



## PRODUCT INFORMATION AND INSTRUCTIONS

OM-900A



CE  
0197



# TABLE OF CONTENTS

---

General Information .....	3
Important Safety Rules and Precautions	
<i>Operating the Unit</i> .....	4-6
<i>Accessories/Repairs</i> .....	6
Introduction	
<i>Purpose</i> .....	7
<i>User Qualification</i> .....	7
<i>Function</i> .....	8
Description of Parts and Controls .....	9-10
Assembly and Use	
<i>Non-Portable Use</i> .....	11
<i>Installing Alkaline Batteries</i> .....	12
<i>Monitoring Battery Energy Level</i> .....	13
<i>Installing the System</i> .....	13
<i>Operating Instructions</i> .....	14

# TABLE OF CONTENTS

---

## Care and Maintenance

<i>Hygienic Preparation</i> .....	15
<i>Intervals</i> .....	15
<i>Procedure</i> .....	16
<i>Patient Change</i> .....	16
<i>Functional Check</i> .....	17
<i>Disposal</i> .....	17

Products, Spare Parts, Accessories .....	18
--	----

Troubleshooting Guide .....	19
-----------------------------	----

## Classifications and Specifications

<i>Technical Data</i> .....	20-22
<i>Separation Distances</i> .....	23
<i>Symbols Key</i> .....	24

Limited Warranty .....	25
------------------------	----

Important Information to Record .....	26
---------------------------------------	----

Notes .....	27-30
-------------	-------

# GENERAL INFORMATION

This manual provides information necessary to safely operate the EVOLUTION™ electronic oxygen conserver with built-in regulator. The intended purpose of the EVOLUTION™ conserver is to provide a regulated flow of medical oxygen from portable cylinders to patients with therapeutic oxygen needs at their prescribed flow rates.

The EVOLUTION™ conserver can be used with any Pin Index valve cylinder (see Fig. A) at home or away from home to provide your specific medical oxygen requirements. It requires two (2) 1.5 volt AA alkaline batteries for operation.

Statements in this manual preceded by the following words are of special significance:



## **WARNING!**

Indicates there is a possibility of injury to you or others.

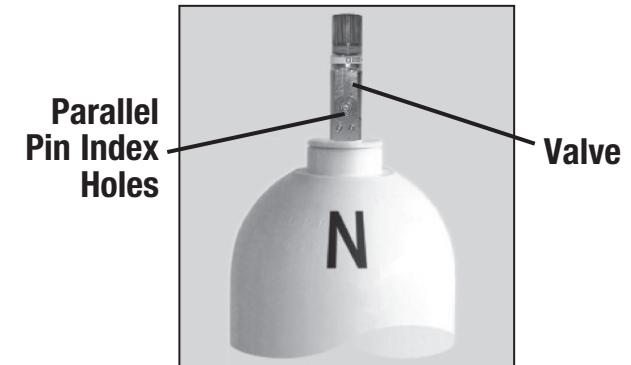
## **CAUTION!**

Indicates there is a possibility of damage to the device or to other property.



## **NOTE**

Indicates points of particular interest or emphasis that allow for more efficient and convenient operation of the equipment.



**FIGURE A**  
Pin Index  
Valve Cylinder

# IMPORTANT SAFETY RULES & PRECAUTIONS

---

Read this instruction manual carefully to ensure your complete understanding before operating your EVOLUTION™ electronic conserver. This manual is part of the unit and must be available at all times. Use the unit for the designated purpose only (see “Purpose” on page 7).

For your own safety and that of your patients, please observe the following points:

## OPERATING THE UNIT

### **WARNING!**



Failure to observe the following warnings may result in damage to the unit or injury to life or limb:

- **Smoking near oxygen equipment is strictly prohibited.** While using your EVOLUTION™ conserver, your clothes may come into contact with oxygen-enriched air, making your clothes more flammable. This also applies for a time after use, until the increased oxygen concentration has escaped from your clothing. For this reason, you must keep cigarettes, matches, burning tobacco and open flames, such as lighted candles or fireplaces, away from the area where the system is being stored or operated.
- Avoid the creation of any spark, such as static electricity caused by any type of friction, near the medical oxygen equipment.

 **NOTE:** Oxygen will not burn; however, it does vigorously accelerate the burning of any flammable material.

# IMPORTANT SAFETY RULES & PRECAUTIONS

---



## WARNING! (Cont.)

Please remember that this is for your own safety!

