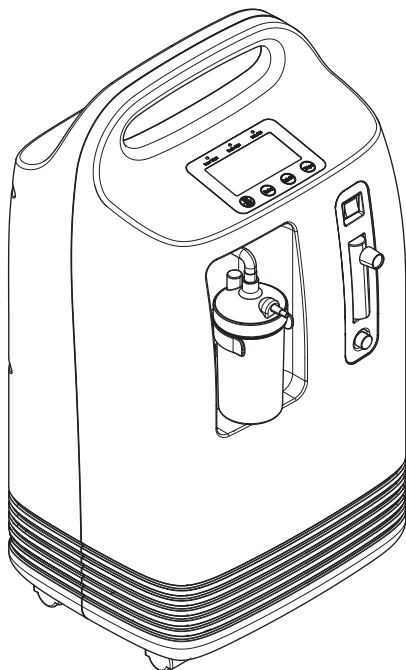


VitalSense O₂

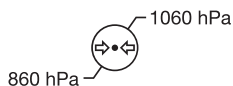
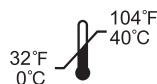
Model: 83010

Oxygen Concentrator

User's Manual



IP21



R_x Only

CAUTION: Federal (USA) law restricts this device to sale by or on the order of a physician.

Not made with natural rubber latex.

Table of Contents

1. Symbols 1

2. Warnings 2

3. Operation Conditions and Environment 3

4. Technical Parameters 4

5. Structures and Functions 6

6. Operation Instructions 7

7. Cleaning and Maintenance 10

8. Transportation and Storage 11

9. Troubleshooting Guide 12

10. Warranty 13

Product Introduction

The **VitalSense O₂** Oxygen Concentrator is a medical device that extracts oxygen from atmospheric air. It is an electrically-powered molecular sieve (artificial zeolite) used to separate nitrogen from ambient air.

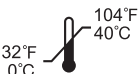
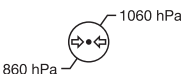
It is suitable for use in a variety of settings. The oxygen concentrator can supply a patient with a steady oxygen flow up to 10L /minute.

In order to ensure the safety and effectiveness of the oxygen concentrator, please read this manual carefully before using the machine, so as to have a comprehensive understanding and knowledge of the product performance as well as correct operation and maintenance methods.

Please strictly observe relevant safety precautions during installation, use, and maintenance.

1. Symbols

The following table is a list of symbols and definitions that are used with the **VitalSense O₂** Oxygen Concentrator.

	Warning		Serial Number
	Type BF applied part		Class II equipment
	off(Power)		On (Power)
	Date of manufacture		CAUTION: Federal (USA) law restricts this device to sale by or on the order of a physician.
	Cannot be thrown into the trash		This way up
	Fragile		No smoking
	No open flame, no open ignition source and smoking is prohibited		Refer to instruction manual/booklet
	Protected against access to hazardous parts with a finger. Protected against solid foreign objects of Φ 12.5mm and greater. Protected against vertically falling water drops		Keep dry
	Keep away from sunlight		Humidity limitation
	Temperature limit		Atmospheric pressure limitation

2. Warnings

For your safety, the VitalSense O₂ Oxygen Concentrator must be used according to the prescription determined by your physician.

It is very important to follow your oxygen prescription. Do not increase or decrease the flow of oxygen-consult your physician.

Your delivery settings of the oxygen concentrator should be periodically reassessed for the effectiveness of therapy.

If a warning light activates, the concentrator is not operating properly. If you feel discomfort while using, or experience a medical emergency while undergoing oxygen therapy, seek medical assistance immediately.

Under certain circumstances, oxygen therapy can be hazardous. Seek medical advice before using an oxygen concentrator

This device manufactures high concentration oxygen, which is highly flammable and promotes rapid burning. Keep your oxygen concentrator far away from open flames. Do not use in the presence of any flammable anesthetic mixed with air, oxygen, or nitrous oxide.

Smoking during oxygen therapy is dangerous and is likely to result in facial burns or death.

Do not allow smoking within the same room where the oxygen concentrator or any oxygen carrying accessories are located. If you intend to smoke, you must always turn the oxygen concentrator off, remove the cannula, and leave the room where either the cannula or mask or the oxygen concentrator is located. If unable to leave the room, you must wait 10 minutes after you have turned off the oxygen concentrator before smoking.

Turn the oxygen concentrator off when not in use to prevent oxygen enrichment.

