

"UPOC" Oxygen Concentrator

Model:

OC503-BL、OC503-BW、OC503-SR、OC503-TG、
OC503-GY

" UPOC " Oxygen Concentrator USER MANUAL

CATALOGUE

PREFACE	3
WARNINGS AND CAUTIONS	4
SYMBOL KEY	9
DEVICE AND ACCESSORIES DESCRIPTION	10
OPERATING INSTRUCTIONS	11
INTRODUCTION	13
STRUCTURE	13
SCOPE OF APPLICATION	13
CONTRAINDICATION	13
ENVIRONMENT REQUIREMENTS	13
TRANSPORTATION AND STORAGE CONDITIONS	14
ADDITIONAL REMARKS	14
SPECIFICATIONS	16
SYSTEM OVERVIEW	17
CLEANING AND MAINTENANCE INSTRUCTIONS	21
WARRANTY	22
TROUBLESHOOTING	23
EMC INFORMATION	25
ENVIRONMENT PROTECTION	28

PREFACE

Dear user:

The UPOC Oxygen Concentrator is for prescription use by patients requiring high concentrations of oxygen on a supplemental basis. It is a MIT(Made in Taiwan) product that the developing the product, designing the appearance, and manufacturing are entirely completed by FACIOX INC. in Taiwan.

This user manual contains the product's precautions, operating procedures, basic functions, specifications, troubleshooting information, repairment instructions, etc.. In order for you to operate this machine effectively, please read and understand the instructions in this manual carefully before using it.

Please note that some illustrations in this manual may not apply exactly the same for the machine you have.

The accessories for this device included humidifier bottles and oxygen tubes should be provided by FACIOX INC. or should meet the basic criteria for this specific product and with approval of the local country's healthy sector.

If you have any question or other concerns about this Oxygen Concentrator, please contact the supplier or manufacturer for service.

WARNINGS AND CAUTIONS



DANGER (If the following items are violated, it may cause serious injury or death)

- ◆ Measures to reduce the risk of burns, electric shock, fire, or injury. Avoid using Oxygen Concentrator while taking a bath. If it is necessary, please follow the doctor's or home care's instructions, and the Oxygen Concentrator must be placed in another room away from the bathroom. The recommended length of the oxygen tube should be less than 11 meters and the nasal cannula should not be bent. **DO NOT** place or store the Oxygen Concentrator where water or other liquid can spill into the enclosure. Oxygen supports combustion. Do not use this device while smoking or near an open flame.
- ◆ Improper use of the cord and plug may cause fire or other electric shocks and burns. Please **DO NOT** use the machine with damaged AC power cord.
- ◆ Before cleaning the dust of the Oxygen Concentrator's shell, please unplug the power plug to prevent electric shock.
- ◆ When the machine is working, please do not open the machine shell and internal box to avoid damage from touching the operating parts.



WARNING (The following items must be strictly implemented, otherwise may result in serious consequences)

- ◆ In order to prevent the Oxygen Concentrator from malfunctioning or encountering AC power source failure, users who need the Oxygen Concentrator at all time need to be equipped with other alternative oxygen supply devices (such as oxygen cylinders, etc.). When undergo malfunction or power failure, please remove the nasal cannula immediately.
- ◆ This product is not intended for life support. The patients in need for

respiratory therapy are suggested to follow the doctor's guidance when selecting the oxygen flow and time on the device.

- ◆ If any discomfort or abnormal reactions arise, please immediately stop using this product, and contact the manufacturer or doctor.
- ◆ The severe patients would need additional indications to operate the products or additional associated medicine. Please consult a doctor before use. If you have any adverse reactions, please inform your doctor immediately.
- ◆ If the device is used where the altitude is over 1828 meters, the oxygen purity will be less than 90% even when the device was set to its maximum flow capacity.
- ◆ Do not share the same set of nasal cannula to avoid cross infection caused by viruses or bacteria between users.
- ◆ Please use the provided humidifier bottle. Do not replace it before consulting the supplier or doctor, otherwise it may cause discomfort or difficulties with inhaling oxygen.
- ◆ The nasal cannula should not be placed under the coverlet or cushion and should not be sit. This can help you to use your device successfully and efficiently.
- ◆ When no one is using, it is recommended to turn off the power, and unplug the device to avoid catching fire.
- ◆ Be aware whether the AC power cord is too long that might affect others while using the oxygen concentrator. We suggest patients to operate the device near a power socket.
- ◆ For safety, the use of Oxygen Concentrator is prohibited during take-off, landing and through the whole flight.
- ◆ Do not perform maintenance or repairments while the machine is running.
- ◆ The machine is not allowed to be modified by the user.



