Liquid Oxygen
Patient/Caregiver
Acknowledgement

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The undersigned acknowledges that he/she has received, been instructed in, and understands the subjects shown on this page and covered in this booklet.

Patient/Caregiver Signature___________________________ Date__________
Please PRINT Name_________________________________________________

Breath of Life Representative____________________________ Date___________
Please PRINT Name_______________________________________________________

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Oxygen Prescription:

Your physician has prescribed your oxygen to be used in the following manner:

____ liters per minute during normal activity.
____ liters per minute during sleep.
____ liters per minute when exercising.
____ liters per minute continuously.

Please note that the information provided here is meant to supplement, not replace, any special directions provided by your physician.

Oxygen is a prescribed drug. Never increase or decrease your oxygen flow rate without the specific approval of your physician. If your physician changes your oxygen flow rate or hours of use, notify Breath of Life immediately.

Oxygen Description

Description
All people need oxygen in order to live. Oxygen is an invisible gas that we can’t see, taste, or smell, yet is always there in the air which surrounds us. The amount of oxygen in the air is always 21%. Oxygen is inhaled into our lungs and is then transported through the blood to all parts of the body. When the respiratory system is working properly, oxygen is inhaled and transported to the cells with ease.

Using Supplemental Oxygen
The 21% concentration of oxygen in the air around us is enough for people with normally functioning lungs and heart. However, a person with lung or heart problems may often benefit from breathing air
which has a higher concentration of oxygen in it. When the body does not get enough oxygen, a person may experience difficulty in breathing, fatigue, loss of memory, headaches and/or confusion. Using supplemental oxygen may help provide relief from these symptoms.

**Liquid Oxygen**

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 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 the 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**.

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

Stationary units 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 by your physician, a **humidifier bottle**.

**Oxygen Equipment**
The oxygen is delivered to you through a nasal cannula or face mask. The tubing on the cannula
or mask is attached to the outlet nipple or, if recommended by your physician, the humidifier outlet bottle nipple. Sometimes, an extra length of tubing may be attached. This will allow you to move about at a farther distance from your stationary reservoir.

The following step-by-step instructions will help you operate your stationary unit. If your physician has specified a humidifier with your stationary unit, go to step 2.

**Step 1:** Attach a nipple valve to the reservoir outlet tube and attach the oxygen tubing to the nipple outlet.  
**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 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:** 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.  
**Step 4:** Fit the nasal cannula or the oxygen mask to your face so it is comfortable. Follow the instructions below for either the nasal cannula or oxygen mask, depending on which one your physician has prescribed.

**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 physician 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.
**Note:** Oxygen masks must only be used with liter flow rates of five liters per minute or greater.

**Step 5:** You should use your oxygen for the number of hours your physician has prescribed. When you have finished using your oxygen, you should:
• Remove the nasal cannula or the oxygen mask.
• Turn the liter control knob off.

You should also check the amount of oxygen remaining in your stationary reservoir daily so you will 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 depress a push button on the top of the unit to light up the meter face and cause the needle to register.

**Bar-Type 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 concerning when to order an oxygen refill, please contact your Breath of Life representative.

The Portable Unit

The portable liquid oxygen unit is a small unit which is intended to be used during 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 be simply and conveniently filled from the stationary reservoir. The unit is carried by means of a shoulder strap or lightweight 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.

<table>
<thead>
<tr>
<th>Stationary Reservoir Approximate Time in Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liter Flow</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>5</td>
</tr>
</tbody>
</table>
Condensation Pad
Some portable units have a condensation pad on the bottom of the unit. If the pad gets wet, remove the plastic cover and pad and allow the pad to air dry. 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 Breath of Life representative.

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.

Step 4: Always keep your portable unit 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.

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. Follow the instructions on either page 12 or 13, depending on the type of unit you use.
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. Continue to step 4 on
page 13.
Refilling Your Portable Unit (continued)
Tilt the portable unit and insert
the connector
Rotate the portable unit clockwise
to an upright position

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,
rotate clockwise until the pin locks into place and
firm resistance is felt.