- **Keep all parts free of oil and grease.** Hydrocarbon compounds such as oil, grease, petroleum-based products, cleaning agents containing alcohol, hand cream or adhesive bandages can cause explosive reactions if they come into contact with highly compressed oxygen. Please wash and dry your hands properly prior to operating your medical oxygen equipment.
- Never use aerosol sprays near the medical oxygen equipment.
- Do not use in the presence of flammable anesthetic mixture.
- Keep your medical oxygen equipment at least 1.5 m away from any electrical appliance.
- Be sure to turn off the medical oxygen supply by closing the cylinder valve when not in use.
- Do not use cannula tubing that is longer than 2.13 m.
- Do not use a mask or pediatric or other low-flow cannula tubing when operating the unit.
- Do not use the EVOLUTION™ conserver as a handle for carrying your medical oxygen cylinder.

## CAUTION!

- To prevent the unit from overheating, do not place it near any heating devices and do not expose it to direct sunlight. Do not expose the unit to extreme temperatures.
- Your EVOLUTION™ conserver must not be immersed in liquid or cleaned with liquid agents. Prevent water or other liquid substances from entering the unit.
- Protect your EVOLUTION™ conserver from the cold and from continued exposure to water, such as rain.
- Please observe the section “Hygienic Preparation” on page 15 in order to avoid infection or bacterial contamination.
- Prevent dust or any small particles from entering the unit.
- Take care not to get entangled in the nasal cannula tube, which could impede movement and lead to discomfort around the throat.

# IMPORTANT SAFETY RULES & PRECAUTIONS

---

## CAUTION! (Cont.)

- Medical oxygen conserving systems only work reliably upon sufficiently strong inhalation. Therefore, please observe the following:
  - Do not use the EVOLUTION™ at night or while sleeping;
  - Do not use the EVOLUTION™ for babies or children;
  - Do not use the EVOLUTION™ if you only breathe through your mouth.
- Do not use the EVOLUTION™ if you breathe more than 40 times per minute.
- Closely observe the permissible ambient conditions listed in the “Technical Data” section on pages 20-23. Failure to observe them may lead to a fire risk or damage to the unit.
- Tighten all screwed unions by hand only. Do **not** use a tool.
- Do not use the EVOLUTION™ with a humidifier.
- Do not use if leaking or damaged.
- Always open the cylinder valve slowly.
- Be sure to carry extra AA-size alkaline batteries in the event they are needed.

## NOTE:

- Always ensure that your medical oxygen cylinder is sufficiently full. We recommend always keeping a full spare cylinder in reserve.
- **Medical oxygen supplied by this equipment is supplemental only and is not intended for life support applications.**

## ACCESSORIES/REPAIRS

## CAUTION!

- Malfunctions and a lack of biocompatibility may result if third-party articles are used. Please bear in mind that in these cases any guarantee entitlement and liability shall lapse where accessories recommended in the instruction manual or original spare parts are not used.
- Servicing and repair work must only be carried out by the manufacturer (CHAD Therapeutics) or by trained personnel. Refer repairs to authorized personnel.

Please contact your Home Care Provider if you have any questions.

# **INTRODUCTION**

---

## **PURPOSE**

The EVOLUTION™ electronic conserver is designed for use as part of a portable ambulatory medical oxygen system for the purpose of facilitating long-term oxygen therapy (LTOT). It provides mobile LTOT patients with an extended operating time of their mobile system. The EVOLUTION™ conserver includes a combination of a high-pressure regulator and an oxygen conserver and is capable of delivering a precise amount of supplemental medical oxygen at the optimal point in the breathing cycle. Operationally, the EVOLUTION™ conserver greatly increases efficiency in the delivery of medical oxygen, maximizing the beneficial effects and eliminating unnecessary medical oxygen waste.

The EVOLUTION™ is not suitable for use during sleep.

The EVOLUTION™ is not suitable for children.

Use the unit exclusively for the purpose described above.

## **USER QUALIFICATION**

Prior to beginning therapy, patients must be given instruction by qualified personnel on how to use the unit.