Do not leave the nasal cannula or mask on bed coverings or chair cushions when not in use.

To avoid the risk of fire and burns, never use petroleum or oil-based lotions or salves. Do not lubricate fittings, connections, tubing or other accessories of the oxygen concentrator.

To prevent product damage, do not attempt to operate the unit without the air filter or while the filter is still damp.

Only use service parts recommended by the manufacturer to ensure proper function. Secure oxygen tubing and power supply cords to prevent tripping hazards and reduce the possibility of entanglement or strangulation.

Care should be taken to prevent the unit from getting wet or allowing water to enter the unit.

Do not place the oxygen concentrator in surroundings where its airflow is obstructed.

Do not place items on top of the concentrator . Keep clearance of at least 32" around unit.

When device is used under extreme operating conditions, the temperature near the exhaust vents on the bottom of the unit may reach 145°F (63°C) .

Do not use the unit if the power cord is damaged.

Before attempting any cleaning procedures, turn the unit " OFF" .

Do not service or clean this device while in use with a patient.

Electrical shock hazard. Do not remove over while the unit is plugged in. Only our authorized service center or technician should remove the covers or service the unit.

2. Warnings (continued)

Use of harsh chemicals (including alcohol) is not recommended. If bactericidal cleaning is required, a non-alcohol based product should be used to avoid inadvertent damage.

Use only voltage specified on rating label.

Always place the concentrator on a hard surface. Never place the concentrator on a surface such as bed or couch, where the concentrator may tip or fall.

Do NOT use an extension cord with the oxygen concentrator. It's important to plug the concentrator directly into a wall outlet to ensure a stable and safe power supply.

Using an extension cord can increase the risk of electrical hazards and potentially compromise the concentrator's performance.

NEVER leave the concentrator unattended when plugged in.

Allow unit to run until it reaches the proper purity level.

CAUTION: Radio Frequency Interference.

Most electronic equipment is influenced by Radio Frequency interference(RFI). When there is strong electromagnetic interference, the LCD (Liquid Crystal Display) may be slightly affected, but the oxygen concentrator will continue to run. ALWAYS exercise CAUTION with regard to the use of portable communications equipment in the area around such equipment.

NOTE: When the oxygen concentrator is turned off, allow at least 5 minutes before restarting.

People suffering from severe carbon monoxide poisoning should not use this product.

In the case of patients who are critically ill or in urgent need of oxygen, an alternative oxygen supply device (e.g., oxygen cylinder, oxygen bag, etc.) must be provided to guard against possible malfunction or power failure.

Repairs must be performed by your authorized service center only. Unauthorized service may cause injury, invalidate the warranty, or result in costly damage.

3. Operation Conditions and Environment

Ambient temperature: 0°C~40°C

Relative humidity: 30%~75%

Air pressure: 860hPa~1060hPa

Altitude: Up to 2286m without degradation; Consult your equipment provider for further information regarding use at high altitude.

4. Technical Parameters

Item	#83010 10L oxygen concentrator
Maximum recommended flow	1-10L/Min
Oxygen concentration	93%± 3%
Power supply	120V ± 11V 60Hz±1Hz
Output pressure	20kpa-60kpa
Input power	800VA
Whole machine noise	50dB(A)
Net weight	25.5Kg
Dimensions(MM/Inch)	350×250×670mm(13.78*9.84*26.38 in)
Working System	Continuous flow
The sound of auditory alarm signal	>40dB(A)
Release pressure of air compressor safety valve	250KPa ± 250KPa
Flow range when outlet nominal pressure is 7kpa	0-10L/Min
Flow range when outlet nominal pressure is 0	0-10L/Min
Note: Device operation above or outside of the voltage, LPM,temperature, humidity, and /or altitude values specified may decrease oxygen concentration levels.	

The surrounding environment should be free of any corrosive gas or strong magnetic field.

Air Requirements

Impurities in raw material air: $\leq 0.3 \text{ mg/cm}^3$

Oil content in air: $\leq 0.01\text{ppm}$

Product Functions

1. Total working time: Show the total working time through display screen.
2. Timing: Set oxygen absorption time as required.
3. Automatic shutdown: Automatic shutdown after reaching preset oxygen inhalation time.
4. Power failure alarm function.
5. Low voltage alarm function.
6. Circulating pressure failure alarm function.
7. Voice function.
8. Low oxygen concentration alarm function.
9. Compressor failure alarm function.

