribed number.*

Rotary Flow Control

Turn the dial until the prescribed liter number appears and the switch clicks into position.



Flowmeter with Liter Tube

Adjust the liter control knob until the middle of the indicator ball is at the prescribed number. Your doctor has prescribed the oxygen flow rate for you.

Never change this liter flow without instructions for your doctor. If you are confused about the prescribed setting, please consult your physician or Wright & Filippis immediately.

Step 5: *Fit the nasal cannula or the oxygen mask to your face so that it is comfortable.*

Nasal Cannula

Insert the two prongs of the cannula into your nostrils. Make sure the prongs face upward and curve into your nostrils. Slide the tubing over and behind each ear. Adjust the tubing to fit comfortably under your chin by sliding the adjuster upward. Be careful not to adjust it too tightly.

NOTE: Do not use an oxygen mask if your doctor prescribed a nasal cannula.



Oxygen Mask

Place the oxygen mask over your mouth and nose. Slide the loose elastic strap over your head and position it above your ears. Pull the end of the elastic on each side of the mask until the mask fits comfortably. Pinch the metal nose strap to fit snugly around your nose. This will prevent oxygen from blowing into your eyes.

Step 6: *You should use your oxygen for the number of hours your doctor has prescribed.*

When you have finished using your oxygen, you should:

- Remove the nasal cannula or oxygen mask.
- Turn the liter control knob OFF.
- You should also check the amount of oxygen remaining in your stationary reservoir daily so you know when to order a refill.

Needle Gauge

The position of the needle will tell you approximately how full your reservoir is. You may have to push a button on the top of the unit so the face of the gauge lights up and the needle registers.



Bar Gauge

Depress the red button on the top of the reservoir. Read across the top of the lighted bar to the scale at the right.

Weight Scale Base

The position of the metal pointer on the scale under your reservoir will tell you approximately how full your reservoir is.

CONTENTS GUIDE: STATIONARY UNIT

Your oxygen flow is measured in liters per minute (LPM). Average oxygen usage time is based on **continuous** flow rate. These figures are **approximate** and are to be used only as a **general guide**. Individual usage time may vary.

If you are at all confused about when to order an oxygen refill, please contact Wright & Filippis.

STATIONARY RESERVOIR			
Approximate Time in Hours			
Liter Flow	Puritan-Bennett Companion 21	Puritan-Bennett Companion 31	Puritan-Bennett Companion 41
1	288	425	562
2	144	212	281
3	96	141	187
4	72	106	140
5	57	85	112

YOUR PORTABLE UNIT

The portable liquid oxygen unit is a small unit, which is intended to be used during ambulation and other activities outside the home. Depending on the size, the portable unit weighs seven to ten pounds when full, and will provide four to eight hours of continuous oxygen for most patients. **Actual times will vary depending on your liter flow.**

The portable unit can simply and conveniently be filled from the stationary reservoir. The unit is carried by means of a shoulder strap or light-weight, wheeled cart. Portable liquid units are available in different sizes and models but all have the same basic parts: a **flow control knob** which provides the

desired flow of oxygen, an **oxygen contents gauge**, which tells you approximately how much oxygen remains in the unit, a **filling connector** which allows you to attach the portable unit to the stationary reservoir for refilling, an **oxygen outlet** to which your **oxygen tubing**

attaches, and a **shoulder strap** which allows you to comfortably carry your unit.



OPERATING YOUR PORTABLE UNIT

The following step-by-step instructions will help you operate your portable liquid oxygen unit.

Step 1: Check the amount of liquid oxygen in your unit. When the portable unit is not in use, the liquid oxygen it contains will evaporate within 24 hours. Be sure your unit has enough oxygen in it to accommodate your expected usage time. If you are unsure, contact your Wright & Filippis respiratory department.

Needle Gauge

The position of the needle will tell you approximately how full your unit is. You may have to press a button to light up the meter face and cause the needle to register.

Bar Gauge

Press the red button on the top of the unit. Read across the top of the lighted bar to the scale at the right.

Step 2: Attach the oxygen tubing to the oxygen outlet on the side of the unit.

Step 3: Adjust the oxygen flow by turning the knob until the prescribed liter number appears and the switch clicks into position. **Be sure not to set the control knob between number positions or no oxygen will flow.** Your doctor has prescribed the oxygen flow rate for you. **Never change this liter flow without instructions from your doctor.** If you are confused about the prescribed setting, please consult your physician or Wright & Filippis immediately.