CAUTIONS (Notice to the following content to avoid damaging

the machine)

- ◆ Do not open the machine's casing and remove the mainboard for maintenance. If the user found any issue or abnormality in the device such as emergency alarms, please do not disassemble and repair them without permission from supplier or manufacture. Contact the supplier or manufacture immediately for maintenance.
- ◆ It should be placed in a clean, no dust, noncorrosive and nonpoisonous environment. Do not use this product under the condition of strong magnetic field environment.
- ◆ The air entrance of the machine should be located in a well ventilated spot and should be in place where the least amount of pollutants are present (pollutants including / refers to: burning gas, exhaust system, air vents and other anesthesia vacuum exhaust port etc.).
- ◆ Please connect the separate (wall mounted) AC power outlet in order to use this product, do not connect the device's AC power cord with an extension cord. Do not use other electrical appliances simultaneously on the same plug when you are operating the oxygen concentrator.
- ◆ This machine is strictly prohibited in any contact with oil or grease, if they are needed for the connection between pipelines, valves, and connectors, the connection parts should be cleaned and patients should ensure the device is well cleaned and no oil (grease) was left on the device before installation. During the connection process, be careful to keep all parts clean, the connection of the whole machine is strictly prohibited to touch any combustible oily liquid.
- ◆ Ensure the bottom of the device is able to exhaust flow efficiently while using the machine. The back of the device should not lean on the wall, it should be placed at least 30 cm from the wall, or else it can cause damage to the machine due to overheating.
- ◆ This device should not be operated if the room temperature is above 35°C (95°F). Since the oxygen output of this device might be higher than the room temperature for at most 6°C (11°F). In this case, the released

oxygen and caused the oxygen coming out to raise above 41°C (106°F). As a result, respiratory tract can be hurt.

- ◆ This machine is not designed to switch on and off frequently, the time interval in between and on and off switch should not be less than 5 minutes, so to reduce the risk in shortening the compressor's life. The manufacturers recommend to space each operation for over 30 minutes.
- ◆ The machine can be only used as a medical oxygen supply, when the output of the gas in set at the rated flow, the purity can go up to 90%.
- ◆ Rotary flow control knob cannot be twisted too hard, or you might damage the spool. When the flow control knob is turned to the highest, and the flow indicator is zero, please turn off the power immediately and check the fault.
- ◆ When receive the products, cut off the tie on the bottom of the machine to operate and test, or else it can cause damage to the machine.



NOTICE (You must pay special attention to the information.)

- ◆ The purity will be up to 90% after the device is turned on for 10min.
- ◆ The nasal cannula used by patients need to be cleaned and sterilized before each operation.
- ◆ The humidifier bottle need to be cleaned every 2 to 3 days. The air filter foam need to be cleaned every 100 hours. The Air filter is recommended to be replaced after 1000 hours of use. If the device is use and place in an environment with excessive dust or soot, the above parts should be replace in a shorter time interval. To ensure the efficiency of the device, it is recommended to replace the parts within the suggested time interval.
- ◆ The humidifier bottle must be filled with only distilled water or cold water, please do not fill it with unfiltered tap water. The humidifier bottle should be cleaned every 2 ~ 3 days and recommended daily rinse during the summer. If the device was idled for more than one day, please remove water from the humidifier bottle and dry it for future use.