4. Technical Parameters (continued)

a. The field strength of stationary transmitters [such as wireless (cellular / cordless) telephones and terrestrial mobile radios, base stations, amateur radio, AM and FM radio, television broadcasting, etc.] is not theoretically predictable. In order to evaluate the electromagnetic environment of the stationary radio frequency transmitter, the electromagnetic field survey should be considered. If the field strength where the oxygen concentrator is located is higher than the above radio frequency coincident level, the oxygen concentrator should be observed to verify its normal operation. If abnormal performance is observed, supplementary measures may be necessary, such as to readjust the direction and position of the oxygen concentrator.

b. In the entire frequency range of 150KHz-80MHz, the field strength should be less than 3V/m.

Safe Distance

Recommended isolation distance between portable and mobile radio frequency communication equipment and oxygen concentrator:

The oxygen concentrator is expected to be used in a radio frequency harassment controlled electromagnetic environment. Depending on the maximum output power of the communication device, the purchaser or user of the oxygen concentrator can prevent electromagnetic interference by maintaining the minimum distance between the portable and mobile radio frequency communication equipment (transmitter) and the oxygen concentrator.

Transmitter maximum rated output power W	Isolation distance (in meters) corresponding to the different frequencies of the transmitter		
	150KHz-80MHz $d=1.2\sqrt{P}$	80MHz-800MHz $d=1.2\sqrt{P}$	80MHz-800MHz $d=1.2\sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

For transmitter rated maximum output power not listed above, the recommended isolation distance (d) in meters (m) can be determined using the formula in the corresponding transmitter frequency column, where P is transmitter maximum output rated power provided by the transmitter manufacturer, in watts (W).

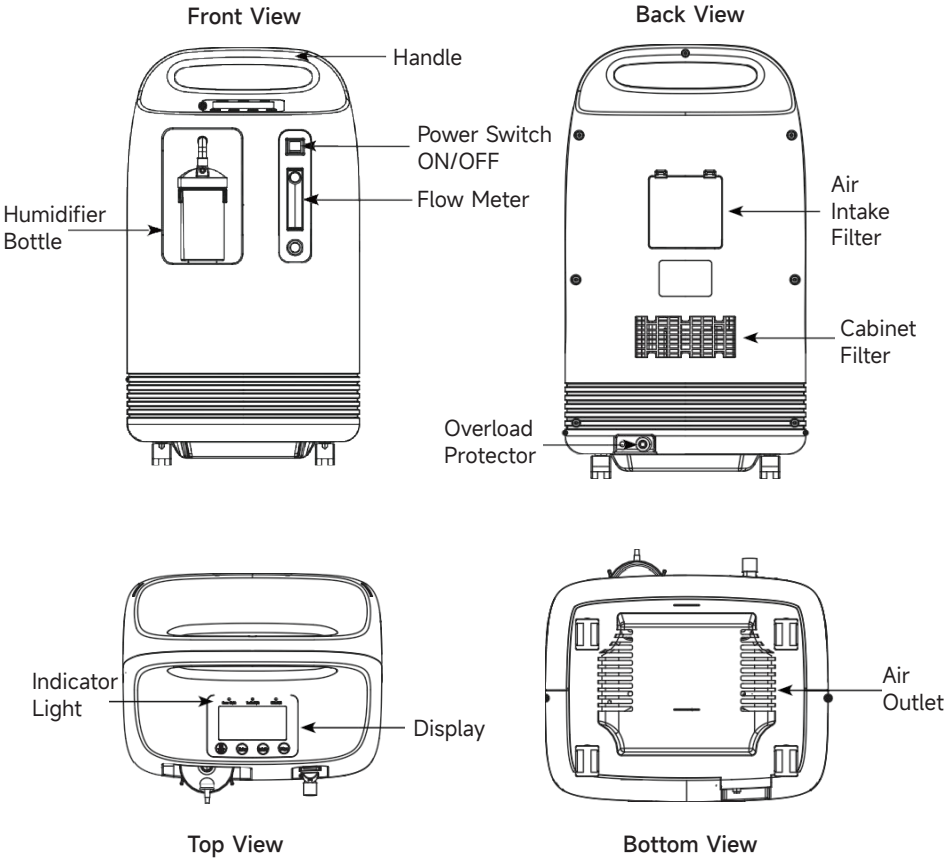
NOTE1: At 80 MHz and 800 MHz frequencies, the formula for higher frequency bands should be used.