Step 4: Open the fill valve by either depressing the
fill button or using a key (depending on your specific
model). This valve is found either on the reservoir
or on the portable unit (see page 14 for illustration).
• 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 may see a small cloud of white
vapor at the connection.
• Always watch the units carefully 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 portable 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 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.

Please Note
• Liquid oxygen will slowly evaporate from a portable unit. To avoid excessive waste, fill the portable unit just before use.
• If, when separating the portable unit from the stationary unit, the liquid oxygen continues to flow out of the stationary unit, do not attempt to reconnect the portable unit. Stand away from the unit and call Apria Healthcare.
• 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. Since this guide is an approximation, always add an extra 30 minutes when estimating your portable oxygen needs.

Maintaining the 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 Breath of Life immediately. We are available 24 hours a day, seven days a week for emergencies
Cleaning Tips

*Never use wax, cleaning sprays or furniture polish on liquid oxygen units*

Cleaning and disinfection of respiratory therapy equipment in the home is of major importance. 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 dusty, dirty, 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.

*Always use your back up oxygen system while refilling and cleaning your humidifier bottle.*

**Refilling the Humidifier Bottle**

**Step 1:** Wash your hands as instructed on page 21.

**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. Shake off the 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 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 as instructed on page 21.

**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 the excess water.

**Step 6:** Mix one part white vinegar and one part water.

**Step 7:** Soak humidifier bottle for 30 minutes in vinegar solution.

**Step 8:** Rinse bottle in warm tap water.

**Step 9:** Allow the bottle to air dry.

**Step 10:** Discard vinegar solution.

**Step 11:** Replace your humidifier bottle as instructed above.

Minimal care is required of your oxygen tubing and nasal cannula or oxygen mask. 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. **Always use your backup oxygen system when clearing moisture from your oxygen tubing.**

Clearing Moisture from Your Oxygen Tubing

**Step 1:** Remove the humidifier bottle from the outlet tube on the liquid unit.

**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, disconnect it, remove the nipple adapter, reconnect the humidifier bottle to the liquid oxygen unit and 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. Always be aware of the amount of oxygen remaining in your stationary reservoir.

You will most likely be on an automatic redelivery schedule, but always knowing how much oxygen you have will prevent any worry of running out before your next supply is delivered.

If you are not on an automatic delivery schedule, reorder oxygen one to two days before your stationary reservoir has been calculated to run out. This will allow your Apria Healthcare location to schedule your delivery without causing you to worry. Consult the table on page 8 for guidelines on the approximate time for use of your unit.

If you experience any of the following problems, call your physician.
- Fever or chills
- Increased wheezing
- Increased mucus production
- Mucus becomes thicker
- Change in mucus color
- Headaches
- Loss of appetite
- Increased shortness of breath
- Chest pain
- Increased cough
- Swelling in your ankles or around your eyes
- Weight gain overnight
- Feeling dizzy or sleepy
- Any change in physical sensation after taking a new medication

If you are having trouble with your equipment call Breath of Life.

If you experience any physical change, call your physician.

If you experience severe physical problems, call your local emergency services.
Hands must be clean prior to handling supplies and solutions. Wash hands before beginning any procedure.

**Step 1:** Wet hands thoroughly with warm water.

**Step 2:** Use antibacterial soap.

**Step 3:** Wash hands for one to two minutes using a rotary motion and friction. Wash:
- Back and palm of each hand
- Between all fingers

**Step 4:** Rinse hands under running water.

**Step 5:** Dry on clean towel or with paper towel.

**Safety Precautions:**
Oxygen will **not** explode or burn.
Oxygen **will** 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 you and/or your oxygen equipment.
- Place “No Smoking” signs on the front and back door 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. Ask to sit in the non-smoking section of the restaurant.
• Keep matches, cigarettes, burning tobacco, or candles away from area where the system is being stored or operated.
• Avoid creation of any spark near oxygen equipment. This includes sparks from static electricity.
• Keep the equipment at least seven feet away from radios, television sets, window air conditioners, fans, electric razors, hair dryers, and all other electrical appliances.