REFILLING YOUR PORTABLE UNIT

To refill your portable liquid oxygen unit from the stationary reservoir, follow the steps below.

Step 1: Wipe the filling connectors on both the portable unit and the stationary reservoir with a clean lint-free cloth. These fittings must be dry. Moisture could cause the units to freeze together.

Step 2: Turn the flow control knob on the portable unit OFF.

Step 3: Attach the portable unit to the stationary reservoir at the filling connectors. Some units refill from the side of the reservoir, while others refill at the top of the reservoir.

Side Mount Refill

Tilt the portable unit counter-clockwise to a 45-degree angle. Insert the portable unit connector into the reservoir connector. Rotate the portable unit clockwise to an upright position until the pin locks into place. You should not have to force it to rotate.

Top Mount Refill

Center the portable unit connector over the reservoir connector.

Lower the unit into the shaped recess or onto the connector. Once the unit is resting on the connector, hold down firmly until the filling process is complete.



Step 4: Open the fill valve by either pressing the fill button or using a key (depending on your model). This valve is found either on the reservoir or on the portable unit. This will start the filling process. As the unit is filling, you will hear a hissing noise. When the unit is full, the hissing noise will change and



you will see a small cloud of white vapor at the connection.

Always remain with the units while filling. Fill time is approximately two minutes.

Step 5: When the unit is full, slowly close the fill valve.

Step 6: Disengage the portable unit from the stationary reservoir.

If the unit does not separate easily, do not force it. The units may be frozen together. Wait until the units warm up and they will separate easily.

DO NOT TOUCH any of the frosted parts of the connectors. Liquid oxygen can cause frostbite to the skin.

Step 7: Reattach the oxygen tubing to the oxygen outlet on the portable unit. Your unit is now ready for use.

Liquid oxygen will slowly evaporate from a portable unit. To avoid excess waste, fill the portable unit just before use.

Always keep your portable in an upright position. If the unit is accidentally tipped over, you may hear hissing and see oxygen vapor escaping. Place the unit upright immediately.

Always store the portable unit in a well-ventilated area.

CONTENTS GUIDE: PORTABLE UNIT

Your oxygen flow is measured in liters per minute (LPM). Average oxygen usage time is based on **continuous** flow rate. These figures are **approximate** and are to be used only as a **general guide**. Individual usage time may vary.



PORTABLE RESERVOIR			
Approximate Time in Hours (hrs.) and Minutes (min).			
Liter Flow	Puritan-Bennett Companion 500	Puritan-Bennett Companion 550	Puritan-Bennett Companion 1000
1	8 hrs. 30 mins.	13 hrs.	15 hrs.
2	4 hrs. 10 mins.	8 hrs.	8 hrs.
3	2 hrs. 30 mins.	6 hrs.	5 hrs. 18 mins.
4	1 hr. 42 mins.	4 hrs. 36 mins.	3 hrs. 48 mins.
5	1 hr. 18 mins.	3 hrs. 42 mins.	2 hrs. 54 mins.

MAINTAINING YOUR LIQUID OXYGEN SYSTEM

Liquid oxygen units are durable pieces of equipment and will continue to operate efficiently with proper maintenance. As necessary, you should wipe the outside of your units with a clean damp cloth. **NEVER use wax, cleaning sprays or furniture polish.** Many of these products are flammable.

You should NEVER open either of your own units or attempt any repairs on them.

NEVER use grease, oil or other lubricants on your units. Many lubricants are volatile and could cause a safety hazard.

Should you have any problems with your liquid oxygen system at any time, call Wright & Filippis immediately. We have accredited clinicians who are on call 24 hours a day to assist you.



CARE OF YOUR HUMIDIFIER BOTTLE

Cleaning and decontamination of respiratory therapy equipment in the home is of major concern. To prevent equipment contamination, a simple but effective cleaning procedure must be carried out on a routine basis. Do all cleaning and disinfecting in a clean environment. Avoid doing it after vacuuming, under an open window, or in dirty, dusty or smoky areas.

If you are using a humidifier bottle with your oxygen system, you will need to check the water level in the jar frequently. When the water runs low or the bubbling stops, you will need to refill the jar. You should use your backup oxygen system while cleaning and refilling your humidifier bottle.

REFILLING THE HUMIDIFIER BOTTLE

Step 1: Wash your hands thoroughly.

Step 2: Turn your oxygen OFF.

Step 3: Unscrew the jar from the humidifier bottle lid.

Step 4: Discard any water remaining in the jar.