NOTE 2: These guidelines may not be suitable for all situations where electromagnetic propagation is affected by absorption and reflection by buildings, objects, and the human body.

5. Structural Features

The main components of the VitalSense O₂ Oxygen Concentrator are the machine, flowmeter, and humidifier bottle, as shown below in Figure 1.

Figure 1



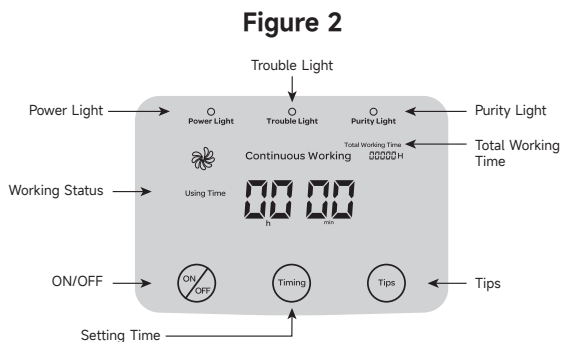
Overload protector: Protects the machine from electricity overload.

Display: Shows the machine's working status.

Air filter: Prevents dirt, dust, and lint from entering the unit; Includes Cabinet Filter and Air Intake Filter.

6. Operation Instructions

Oxygen Concentrator Control Panel



1. Select a location that allows the concentrator to draw in room air without being restricted. Make sure that the device is at least 32 inches away from wall, furniture and especially curtains that could impede adequate airflow to the device.

Do not place the device near any heat source.

2. After reading this User's Manual, plug the power cord into an electrical outlet.

3. If using without a humidifier: Connect your nasal cannula to the oxygen outlet port, as shown in Figure 3.

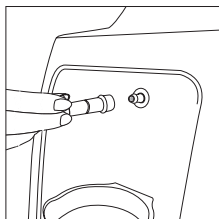


Figure 3

4. If using with a humidifier, follow the steps below:

A. Fill the humidifier with sterile water (or distilled water) so that the water level is between "Max" and "Min".

B. Lock the humidifier into the recess, then connect the oxygen outlet port to the top of the humidifier, as shown in Figure 4.

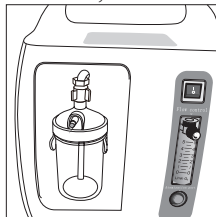


Figure 4

C. Connect your cannula to the humidifier bottle as shown in Figure 5.

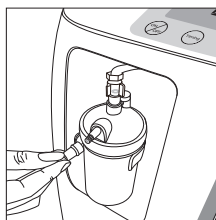


Figure 5

6. Operation Instructions (continued)

5. Press the power switch to the ON [I] position. The LCD display will illuminate.

6. Press ON / OFF button. The device is now turned on. You can begin breathing from the device immediately even though it typically takes minutes to reach oxygen purity specifications. (Figure 6)

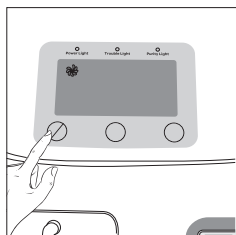


Figure 6

7. Adjust the flow to the prescribed setting by turning the knob on the top of the flow meter until the ball is centered on the line marking the prescribed flow rate. (Figure7)

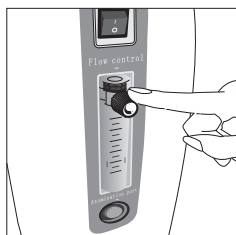


Figure 7

8. Connect the nasal oxygen cannula to the humidifier outlet nozzle. Set the nasal oxygen cannula over patient's ears, insert the nasal oxygen cannula into patient's nostrils to absorb oxygen.

9. When not using the oxygen concentrator, press the power switch to the OFF [O] position.

Continuous Working Mode:

Press the "ON/OFF" button. The oxygen concentrator will start and enter into "Continuous" working mode. The LCD displays the total working time.

Time Working Mode:

After the oxygen concentrator is started, press "timing". The oxygen concentrator will enter into time working mode. Each time "timing" is pressed, the preset time will be increased 30 minutes (minimum preset time is 1 hour, maximum preset time is 3 hours). Users can preset the time as required.

Audible and Visual Alarm Functions

The oxygen concentrator will produce audible and visual alarms when the alarms are triggered. Please respond to alarms immediately.

A. When power is lost for less than or equal to 30 seconds, the alarm settings prior to the power loss shall be restored automatically.