- ◆ DO NOT use cleaning products that contain bleach, chlorine, alcohol, or any kind of fragrance. DO NOT use moisturizing soap, antibacterial soap, or essential oil to clean the oxygen concentrator or nasal cannula. The aforementioned products might cause hardening in the parts of oxygen concentrator and can shorten its service life.
- ◆ Do not throw away the humidification bottle and nasal cannula at any place. The nearby waste disposal mechanism is the best choice.
- ◆ Please select the suitable humidifier bottle for your device, and fix it on the machine as required. Do not operate under a revolving situation. (Refer to the humidifier bottle connection indicator diagram) .
- ◆ When using the humidifier bottle, take note at the highest and lowest water level while filling up the bottle as required.
- ◆ When this machine is scrapped, please contact your local supplier or manufacturer.
- ◇ Please refer to “SYMBOL KEY” for UPOC symbol printed on the device, package, and in manual.
- ◇ Please refer to “DEVICE AND ACCESSORIES DESCRIPTION” to test the equipped components when received the device and before use and then operate it as “PRODUCT OPERATING PROCEDURE”.

SYMBOL KEY

	Off (Total power supply)		On (Total power supply)
	Follow the instructions		No open flame
	No Smoking		Date of manufacture
	Warnings		Serial Number
	Cautions		Up Put
	Double insulated		Avoid the rain Keep dry
	Type BF applied part		Fragile handle with care.
220V~	AC 220V		Forbidden to sit
	Non-ionizing electromagnetic radiation		
	Waste Electrical and Electronic Equipment Directive 2002/96/EC (WEEE Directive) after over the valid term within 3 years, the machine should be treated on local law or regulation requirement. To avoid hurt users and pollute environment.		

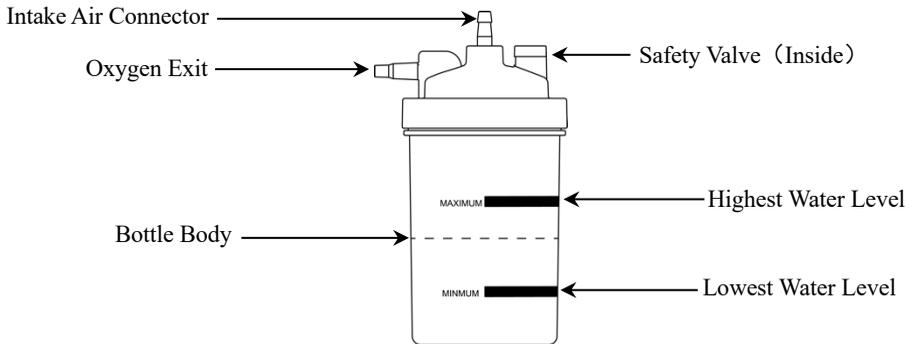
DEVICE AND ACCESSORIES DESCRIPTION

When you received the product, please open and check the package carefully. This product is equipped with upper and lower foam protection cover. If the protective cover is damaged, please check whether the product is damaged or not immediately. Then, check if there are any missing parts or accessories according to the packing list below.

Packing List			
Number	Product /Component Name	Quantity	Unit
1	Oxygen Concentrator	1	Unit
2	Humidifier Bottle	1	Piece
3	Nasal Cannula	1	Piece
4	Air filter foam	1	Piece
5	Nebulizer and Tube	1	Piece
6	User Manual	1	Piece

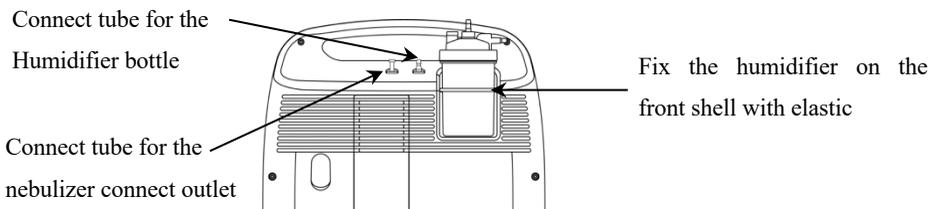
OPERATING INSTRUCTIONS

- 1、 The tie on the bottom of the machine needs to be cut off before turning on the device. The back of this machine should be far from the wall for least 30 cm, must be the bottom of the bubble board and other things to get open, to ensure that the bottom of the stack, in order to maintain the bottom of the air flow and ensure the normal heat.
- 2、 Connect the humidifier bottle and operate it as following instruction:



(Figure1)

- a. Fill the humidifier bottle with distilled water as instructed, DO NOT fill more or less than the marked water level. Put the cap back on the humidifier bottle (Figure 1);



(Figure 2)

- b. Fix the humidifier bottle on the front shell with strap and connect to the air intake connector through humidifier bottle tubes with the oxygen output spot. (Figure2) .



Notice: The most recommended place to install humidifier bottle are shown in figure 2

- 3、 Remove the AC power cord from the retaining strap, confirm if the switch is in the off position. Plug in the oxygen concentrator.
- 4、 After turning on the power of the machine, the power indicator on the display will stay on and that means the machine is working perfectly.
- 5、 Adjust the output flow of oxygen according to the needs of patients. Turn the flow adjustment knob counterclockwise to increase the flow, and turn it clockwise to decrease the flow.

- 6、 Insert the nasal cannula in the output spot of the humidifier bottle, and hang the nasal cannula on the user' ears, then insert the nasal plug in the nostrils and breathe. See Figure 3.



(Figure 3)

- 7、 When the machine is running, if the alarm goes off, please check if the plug is loose, or whether the external power supply has been interrupted.
- 8、 When done using the device, please turn off the power. Clean the nasal cannula according to the instructions. If it is not used at a regular base, please unplug the device, strap the AC power cord, and put the machine in place.

INTRODUCTION

Oxygen concentrator provides low flow oxygen therapy to patients at home. Our oxygen generator product produces concentrated oxygen from room air for delivery to a patient requiring low flow oxygen therapy. The oxygen from the air is concentrated using a molecular sieve and a pressure swing adsorption process. When the device is operating under room temperature, the oxygen in the air can be separated and transform into highly concentrated oxygen to meet the medical standard.

STRUCTURE

This product contains the body of oxygen concentrator, flowmeter, humidifier bottle, and nasal cannula.

SCOPE OF APPLICATION

The equipment is mainly suitable for medical use with oxygen.

CONTRAINDICATION

None

ENVIRONMENT REQUIREMENTS

1. Environmental Temperature: $5^{\circ}\text{C}\sim 35^{\circ}\text{C}$;
2. Relative Humidity: $\leq 80\%$;

3. Atmospheric Pressure: 86 kPa~106 kPa ;
No corrosive gas and strong magnetic field in the surrounding environment.

TRANSPORTATION AND STORAGE CONDITIONS

1. Storage and Transport Temperature: $-20^{\circ}\text{C} \sim +55^{\circ}\text{C}$;
2. Storage and Transport Humidity: $\leq 93\%$; without no condensation phenomenon;
3. Storage and Transport Atmospheric Pressure: 50 kPa~106 kPa.



Notice: When the storage temperature is under 5°C , the machine should be placed under the normal temperature environment for over four hours before use.

ADDITIONAL REMARKS

Classification of protection against electric shock: Class II

Classification according to the degree of protection against electric shock: Class BF

Classification according to the degree of protection of the liquid into the machine: IPX0 Device;

According to the degree of safety classification used in flammable anaesthetic mixture with air or oxygen or Nitrous Oxide anaesthetic mixture case: when do not use of flammable gas and air mixed with oxygen or Nitrous Oxide or anaesthetic mixture under the condition of the equipment;

classification according to the operation mode: Continuous operation;

No signal output and signal input part;

Usage Voltage: 220V~、60Hz;

Working: Continuous working;

With the application of oxygen free discharge part of the protective effect of defibrillation;

Oxygen Concentrator is for non-permanent installation equipment.