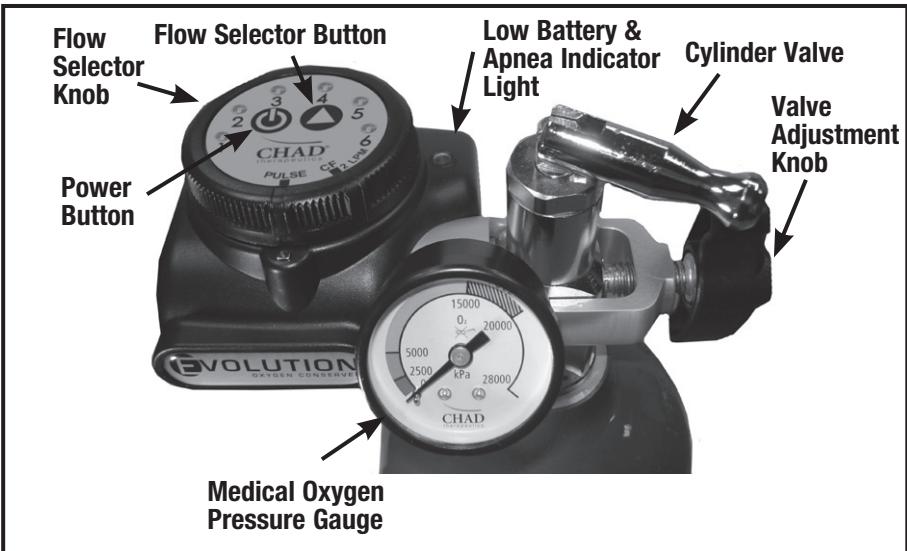
# **INTRODUCTION**

---

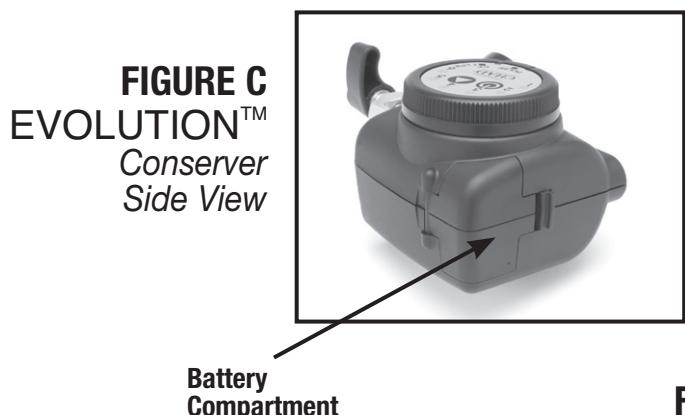
## **FUNCTION**

When we breathe, approximately one-third of the time is spent inhaling, and two-thirds exhaling. As a result, medical oxygen delivered by continuous flow is wasted during exhalation. By eliminating oxygen flow during exhalation, a two-thirds savings is possible. Additionally, the application of the EVOLUTION™ is based on the fact that only medical oxygen inhaled at the beginning of the breath actually reaches the alveoli and is absorbed by the body. The medical oxygen inhaled during the remainder of the breath is not used and is exhaled again. For this reason, the EVOLUTION™ only administers medical oxygen at the beginning of inhalation. This makes the medical oxygen source last longer. The EVOLUTION™ is designed to be an integral component of a lightweight, long-lasting ambulatory system.