Step 5: Rinse bottle under a strong stream of warm tap water (allow water to run for three minutes before rinsing). Shake off excess water.

Step 6: Refill the jar with distilled water to the fill line. Do not overfill the bottle. Too much water in the bottle will cause water to collect in your oxygen tubing.



Step 7: Screw the bottle back on the humidifier bottle lid until it is tight. Be certain the jar is screwed on straight. Cross threading will cause oxygen to escape out of the top of the jar.

TWICE-WEEKLY CLEANING AND DISINFECTION

It is very important to clean your humidifier bottle to prevent infection. The following procedure should be done every three days:

Step 1: Wash your hands thoroughly.

Step 2: Turn the oxygen OFF.

Step 3: Remove the humidifier bottle.

Step 4: Wash the entire humidifier bottle in a solution of liquid detergent and warm water.

Step 5: Rinse the bottle thoroughly. Shake off excess water.

Step 6: Mix one part vinegar and one part water. Soak humidifier bottle in vinegar solution for 30 minutes.

Step 7: Rinse bottle in warm tap water, allowing water to run for three minutes before rinsing.

Step 8: Allow the bottle to air dry.

Step 9: Discard vinegar solution.

Step 10: Replace your humidifier bottle as instructed.

CARE OF YOUR OXYGEN TUBING

Minimal care is required of your oxygen tubing and nasal cannula or oxygen mask. We recommend that once or twice during the day, you remove the cannula or mask and wipe it clean with a damp cloth. You should discard and replace your nasal cannula or oxygen mask every two weeks. Discard and replace your tubing every 90 days. Do not use alcohol or oil-based products on or near your cannula.

Occasionally, if you are using a humidifier bottle, moisture may accumulate inside your oxygen tubing. If this becomes uncomfortable, you should try the following procedure:

Step 1: Remove the humidifier bottle from the outlet on the concentrator.



Step 2: Attach a nipple adapter to the outlet tube.

Step 3: Remove the oxygen tubing from the humidifier bottle and attach it to the nipple adapter.

Step 4: Allow the oxygen to run directly through the tubing. Within a few minutes, the tubing will be dry.

Step 5: When the tubing is dry, perform the following:

- Disconnect the tubing.
- Remove the nipple adapter.
- Reconnect the humidifier bottle to the liquid oxygen unit.
- Reattach the oxygen tubing to the humidifier bottle.

Step 6: Recheck the liter flow gauge to make sure the oxygen is flowing at the prescribed level.

REORDERING OXYGEN

Always be aware of the amount of oxygen remaining in your stationary reservoir. Reorder oxygen 1 to 2 days before your stationary reservoir has been calculated to run out. This will allow your Wright & Filippis location to schedule your delivery without causing you to worry.

PHYSICAL PROBLEMS

If you are having trouble with your equipment, call Wright & Filippis. If you experience any physical change, call your doctor. If you experience severe physical problems, call EMS.

SAFETY PRECAUTIONS

Oxygen is very safe to use when you create the proper conditions. Oxygen will NOT explode or burn. Oxygen will, however cause anything that is burning to burn hotter and faster. By using the following safety rules, you will create a very safe environment when you use your oxygen.

HEAT

Keep the liquid oxygen unit and oxygen tubing away from any source of heat. Keep the liquid oxygen units and oxygen tubing away from open flames, stoves, space heaters, large windows or any source of heat.

GREASE

Never grease or oil oxygen equipment. Keep liquid units away from all flammable materials, such as oil, grease, Vaseline, hair lubricants, face and hand lotions, and aerosol sprays.



SMOKING

Do not permit smoking in the same room as your oxygen equipment. Place **NO SMOKING** signs on the front and back doors of your residence and also at the entryway to the room where you will be using your oxygen.

It is possible for you to be in a large room, such as a restaurant, where smoking is permitted, as long as no lighted smoking materials are within five feet of your oxygen. Ask to sit in the non-smoking section of the restaurant.

STORAGE

Do not store your oxygen equipment in a small storage area. Do not place oxygen in a storage area such as a closet or car trunk. Any venting oxygen could create a fire hazard.

FACE CREAM/HAIR DRYER/ELECTRIC RAZOR

Never use oil-based face creams, a hair dryer or an electric razor. It is possible in certain conditions that the combination of oxygen, oil-based face creams, and a spark from an electric appliance could ignite and cause burns to your face. Always use water-based cosmetics or creams.