*Never grease or oil oxygen equipment*

*Do not permit smoking in the same room as oxygen equipment*

**Cooking**

It is best to cook using only a microwave oven. Cooking on a gas stove is not recommended.

**Storage**

*Do not store your oxygen equipment in a small storage area.*

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

**Oil-Based Toiletries and Small Appliances**

*Never use oil-based face creams, a hair dryer or an electric razor while using oxygen.*

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 Burn**
*Never touch the frosted connectors on the liquid units.*
Liquid oxygen is chilled to around 300 degrees below zero 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 physician.*

**Moving Your System**
*Never move the stationary unit without consulting with Breath of Life.*

**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 doors and windows to ventilate the area and call Breath of Life immediately.

**Make Sure Your Home Address Is Visible**
*Make sure your home address can be easily seen from the street during both day and night.*
If you are expecting a night delivery or visit, turn on the porch light. Check to see that your address numbers are easy to spot and read from the street. This will allow all Breath of Life and emergency services to locate your residence easily.

**Follow Emergency and Natural Disaster Instructions**
In the event of an emergency or natural disaster, follow the radio or television instructions of your local authorities.

**Traveling**
Early planning and careful preparation are the keys to an enjoyable trip. The following tips should help you plan and prepare for any trip.
- Contact your physician to make sure your
proposed trip is medically safe and to obtain additional copies of your prescription.
• Contact Breath of Life for assistance with getting oxygen refills along your driving route or at your final destination.
• Have cash available to pay for oxygen refills or equipment.

If traveling by car or recreational vehicle:
• Remind passengers not to smoke in the vehicle in which you are traveling.
• Securely fasten tanks.
• Keep one window partially open to provide fresh air circulation.
• **Do not** store oxygen in the trunk of your car.
• **Do not** store oxygen in an area where the temperature will reach 120 degrees Fahrenheit.
• Keep liquid oxygen in an upright position.
• When traveling in, or occupying a recreational vehicle, do not store oxygen near gas or open flame.
• Stay at least five feet away from all open flames, such as camp stoves, lanterns, heaters, etc.
• Never refill your portable unit inside your car or recreational vehicle.

If traveling by bus, train or ship:
• Contact the reservation office for specific information about the use of oxygen and special accommodations.
• Most companies require **at least two weeks notice** if you are going to be using oxygen on your trip.

If traveling by airplane:
• Most airlines require **at least four weeks notice** if you are going to be using oxygen on your trip.
• Ask your physician what flow rate to use during your flight.
• Request a direct flight, if one is available.

Breath of life can assist with your travel arrangements. Contact your Breath of Life at least six weeks prior to your travel date for more information.
• Most airlines allow patients to bring portable oxygen concentrators on board.
• Before you depart on a plane, ensure that arrangements have been made for your oxygen at your final destination.

For further information, please contact your Breath of Life location to assist with your travel arrangements.
## Troubleshooting

<table>
<thead>
<tr>
<th>Trouble</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>No oxygen coming from Cannula or mask</td>
<td>Decreased awareness of oxygen flow</td>
<td>Place cannula prongs in a clear glass of water. If you observe bubbles coming from your cannula, your unit is working right.</td>
</tr>
<tr>
<td></td>
<td>Lose connections</td>
<td>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 tight.</td>
</tr>
<tr>
<td></td>
<td>Flow control knob is not pointed to proper setting</td>
<td>Adjust the flow knob to the proper prescribed setting.</td>
</tr>
<tr>
<td></td>
<td>Unit is empty</td>
<td>Call Breath of Life for immediate Delivery.</td>
</tr>
<tr>
<td></td>
<td>Stationary obstructed Flow</td>
<td>Fill portable unit and call Breath of Life.</td>
</tr>
<tr>
<td>Portable unit cannot be removed from stationary unit</td>
<td>Portable unit is frozen onto the stationary unit</td>
<td>Wait 15-20 minutes for units to thaw.</td>
</tr>
<tr>
<td>Portable unit does not last as long as usual</td>
<td>Not fully filled</td>
<td>Review filling procedure if you are still having problems contact Breath of Life.</td>
</tr>
<tr>
<td>White vapor coming out of connector after filling</td>
<td>Fill valve froze open</td>
<td>Immediately reconnect portable to the stationary system. Be careful not to come into contact with the vapor. Wait 15-20 minutes for the units to thaw and remove the portable.</td>
</tr>
<tr>
<td>All other problems or concerns</td>
<td></td>
<td>Contact Breath of Life.</td>
</tr>
</tbody>
</table>
Using an Oxygen Conserving Device:

Indications for Use:

An oxygen conserving device is frequently prescribed, with oxygen therapy, for those patients who are active and may be away from home frequently. The conserving device provides a burst of oxygen during the inspiratory phase of the breathing cycle. This burst is provided to a patient with a lung disease as a supplemental source of breathing oxygen.

How the Device Works:

A normal breathing pattern can be divided up into thirds, with only the first third requiring oxygen for inhalation. During the remaining two thirds of the breathing pattern, exhalation occurs and oxygen is not required. As a result, an oxygen conserving device extends the use of time of an oxygen system by an average of 3:1. The device senses the start of inhalation and instantly releases a short “pulsed” dose at the very beginning of the breathing cycle. Since all of the “pulsed” oxygen is inhaled deep into the lungs, less oxygen is required to accomplish the same effect than with continuous flow oxygen systems. This means that an oxygen conserving device in pulse dose mode will last two to four times longer than a continuous flow oxygen system would, but still provides the same result. Because oxygen is released only during inhalation, the constant flow of oxygen into the nares is eliminated. Many patients find an oxygen conserving device more comfortable than continuous flow delivery systems. The short “pulse” of oxygen delivered during inhalation is almost undetectable and the humidity in the room air helps maintain a normal level of moisture in the nasal cavity. This reduces discomfort of dehydration that can be associated with a continuous flow oxygen system.
Oxygen conserving device dramatically extends the use time from a supply of oxygen, offering increased mobility with improved comfort and increased efficiency. The reliability and safety of pulse dose oxygen delivery has been proven effective in clinical testing as well as through independent tests performed by physicians and respiratory therapists.

**Parts of the Oxygen Conserving Device**

There are two types of oxygen conserving devices pneumatic (gas powered) and electronic (battery powered). The only setting to be made on a pneumatic conserving device is the flow rate knob. There is no battery to replace, and no indicators, buttons or selectors.

**Electronic Conserving Device**

The electronic conserving device is a little more complex, with more moving components than a pneumatic conserving device. The terms in the below pertain primarily to electronic conserving devices.

**Battery Check Button** – Battery power can be checked at any time by pressing and releasing the battery check button

- **Normal Battery Indicator** – A green light indicates that there is sufficient battery power
- **Low Battery Indicator** – A yellow light indicates that there are four to eight hours of battery life remaining
- **Change Battery Indicator** – A red light indicates that the battery should be changed immediately

**Battery Door** – Provides access to the battery in electronic (battery powered) conservers. Use only a standard, C-cell battery.

**Cannula Fitting** – Use this fitting to attach the cannula to your conserving device.

**Oxygen Contents Guage** – Indicates that remaining pressure in the oxygen cylinder. When this gauge falls into the red
section, you should switch to a new cylinder.

**Pulse Dose / Normal Battery Indicator**
In addition to indicating the status of the battery the green light also illuminates each time the unit pulses oxygen.

**Rotary Selector**
When the rotary switch is set to “0”, the unit is not using battery power and will not pulse. When the switch is set to one of the numbers, the unit is on and awaiting inspiration through the nasal cannula, at which time it will dose on every breath. The volume of the oxygen delivered varies according to which prescription flow setting is chosen. The final setting on the rotary switch is “CF”; this is the continuous flow position. In this position oxygen will flow from the cannula fitting continuously at the preset, continuous flow default rate.