# DESCRIPTION OF PARTS & CONTROLS

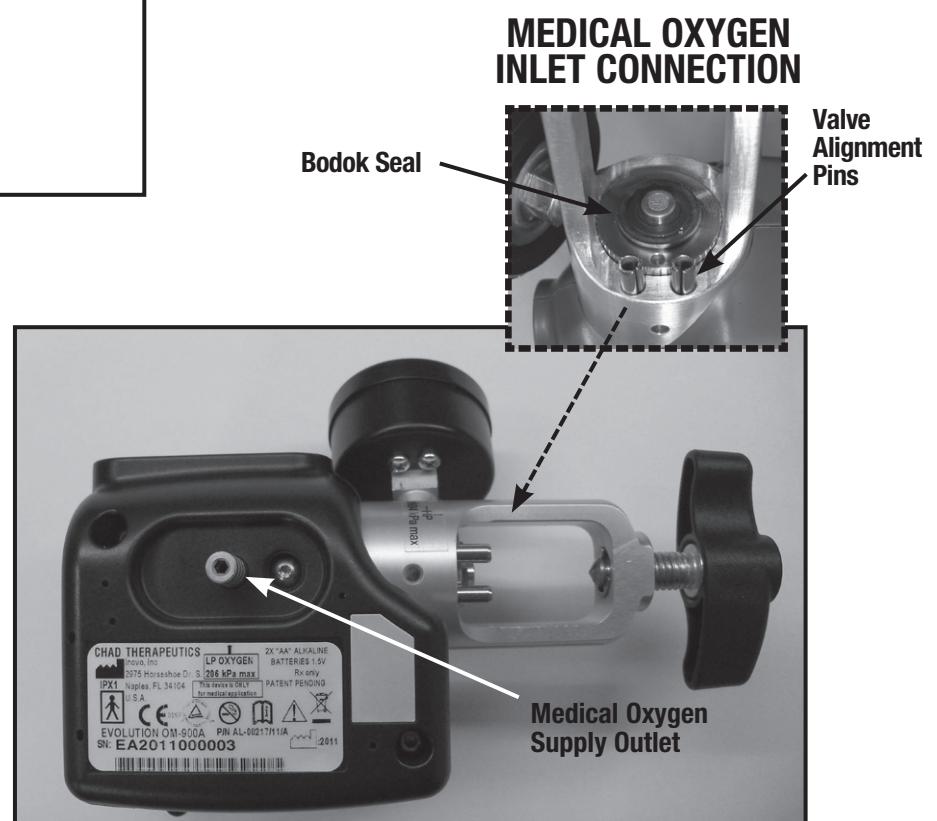


**FIGURE B**  
**EVOLUTION™ Conserver**  
*Top View*



**FIGURE C**  
**EVOLUTION™**  
*Conserver*  
*Side View*

**FIGURE D**  
**EVOLUTION™**  
*Conserver*  
*Bottom View*



# DESCRIPTION OF PARTS & CONTROLS

- **Low Battery Indication:** The EVOLUTION™ conserver incorporates visual and audible warnings which indicate when a battery change is needed.
  - Blinking red light** - Low battery energy level. Replace batteries.
  - Audible alarm** - Low battery energy level. Replace batteries.
- **Apnea Indication:** The EVOLUTION™ conserver incorporates visual and audible warnings which indicate when a breath is not detected for a period of time.
  - Blinking red light** – No breath has been detected for 30 seconds, +/- 5 seconds.
  - Audible alarm** – No breath has been detected for 30 seconds, +/- 5 seconds.
- **Valve Adjustment Knob:** This is used to attach the unit to any medical oxygen Pin Index valve cylinder.
- **Power Button:** Switches the conserver ON and OFF. 
- **Flow Selector Knob:** This enables the user to select their prescribed oxygen flow setting using the Flow Sector Button.  It also enables the user to select the continuous flow mode setting. The continuous flow mode setting (CF) is designed for emergency use only. The amount of medical oxygen delivered when using the EVOLUTION™ in continuous flow mode is preset at 2 LPM (liters per minute). When not in use, the cylinder should be turned off by turning the valve clockwise and the conserver switched off by pressing the Power Button.

The CF mode (continuous flow) is a mechanical override designed as a safety feature in case battery power fails. It is set at 2 LPM CF. When in the CF mode, the user can still change the LED display lights by pressing the Flow Selector Button but it has no effect on medical oxygen output.

**CAUTION!** In the event that it is necessary to operate the unit in the continuous flow mode, DO NOT obstruct the flow of medical oxygen from the Medical Oxygen Supply Outlet by placing your finger over the outlet or blocking the flow through the oxygen tubing in any way. Doing so may render the unit inoperable and/or damage the sensor in the unit.

 **NOTE: Remember that in continuous flow mode, the medical oxygen will be consumed at a much faster rate.**

**Return to another source before depleting the medical oxygen cylinder.**

- **Battery Compartment:** This compartment holds two (2) AA-size alkaline batteries.
- **Medical oxygen Pressure Gauge:** This enables the user to monitor the contents of the compressed medical oxygen cylinder.
- **Medical oxygen Supply Outlet:** Use this fitting to attach a standard cannula.
- **Valve Alignment Pins:** When assembling the unit, these parallel pins must go into the matching holes on the cylinder valve.
- **Bodok Seal:** This creates the sealing interface between the valve and the EVOLUTION™ conserver.

**Medical Oxygen Inlet Connection:** Interface between cylinder valve and conserver that allows medical oxygen to flow into the regulator.

 **WARNING!** Use only a manufacturer-specified Bodok Seal. Other seal washers may not be medical oxygen compatible and may cause an oxygen leak, creating an increased fire hazard.

## ASSEMBLY AND USE

---

- Make certain that your hands are free of oil, grease, and other contaminants, including hand creams.
- Inspect the unit to insure that it has a manufacturer-specified Bodok seal in good condition attached to the inlet connection.
- Secure the cylinder in an upright position.
- Inspect the cylinder valve and the EVOLUTION™ conserver to ensure they are free of contaminants. If any indication of damage or contamination is detected, DO NOT use the equipment and contact your Home Care Provider.



**WARNING!** Use ONLY a manufacturer-specified Bodok Seal. Other seal washers may not be medical oxygen compatible and may cause an oxygen leak, creating an increased fire hazard. Do not use the device if the manufacturer-specified Bodok Seal is missing. Contact your Home Care Provider for assistance.