FROST BURNS

Never touch the frosted connectors. Liquid oxygen is chilled to -300° Fahrenheit. If you touch one of the frosted parts on your unit, it is possible that you will receive a skin burn. **If contact occurs, generously flush with cold water and call your doctor.**

MOVING YOUR SYSTEM

Never move the stationary unit without consulting Wright & Filippis.

SPILLAGE

Keep the liquid unit upright at all times.

If your liquid unit falls over on its side, it is possible for a stream of liquid oxygen to spill out of the reservoir. To avoid spillage, keep the stationary unit upright at all times. If a spill occurs, open the doors and windows to ventilate the area and call Wright & Filippis immediately.



HOME ADDRESS

Make sure your home address can be easily seen from the street during both day and night. Check to see that your address numbers are easy to spot and read from the street. If you are expecting a night delivery or visit, turn on the porch light. This allows both Wright & Filippis and emergency services to locate your residence easily.

COOKING SAFEGUARDS

It is best to use a microwave oven or make other arrangements, but if you must cook you can:

Step 1: Secure the cannula over your ears and behind your head instead of under your chin.

Step 2: Secure the oxygen tubing to the side of your clothing, at your waist, with a large safety pin. This method will keep the oxygen tubing away from the source of heat. Do NOT bend down close to the burner.



TRAVEL TIPS

Early planning and careful preparations are the keys to an enjoyable trip. The following tips should help you plan and prepare for any trip.

- Contact your doctor to make sure your proposed trip is medically safe and to obtain additional copies of your prescription.
- Contact Wright & Filippis* for assistance with getting oxygen refills along your driving route or at your final destination.
- Have cash available to pay for oxygen refills or other equipment.

If traveling by CAR/RV:

- Remind the passengers not to smoke in the car.
- Securely fasten tanks.
- Keep one window partially open.
- Do not store oxygen in the trunk of your car.
- Keep liquid oxygen in an upright position.
- In a recreational vehicle, do not store oxygen near gas or open flame.
- Never refill your portable unit inside your car or recreational vehicle.

If traveling by BUS/TRAIN/SHIP:

- Contact the reservation office for specific information about the use of oxygen and special accommodations.
- Most companies require at least 2 weeks notice if you are going to be using oxygen on your trip.

If traveling by AIRPLANE:

- Most companies require at least 4 weeks notice if you are going to be using oxygen on your trip.
- Ask your doctor what flow rate to use during your flight.
- Request a direct flight, if available.
- Most airlines require you to use their oxygen on the plane.
- If there are layovers, ask if the airline will supply oxygen during layovers.
- Ask what the airline will charge for oxygen during the flight.
- Arrange for your oxygen supply at your final destination.

For further information, please contact your local Wright & Filippis branch to assist with your travel arrangements.

* respiratory department

TROUBLESHOOTING CHART

Trouble	Probable Cause	Remedy
No oxygen coming from cannula or mask	Decreased awareness of oxygen flow	Place cannula prongs in clear glass of water. If you observe bubbles coming from your cannula, your unit is working correctly.
	Loose connection	Check each connection from the unit to the cannula to ensure a tight fit. If you are using a humidifier bottle, check to see that it is screwed on tightly.
	Flow control knob is not pointing directly to setting	Adjust flow knob to point directly to prescribed setting.
	Unit is empty	Call Wright & Filippis for immediate delivery.
	Dirty or faulty cannula	Replace cannula.
	Stationary unit obstructed flow	Fill portable and call Wright & Filippis location.
Portable unit cannot be removed from stationary system	Units are frozen together	Wait 15-30 minutes for connections to thaw.
Portable unit does not last as long as usual	Not completely filled	Review filling procedure. If problem persists, call Wright & Filippis.
White vapor spewing out of connector after uncoupling	Fill valve stuck open	Immediately reconnect portable to stationary while being careful not to come into contact with the vapor. Wait 15-30 minutes for ice to thaw. Remove portable.
All other problems or questions about equipment		Call your local Wright & Filippis branch.



**WRIGHT
&
FILIPPIS**

www.FirstToServe.com

Wright & Filippis has several locations to serve you. If you're unsure which location is nearest you, call our toll-free general information line at:

Michigan (Lower Peninsula): 1-800-482-0222
Michigan (Upper Peninsula): 1-800-232-1143
Ohio: 1-800-860-0738
Indiana: 1-800-766-1608

Customer Service (Detroit Metro Area)
Clinical Services and Home Medical
Equipment/Supplies

1-800-843-0222
Fax: 248-853-1839

© Copyright 2001, Wright & Filippis, Inc.