**T-Handle**
This handle is used to attach the conserving device to the cylinder.

**Alarms**

**No Pressure Audible Alarm**
If the oxygen cylinder has insufficient pressure or is not open, the unit will alarm each time inspiration is sensed through the cannula.

**No Inspiration Alarm**
If the unit is on and inspiration has not been sensed for three minutes, the audible alarm will activate three minutes, the audible alarm will activate three successive times. It will continue to alarm once every 30 seconds until one of the following occurs; inspiration is sensed, the rotary switch is turned to the “O” position, the rotary selector is turned to the continuous flow position, or battery power is depleted.

**Note:** Continuous flow mode is not powered by the Battery and can be used regardless of the battery level.
The oxygen cylinder will not last as long in a continuous flow mode as it would in a pulse dose mode. Unless there is a problem with the unit, such as a dead battery, the unit should be used in a pulse dose mode.

**Using Your Oxygen Conserving Device**

**Attaching Your Oxygen Conserving Device to the Cylinder or Connecting Unit**

**Step 1:** Loosen the T-handle or connecting unit.

**Step 2:** Lower the conserving device over or connect to the post of the cylinder.

**Step 3:** Align the pins in the conserving device to the holes in the cylinder post as you would a standard regular.

**Step 4:** Hand-tighten the T-handle or connecting unit until the conserving device is secure.

**Inserting a Battery into the Conserving Device (If Necessary)**

**Step 1:** Open the battery door.

**Step 2:** Insert a “C” cell alkaline battery

**Step 3:** Close the battery door

**Using Your Conserving Device**

**Step 1:** Open the cylinder

**Step 2:** Attach the nasal cannula to the conserving device and to your nose. Oxygen tubing up to 35 feet long may be used in the pulse dose mode.

**Step 3:** Turn the rotary selector to the correct prescribed flow setting.

**Step 4:** Breathe normally. The conserving device will deliver a bolus of oxygen at the leading edge of inspiration on every breath up to 40 breaths per minute.

**Step 5:** When you are finished using the oxygen conserving device, turn your cylinder to the closed position, and rotate the rotary selector to the “O” position.

**Warning:** To prevent injury from cylinders tipping over, do not use cannula tubing lengths over 10 feet with small compressed oxygen cylinders. Unattended cylinders should be secured in a cylinder stand.

**Note:** A mask should not be used in the pulse dose delivery mode as it may not fit to face well enough to allow the
conserving device to sense inhalation efforts. Also, the therapeutic effect of the oxygen conserving device would be diluted in the mask prior to inhalation.

**Note:** A pediatric or low flow cannula should not be used in the pulse dose delivery mode. The reduced diameter of the cannula causes too much back pressure and will affect the oxygen volume delivered.

**Note:** The oxygen conserving device delivers oxygen in a very short “puff”. It does not deliver oxygen during the entire inhalation. The length of time that the conserving device delivers oxygen will not vary from breath to breath. The time is set in correlation to the oxygen dosage set on the conserving device (patient’s prescription setting).

**Note:** The oxygen conserving device is design to prevent the delivery of pulses more than every $1\frac{1}{2}$ seconds. If the breath rate is greater than 40 breaths per minute, this feature prevents delivery of excessive oxygen by not dosing on every breath.
## Troubleshooting:

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Possible Causes</th>
<th>Remedies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxygen is not being delivered even though the Pulse Dose / Normal battery indicator is flashing every time I breathe.</td>
<td>Oxygen supply is empty</td>
<td>Check contents indicator on the device. If empty, switch cylinders</td>
</tr>
<tr>
<td></td>
<td>Oxygen supply is not turned on.</td>
<td>Open the compressed oxygen cylinder valve by following the directions given by Breath of Life.</td>
</tr>
<tr>
<td>Use times are different from those listed in the chart</td>
<td>The conserver responds to your breath rate. Your breath rate may vary, which causes the operation time to vary.</td>
<td>Conserving device is probably operating correctly.</td>
</tr>
<tr>
<td>Conserving device triggers whenever the cannula moves the slightest bit.</td>
<td>Triggering sensitivity is temporarily interrupted due to pinched cannula, tubing, continuous flow use, etc</td>
<td>Conserving device will adjust automatically within 1-2 minutes</td>
</tr>
<tr>
<td>Conserving device will not pulse</td>
<td>Cannula is not adjusted properly.</td>
<td>Check all cannula connections to make sure they are tight and adjust the cannula to fit comfortably in your nose. Ensure tubing is not kinked.</td>
</tr>
<tr>
<td></td>
<td>Triggering sensitivity is temporarily interrupted due to pinched cannula, tubing, continuous flow use, etc.</td>
<td>Conserving device will adjust automatically within 1-2 minutes.</td>
</tr>
<tr>
<td></td>
<td>The unit is not turned on</td>
<td>Turn the rotary selector to the appropriate setting.</td>
</tr>
<tr>
<td>Conserving device works fine for a couple of minutes, then sensitivity seems to drift and may stop working altogether.</td>
<td>Using a pediatric cannula or any cannula that restricts continuous flow capacity of 10 lpm.</td>
<td>Replace with standard nasal cannula</td>
</tr>
</tbody>
</table>
**Hours of Usage**

Because an oxygen conserving device in pulse dose mode responds to each individual’s breathing patterns, the use time will vary for each individual depending on the prescription rate and the breath rate. Also, cylinders vary in gaseous liter capacity by manufacturer, which may result in varying use times.

To find your estimated use time, find your Flow Rate / LPM in the far left column and move your finger to the right until it is underneath the cylinder size that matches yours. This is only an estimate of oxygen use time.

**Note:** This is based on a I:E Ratio of 1:2 @ a RR of 20 bpm

<table>
<thead>
<tr>
<th>Flow Rate LPM</th>
<th>D Cylinder</th>
<th>E Cylinder</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>21.2 hours</td>
<td>34.6 hours</td>
</tr>
<tr>
<td>2</td>
<td>10.6 hours</td>
<td>17.3 hours</td>
</tr>
<tr>
<td>3</td>
<td>7.05 hours</td>
<td>11.55 hours</td>
</tr>
<tr>
<td>4</td>
<td>5.3 hours</td>
<td>8.65 hours</td>
</tr>
<tr>
<td>5</td>
<td>4.25 hours</td>
<td>6.9 hours</td>
</tr>
<tr>
<td>6</td>
<td>3.55 hours</td>
<td>5.75 hours</td>
</tr>
</tbody>
</table>

**Note:** Usage times for conserving devices vary depending upon cylinder size, device type, and patient. This chart is to be used as a guide only; actual usage times may vary.
Care and Maintenance

The oxygen conserving device should be kept clean and free from moisture and dust. Avoid getting debris such as sand or dirt inside the device. Do not expose the conserving device to water. The device should be protected from extreme temperatures.

Avoid dropping the conserving device or placing it where it could fall. This can damage the device. Use a padded carrying device when possible to carry the cylinder. This will protect the conserving device if it falls.

Clean the device periodically by wiping it with a dry lint-free cloth.

Again DO NOT SMOKE WHILE USING YOUR OXYGEN EQUIPMENT
To Prevent High Concentrations of Oxygen:

- Keep the equipment in a well-ventilated area
- Do not carry equipment under a coat or any form of clothing
- Turn off oxygen supply by closing the cylinder valve when not in use

To Reduce the Risk of Injury:

- Keep all children away from the units
- Do not allow untrained individuals to operate your equipment. Never tamper with or try to repair your equipment. If you have any questions or think your equipment is not working contact Breath Of Life
- Do not immerse in liquids or subject device to harsh conditions
- Do not use in temperatures greater than 104 degrees (40 C) or below 41 degrees (5 C)
- Do not use with other equipment (i.e. humidifier, Nebulizer etc..) when using your conserving Device