B. The oxygen concentrator is equipped with the following alarm functions:

- c Circulating pressure failure
- c Compressor failure
- c Low oxygen concentration
- c Power failure alarm function
- c Lower Voltage alarm function

6. Operation Instructions(continued)

The Meaning of Indicator Lights

Condition	Indicator Lights	Audio Indicator	Description
Good condition: oxygen concentration $\geq 82\%(\pm 3\%)$	Green	None	Normal Oxygen Output
$65\%(\pm 3\%) \leq$ oxygen concentration $< 82\%(\pm 3\%)$	Yellow	Intermittent Alarming sound	Low Oxygen Output
System Failure Alerts 1)Oxygen concentration $< 65\%(\pm 3\%)$; 2)Circulating pressure failure alarm; 3)Compressor failure alarm.	Red	Continuous Alarming sound	Excessively low oxygen output; Critical failure of device

Oxygen Concentration Alarm Function

- ① When the oxygen concentration is $\geq 82\%(\pm 3\%)$ --- a green light will be illuminated indicating the machine is operating properly.
- ② When $65\%(\pm 3\%) \leq$ oxygen concentration $< 82\%(\pm 3\%)$ --- a yellow light will be illuminated. Please contact your authorized dealer immediately.
- ③ When the oxygen concentration is $< 65\%(\pm 3\%)$ --- a red light will be illuminated, a continuous alarm will sound, and the machine will stop. Please power off the machine immediately and use standby oxygen. Contact your authorized dealer as soon as possible.

NOTE: Each time the oxygen concentrator starts, it will reach the most stable condition after about 30 minutes.

Circulating Pressure Failure Alarm Function

When the circulating pressure failure alarm is activated, a red light will be illuminated ,a continuous alarm will sound, and the machine will stop. Please power off the machine immediately and use standby oxygen. Please contact your authorized dealer immediately.

7. Cleaning & Maintenance

Warning: Make sure to unplug the device before beginning any cleaning or maintenance.

Caution: Excess moisture may impair the proper operation of the device.

1. Cleaning the Device

Periodically use a damp cloth to wipe down the exterior case of this device.

2. Cleaning or Replacing the Filter

Cleaning and changing the filter is very important for protecting the compressor and molecular sieve and extending the working time of the oxygen concentrator. Please clean and replace in a timely manner, according to requirements.

WARNING: Never operate the oxygen concentrator unless the filters are installed.

Cleaning the Cabinet Filter (Figure 8)

The Cabinet Filter should be cleaned once a week. Remove the cabinet filter, clean with mild soap or detergent, rinse thoroughly and ensure the filter is dry before reinstalling.

Replacing the Air Intake Filter (Figure 8)

When the machine's total working time reaches 3000 hours, the Air Intake Filter must be replaced. Open the filter window, remove the Air Intake Filter, and replace with a new one.

3. Cleaning the Humidifier Bottle

Remove humidifier bottle from the machine. Wash and clean it with warm water. In case of any water scale, rinse with clean water after descaling. After cleaning, mix white vinegar with hot water in a ratio of 1:3. Soak the humidifier bottle in the mixture for 30 minutes to remove any mineral buildup.

During cleaning, pay attention to cleaning the small air hole at the bottom of the core tube in the bottle, so as to keep oxygen unobstructed.

Service: Don't remove the covers of this device. Only your authorized service center may perform maintenance or repairs.

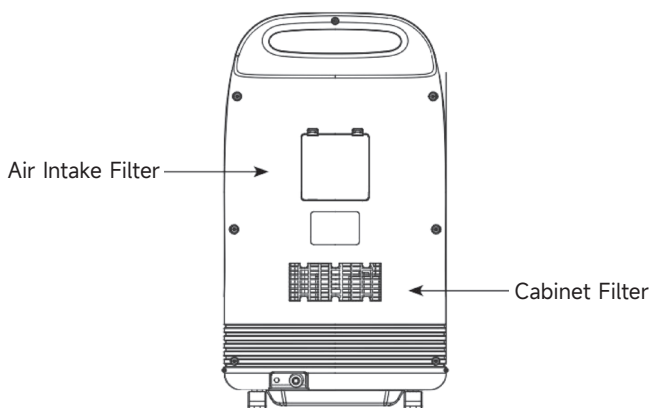


Figure 8

8. Transportation and Storage

1. Attention



Attention

1. Before transportation or storage, pour out the water from humidifier bottle.
2. During transportation and handling, oxygen concentrator must be kept upright. Do not invert or place horizontally.
3. When the storage temperature is below 10°C, place the oxygen concentrator in a normal working environment for 8 hours before use.
4. If the oxygen concentrator has not been in use for a prolonged period of time, please inspect it to make sure all functions are normal before using again.