### NON-PORTABLE USE:

The EVOLUTION™ conserver is designed to extend the life of portable medical oxygen supplies when away from the primary source. While the EVOLUTION™ conserver may be used with stationary medical oxygen cylinders, it should only be used while awake and reasonably attentive. The EVOLUTION™ conserver is not intended for use during sleep.

# ASSEMBLY AND USE

## INSTALLING ALKALINE BATTERIES

The EVOLUTION™ conserver uses advanced technology that prolongs battery life through efficient power use. With normal use of four (4) hours per day at any setting, your batteries should last a minimum of 2 years.

Two (2) AA alkaline batteries are packaged in the box with your EVOLUTION™ conserver. Follow these easy steps to install them:

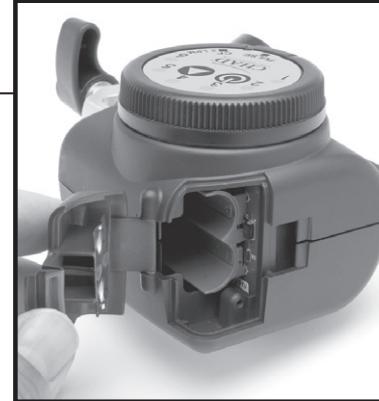
- STEP 1:** Use a Phillips head screwdriver to remove the battery door screw. [Fig E1]
- STEP 2:** While holding the unit in one hand, gently press down on the battery door with your thumb and open the hinge door away from the EVOLUTION™ label. [Fig E1 and E2]
- STEP 3:** Drop the batteries into the slot, making sure they are inserted in the proper direction as indicated by the (+) and (-) symbols. [Figs E3]
- STEP 4:** Rotate the door cover back in place until a “click” is heard.

Changing  
Alkaline  
Batteries

**FIGURE E1**



**FIGURE E2**



**FIGURE E3**



**NOTE:** The EVOLUTION™ conserver is packaged with batteries inside. A special seal is used at the positive terminal to prevent battery oxidation. If it has not already been removed by your Home Care Provider, be sure to remove the seal before using the unit for the first time.

# ASSEMBLY AND USE

## MONITORING BATTERY ENERGY LEVEL:

The EVOLUTION™ conserver is equipped with visual and audible low battery indication that alert you when a battery change is needed.

**Blinking red light** – Low battery energy level. Replace batteries.

**Audible alarm** – Low battery energy level. Replace batteries.



**Disposal of Batteries:** Do not dispose of used batteries in the household waste. Contact your public waste disposal authority for proper disposal instructions.

## INSTALLING THE SYSTEM:

**STEP 1:** Loosen the valve adjustment knob.

**STEP 2:** Lower the EVOLUTION™ conserver over any Pin Index valve with the alignment pins toward the holes on the cylinder valve [Fig. F].

**STEP 3:** Align the two (2) pins and Bodok Seal with the corresponding holes on the cylinder valve.

**STEP 4:** While holding the unit in place, tighten the valve adjustment knob by turning clockwise [Fig. F].

**NOTE:** Tighten only by hand. The use of a tool to tighten the knob may damage the unit.

**CAUTION!** If you are unable to eliminate leaks by manually tightening the valve adjustment knob, replace the Bodok Seal. If leaks persist, the unit must be returned for service.

**STEP 5:** Attach a standard cannula to the medical oxygen supply outlet. See page 14 for an illustration demonstrating the proper positioning of the nasal cannula.



**FIGURE F**

Attaching the EVOLUTION™ conserver to the cylinder valve

# ASSEMBLY AND USE

## OPERATING INSTRUCTIONS:

**STEP 1:** Make sure the EVOLUTION™ conserver is set to the “PULSE” position. Press the Power Button  to turn on the unit.

**STEP 2:** To reduce the risk of rapid oxygen recompression and fire, **OPEN THE CYLINDER VALVE SLOWLY** and completely so that the pressure gauge moves slowly as it indicates the cylinder pressure.

**STEP 3:** Listen for leaks. If a leak is present, close the cylinder valve, check the Bodok Seal, and reinstall. If the leak persists, **DO NOT USE THE EQUIPMENT**. Contact your supplier for repair.

**STEP 4:** To select the flow setting on the EVOLUTION™ conserver (1-6) that corresponds to the appropriate delivery setting, press and hold the Selector Button  in the center of the Flow Selector Knob until the appropriate LED display light is illuminated.