* Altitude: 0 meter to 1828 meter, oxygen purity $\geq 90\%$,
1829 meter to 4000 meter, $\leq 90\%$

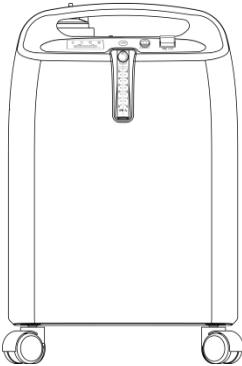
SPECIFICATIONS

Model	OC503
Working Voltage	110V or 220V \sim \pm 10% / 50 or 60 Hz \pm 3Hz
Rated Power (VA)	320
Output Pressure=0/7kPa, the flow range (L/min)	0.5 \sim 5
Output Pressure=0,the purity value (within 10min, up to the standard)	Oxygen flow=0.5 \sim 5 L/min, purity \geq 90%
Highest Flow	5 L/min
Highest Flow with 7kPa pressure, change of flow	\leq 0.5 L/min
Highest Flow, purity (within 10min, up to the standard)	\geq 90%
Range of adjusting flow	0 \sim 5L/min adjusted continuously
Net Weight (Kg)	14.3
Noise dB(A)	\leq 47
Dimension (mm)	L380 \times W249 \times H593
Oxygen output pressure	50kPa \pm 5kPa
Yellow low oxygen indicator light(Refer to 15.c)	When the purity of the oxygen < 82%, the yellow indicator will shin, contact the supplier, Make sure have the spare oxygen nearby when use it continuously.
Red alarm indicator light	When the red alarm indicator lights up with a continuous warning sound, please turn off immediately, use spare oxygen, and contact the supplier immediately.

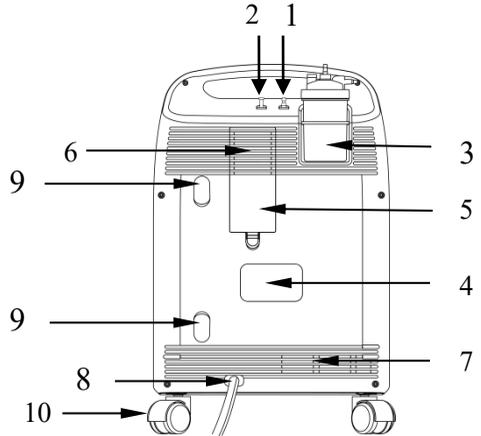
Compressor safety valve release pressure: 250kPa \pm 30kPa

Oxygen output temperature: \leq 46 $^{\circ}$ C

SYSTEM OVERVIEW



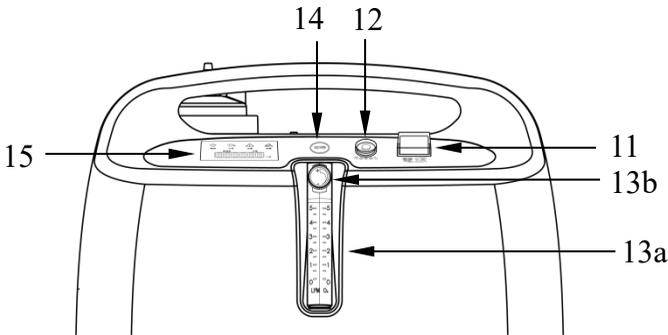
(Figure5)



(Figure 6)

* The following Component description refers to figure 5, figure6 *

1. **Oxygen outlet:** Connect to the humidifier bottle or nasal cannula by connecting tube
2. **nebulizer connect outlet**
3. **position to place humidifier bottle**
4. **Product label:** product performance, product serial number
5. **Air filter cover:** contains air filtering device and air filter foam.
6. **Air filter foam:** To prevent dirt, dust, fibers into the machine.
7. **Heat vent:** Located on the bottom of the machine to release heat from the device, the vent cannot be blocked at work.
8. **Straight out of the AC power cord** (with plug).
9. **AC power core bracket.**
10. **Castor (x4):** flexible mobile machine



(Figure 8)