2. Requirements for storage and transportation

A. Transportation

Ensure that the oxygen concentrator is packed completely and protected from violent collision and direct contact with rain or snow during transportation.

B. Storage

The oxygen concentrator must be stored indoors in a well-ventilated area away from strong sunlight and any corrosive gases.

9. Troubleshooting Guide

Problem	Possible Cause	What to Do
A. The device is not working when it is turned on. (The Audible Alarm is sounding continuously. All LEDs are off.)	The power cord plug is not properly inserted into the electrical outlet.	Make sure the device is properly plugged in to the electrical outlet.
	The unit is not receiving power from the electrical outlet.	Check your household outlet fuse or circuit.
	Internal part failure.	Connect to a backup oxygen source and contact your provider.
B. The device is not working when it is turned on. (The Audible Alarm is sounding continuously and the red light is illuminated.)	Internal part failure.	Connect to a backup oxygen source and contact your provider.
C. Limited oxygen flow to the user without any fault indication(All LEDs and the Audible Alarm are normal.)	The oxygen tubing or cannula is faulty.	Inspect and replace the items if necessary.
	There is a poor connection to a device accessory.	Ensure that all connections are free from leaks.
D. Yellow LED or Red LED is illuminated and the Audible Alarm is beeping periodically.	The device has detected a high oxygen flow condition	Turn the flow rate down to your prescribed level. Wait at least 2 minutes. If the condition persists turn the unit off, connect a backup oxygen source, and call your provider.
E. If any other problems occur with your oxygen concentrator.		Connect to a backup oxygen source and contact your provider.

NOTE: Please contact your authorized service center for any other types of malfunction.

10. Warranty

2 YEARS LIMITED WARRANTY: Your VitalSense O₂ Oxygen Concentrator is warranted to be free of defects in materials and workmanship for two(2) years or 5000 hours, whichever comes first, for the original purchaser. If within the warranty period the product fails to perform in accordance with product specifications, our authorized warranty service center will repair or replace the defective product at its discretion, without charge. This Limited Warranty applies to labor for repairs performed by our authorized Warranty Service Center only.

DO NOT OPEN or ATTEMPT to service the oxygen concentrator, as this will void any and all warranties applicable to the oxygen concentrator. This warranty only applies to the labor for repairs performed by our Authorized Warranty Service Center and does not cover the cost of a loaner unit or rental unit while our Oxygen Concentrator is being repaired.

This Limited Warranty does not cover device failure due to accident, misuse, abuse, neglect, alteration, improper service, lack of preventive maintenance by the customer or patient, damaged power cord, broken O₂ barbed outlet, cracked cabinet or base, damaged or missing casters, missing flow meter knobs, broken flow meter, repair by unauthorized personnel or other defects not related to materials or workmanship.

This Limited Warranty does not cover device failure due to WATER, INSECT or NICOTINE exposure. Water, Insect, or Nicotine exposures are considered improper use and/or abuse; all required parts and labor due to Water, Insect, or Nicotine exposure will not be covered under the limited warranty.

This Limited Warranty does not cover standard Preventive Maintenance, including the replacement of Compressor Inlet Filter, Cabinet Filter, Patient Air Intake Filter, Exhaust Muffler, normal wear and tear, or shipping charges. It is the purchaser's responsibility to comply with the Preventive Maintenance schedule provided in the service manual.

This Warranty shall be rendered null and void, and we shall be absolved of any obligations or liabilities if: (a) The device has been misused, abused, tampered with, or use improperly during this period. (b) Malfunction results from inadequate cleaning or failure to follow the instructions. (c) Unqualified service personnel conduct routine maintenance or servicing. (d) Unauthorized parts or components (i.e., regenerated sieve material) are used to repair or alter the equipment. (e) Unapproved filters are used with the unit.

The purchaser must adhere to the following maintenance steps to ensure optimal performance of the oxygen concentrator by cleaning the cabinet filter every week, replacing the air intake filter every 3,000 hours, and cleaning the humidification bottle every 3 days using clean water or a neutral detergent to maintain hygiene and to prevent scale formation that can damage the machine's oxygen output performance, depending on the usage environment.

For warranty service, please contact your authorized company directly.