 **Note:** To check your current setting, press and release the Flow Selector Button in the center of the Flow Selector Knob

**STEP 5:** Place the nasal cannula into position with the prongs in the nostrils and begin breathing [Fig. G] The EVOLUTION™ conserver will now start to deliver medical oxygen. The amount of medical oxygen delivered is determined by the flow setting.

 **NOTE:** To help prevent possible damage to the unit, keep the EVOLUTION™ conserver in a carrying bag. Several bags are available for use with different cylinder sizes and configurations.

**STEP 6:** When finished using the system, turn off the medical oxygen supply cylinder valve and continue breathing through the nasal cannula until no further medical oxygen is detected. Press the Power Button  to turn off the unit.

**STEP 7:** Remove the nasal cannula.

**STEP 8:** When not in use, store the EVOLUTION™ conserver in a clean, dry location.



Fig. G  
Proper Positioning of  
Nasal Cannula

# CARE AND MAINTENANCE

---

The EVOLUTION™ conserver is designed for a long and accurate life; however, as with any electronic device, prudent care is required. The unit should be kept clean and free from moisture and dust, as well as extreme temperature. Do not expose the unit to water, such as when bathing or swimming. It is advisable to keep the device in a carrying bag to afford a degree of protection.

## HYGIENIC PREPARATION

The unit and its accessories must be hygienically prepared at regular intervals. Also carry out a functional check after the hygienic preparation (see “Functional Check” on page 17).

## INTERVALS

The unit and its accessories must be cleaned at the intervals listed below. We also recommend carrying out disinfection at these intervals. Please refer to the instructions supplied with the disinfectant used. You are advised to use suitable gloves for disinfection work (e.g. household or disposable gloves).

INTERVAL	COMPONENT	CLEANING	DISINFECTION
As required and between patient use	Case/Fittings	Wipe down with a lint-free cloth	Wipe disinfection
As required and between patient use	Carrying Bag	Hand wipe using warm water and mild soap	Wipe disinfection

# CARE AND MAINTENANCE

---

## PROCEDURE

Carry out hygienic preparation of the unit and accessories as described on page 15. We recommend using an instrument grade disinfectant - Instrumax Pink ARTG No. 135544 - Whiteley Medical or equivalent as approved by the manufacturer. Follow the instructions enclosed with the disinfectant.



### WARNING!

- Take special care that no liquids enter the unit, as this may cause damage.
- You should **under no circumstances** use a cleaning agent. Cleaning agents containing alcohol or grease pose a fire risk in combination with compressed oxygen.
- Pay special attention to the medical oxygen inlet and outlet to make sure they remain free of dust, etc. If the medical oxygen inlet connection becomes contaminated with dirt, oil, or grease, **DO NOT USE OR ATTEMPT TO CLEAN**. Contact your supplier for service or repair.

### CAUTION!

- The carrying bag must never be washed in a washing machine, spin-dried or dried in a laundry drier.
- Cannula tubing is a disposable accessory that should be replaced periodically following normal usage. Do clean and disinfect.

### NOTE:

- You are advised to use suitable gloves (e.g. household or disposable gloves) for disinfection work.
- When cleaning your carrying bag, be careful not to scrub the plastic window and do not roughen the seams. Repeat cleaning, if necessary. Hang the bag in a well-ventilated area and allow to air dry. Do not hang in direct sunlight, as this may cause its external fabric to fade.

## PATIENT CHANGE

Carry out a wipe disinfection on the unit's surfaces before you hand the unit over to a new patient.

# CARE AND MAINTENANCE

---

## FUNCTIONAL CHECK

### CHECKING FOR LEAKS

1. Close the valve on the medical oxygen cylinder.
2. Depressurize the EVOLUTION™ by inhaling several times using the nasal cannula. The pressure gauge needle should drop to zero.
3. Check that all screwed unions and tube connections are tight. If necessary, tighten them **by hand**.  
 **NOTE:** Do not use a tool.
4. Ensure that the unit is set to the “PULSE” position.
5. Slowly open the valve on the medical oxygen cylinder until the needle in the pressure gauge indicator no longer moves.
6. Close the cylinder valve again.
7. Observe the needle in the pressure gauge for approximately one minute.
  - If the needle remains in its position, everything is OK.
  - However, if the needle shows a slow continuous decrease, there is a leak in the system. In this event, discontinue use and contact your Home Care Provider.

## DISPOSAL



**The Unit:** Do not dispose of the unit in the household waste. Consult an authorized electronic waste recycling company for proper disposal.



**Disposal of Batteries:** Do not dispose of used batteries in the household waste. Contact a public waste disposal authority for proper disposal instructions.

# PRODUCTS, SPARE PARTS, ACCESSORIES

## STANDARD PRODUCT

ORDER NUMBER	DESCRIPTION
OM-900A	Standard EVOLUTION™ with Pin Index Connection

## SPARE PARTS

ORDER NUMBER	DESCRIPTION
RP-3040	Black "S" Valve Adjustment Knob
200-1720	Bodok Seal
3000411	Pressure Gauge

## ACCESSORIES

ORDER NUMBER	DESCRIPTION
OP-150-800	3-in-1 carry bag, fits B and CS size cylinders
OP-150T	Horizontal carrying tote, fits B and CS size cylinders

 **NOTE:** Only manufacturer-specified Bodok Seal may be used with the EVOLUTION™ conserver. These accessories are available from your Home Care Provider.

# TROUBLESHOOTING GUIDE

PROBLEM	PROBABLE CAUSE	SOLUTION
Unit does not pulse	Software needs to be reset	Open the battery compartment and remove the batteries. Wait 10 seconds. Replace the batteries and close the battery compartment.
	Unit is powered off	Press the Power Button  to turn on the unit
	Dead batteries.	Replace batteries.
	Batteries installed incorrectly (reversed)	Make sure battery polarity is correct.
	Dirty battery holder contacts.	Remove the batteries. Use rubbing alcohol and a cotton swab to clean contacts.
	Battery holder contents blocked by strap.	Remove batteries and reinsert correctly (See "Installing Alkaline Batteries" Section on page 12.)
	Cylinder valve is closed.	Turn cylinder valve clockwise to open.
	Cylinder is empty.	Check the pressure gauge. Replace the cylinder if empty.
	Medical oxygen cannula is blocked or kinked.	Remove kinks. Clean or replace if necessary.
Short battery life	Non-alkaline batteries are used.	Make sure the batteries inside the unit are alkaline.
	Batteries are faulty.	Replace batteries. (See "Installing Alkaline Batteries" section on page 12.)
Breath sensor alarm does not operate or operates intermittently	Non-alkaline batteries are installed.	Install alkaline batteries.
	Batteries are low/dead.	Install new batteries.
	Batteries are non-functioning.	Install new batteries.

Non-functioning units are subject to warranty provisions and the manufacturer repair/return policy. If necessary, call your Home Care Provider.

 **NOTE:** Do not attempt to open the electronic compartment of the unit. If the case is opened or tampered with, the warranty is void.

# CLASSIFICATIONS AND SPECIFICATIONS

## TECHNICAL DATA

### SPECIFICATIONS

EVOLUTION™	
Product class according to 93/42/EEC	IIb
Dimensions (L x H x W)	15.5 cm x 6.4 cm x 7.9 cm
Weight	Approximately 422 grams with batteries
Input pressure	1380 kPa bar to 20680 kPa
Temperature range	<ul style="list-style-type: none"><li>• Operation -10°C to 40°C</li><li>• Storage -40°C to 70°C</li></ul>
Humidity range	<ul style="list-style-type: none"><li>• Operation 15% - 95% non-condensing</li><li>• Storage Up to 95% non-condensing</li></ul>
Operating Altitude	-304.8 to 3,048 meters 700hPa - 1060hPa
Cannula	Standard nasal cannula, up to 2.13 m
Regulator	Built-in, 170 kPa ± 30 kPa
Continuous flow emergency bypass setting	Factory preset at 2.0 ± 0.5 lpm

# CLASSIFICATIONS AND SPECIFICATIONS

## SPECIFICATIONS (Cont.)

Oxygen delivery at level:	Liter Flow Equivalency	Volume Delivered
1	1	10 - 15 mL
2	2	20 - 25 mL
3	3	30 - 35 mL
4	4	40 - 50 mL
5	5	50 - 60 mL
6	6	60 - 75 mL
Continuous flow	2 LPM $\pm$ 0.5 LPM	Not Applicable
Maximum breathing rate	40 breaths per minute	
Power supply	<ul style="list-style-type: none"><li>Batteries</li></ul> (2) x 1.5 V alkaline AA or LR6-type batteries	
Low battery indication:	<ul style="list-style-type: none"><li>Blinking red light</li><li>Audible alarm</li></ul> Low battery energy level, replace batteries	
Apnea indication:	<ul style="list-style-type: none"><li>Blinking red light</li><li>Audible alarm</li></ul> No breath has been detected for 30 seconds, +/- 5 seconds	



**NOTE:** Rechargeable batteries can be used.

# CLASSIFICATIONS AND SPECIFICATIONS

## SPECIFICATIONS (Cont.)

Classification according to EN 60601-1	Type BF IPX1 as per IEC 60529
Electromagnetic compatibility (EMC) according to EN 60601-1-2	EN 55011 EN 61000-4-2 to 6, 8+11
Vibrations	Within IEC 60068-2-64

# CLASSIFICATIONS AND SPECIFICATIONS

## SEPARATION DISTANCES

### Recommended separation distances between portable and mobile RF Communications equipment and the EVOLUTION™.

The EVOLUTION™ is intended for use in the electromagnetic environment in which radiated RF disturbances are controlled. The user of the EVOLUTION™ can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications (transmitters) and the EVOLUTION™ as recommended below, according to the maximum output power of the communication equipment.

Max Output Power (Watts)	Separation distance according to transmission frequency in meters		
	150 kHz to 80 MHz $D = (3.5/V_1)(\sqrt{P})$	80 MHz to 800 MHz $D=(3.5/V_1)(\sqrt{P})$	800 MHz to 2.5 GHz $D=(7/V_1)(\sqrt{P})$
0.01	0.12	0.12	0.23
0.1	0.37	0.37	0.74
1	1.17	1.17	2.33
10	3.69	3.69	7.38
100	11.67	11.67	23.33

# CLASSIFICATIONS AND SPECIFICATIONS

## SYMBOLS KEY

SYMBOL	MEANING
	Warning, consult accompanying documents
	Refer to the instruction manual
	<b>TYPE PLATE</b>
	Year manufactured
	Degree of protection against electric shock: type BF unit
	Type of protection against electric shock: protection class II unit
	Do not dispose of the unit in the household waste
SN	Serial number of the unit
IPX1	The EVOLUTION™ is protected against dripping. A few drops of rain will not damage the unit, but you should protect it from continued exposure to water by keeping it in its bag or carrying it under your jacket.
	Manufacturer
	No smoking or open flames
CF	Continuous Flow
CE 0197	All the requirements in the applicable EC Directives are fulfilled

## LIMITED WARRANTY

---

The EVOLUTION™ oxygen conserver has been carefully manufactured and inspected and is warranted to be free from defects in workmanship and materials. Under this warranty, CHAD Therapeutics' obligation shall be limited to the replacement or repair of any such units or parts that prove, by CHAD's inspection, to be defective within two years from the date of purchase. Any abuse, operation other than the intended use of the product as outlined in this manual, negligence, accident or repair by other than authorized service professionals shall immediately void this warranty. This warranty does not extend to the battery or cannula.

CHAD Therapeutics will not accept damages or charges for labor, parts or expenses incurred in making field repairs, except upon written authorization prior to such action.

The foregoing warranty is exclusive and in lieu of all other express warranties. Implied warranties, if any, including but not limited to the implied warranties of merchantability and fitness for a particular purpose, shall not extend beyond the duration of the express warranty provided herein. In no event shall CHAD Therapeutics be liable for loss of use or profit or other collateral, special or consequential damages.

## IMPORTANT INFORMATION TO RECORD

---

Your Name: \_\_\_\_\_

Date You Received Your Unit: \_\_\_\_\_

Prescribed Medical Oxygen Flow Setting:

- At Rest: \_\_\_\_\_
- During Exercise: \_\_\_\_\_

Home Care Provider's Name: \_\_\_\_\_

Home Care Provider's Phone Number: (\_\_\_\_\_) \_\_\_\_\_

Physician's Name: \_\_\_\_\_

Physician's Phone Number: (\_\_\_\_\_) \_\_\_\_\_

Notes: \_\_\_\_\_  
\_\_\_\_\_

## NOTES

---

# NOTES

---

## **NOTES**

---

## NOTES

---



Manufactured by Inovo, Inc.

Supplied by:  
**AIR LIQUIDE Healthcare Pty. Ltd.**  
5/476 Gardeners Road - Alexandria NSW 2015  
**1300 36 02 02**  
[www.airliquidehealthcare.com.au](http://www.airliquidehealthcare.com.au)



ISO 13485  
Registered

2975 Horseshoe Drive South, Suite 600  
Naples, FL 34104  
Local: 239-687-1280  
Fax: 239-687-1285

International Phone: +01-239-687-1280  
International Fax: +01-239-687-1285  
[www.chadtherapeutics.com](http://www.chadtherapeutics.com)

Authorized Representative  
According to MDD 93/42/EEC  
MDSS  
Schiffgraben 41  
30175 Hannover, Germany

PM-00041/12/B  
Printed in the U.S.A.  
CHAD is a registered trademark of Inovo, Inc.  
EVOLUTION is a trademark of Inovo, Inc.