11. Power switch : **O**: Off / **I**:On

12. Reset: Reset AC power while overloaded.

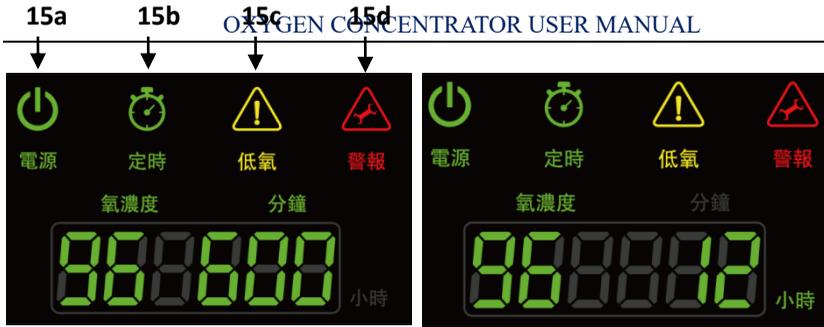
13. Oxygen flow meter

- a. The ball inside the flow meter shows the oxygen flow that higher position is faster flow and lower position is slower flow (L/min).
- b. **Flow meter knob**: Adjust the flow by turning right (slower flow) or left (faster flow) to control the flow to go faster or slower.



Note: Pay attention to the position of the ball on the flow meter and set the oxygen flow according to the doctor 's instructions. (The 0C503 series support the flow up to 5L/min. DO NOT set the flow over 5L/min.)

14. Timer button: When turned on the timer, its light will be on, and there will be 30 to 480 (30/60/90/120/180/240/300/360/420/480 minutes on ten steps) minutes with the timer sign light up on LED display. Every click on the button will increase the operating time by a specific ratio mentioned.



(Figure 15)

15e

15. LED Display(Reference figure 15)

- a. Green Power Indicator – Start
- b. Green Timer Indicator - Timer set and start
- c. Yellow Low Purity Indicator - Low Purity of Oxygen
- d. Red Alarm indicator - Contact the manufacturer
- e. Digital display slot:
 - Oxygen purity
 - Cumulative timing of each operation: time count in minutes and hours, it will show hours after 600 minutes.
 - Cumulative timing: Digital show for 6 digits.
 - Total operating hours after the machine leaves the factory.
 - When the machine is turned on or the timer function is cancelled, the total running hours of the machine will be displayed briefly, as shown in Figure 15.
 - Fault code description:
 - Lo-o2 - cycle fault alarm or purity < 82% \pm 3%
 - Lo-P - low pressure alarm
 - Lo- Po2 - cycle fault and low pressure alarm
 - Hi-P - High pressure alarm
 - Hi-Po2 - cycle fault and high pressure alarm
 - E07 - High temperature alarm
 - E08 - Oxygen port clogging alarm

When the oxygen concentrator is working, it will automatically monitor the machine status.

If the oxygen purity is below 82% then the machine will light up the Yellow Low Purity Indicator, issue an alarm and display the “Lo-o2” on LED display. Please turn off the power and contact your local service or the manufacture.

If a low pressure occurs, the machine will light up the Red Alarm Indicator, issue an alarm and display "Lo-P" on the LED display. The Oxygen Concentrator will stop working within one minute. Please turn off the power and contact your local service or the manufacturer.

If both cycle error and low pressure occur at same time, the machine will light up the Red Alarm Indicator, issue an alarm and display "Lo-Po2" on the LED display. The Oxygen Concentrator will stop working within one minute. Please turn off the power and contact your local service or manufacturer.

If a high pressure occurs, the machine will light up the Red Alarm Indicator, issue an alarm and display "Hi-P" on the LED display. The Oxygen Concentrator will stop working within one minute. Please turn off the power and contact your local service or the manufacturer.

If both cycle error and high pressure occur at same time then the machine will light up the Red Alarm Indicator, issue an alarm and display "Hi-Po2" on the LED display. The Oxygen Concentrator will stop working within one minute. Please turn off the power and contact your local service or manufacturer.

If the air temperature of the oxygen outlet is over 46 ° C, the machine will light up the Red Alarm Indicator, issue an alarm and the display "E07" on the LED display. The machine will stop working within one minute. Please turn off the power and contact your local service or manufacturer.

If the oxygen outlet or pipeline is blocked, the machine will light up the Red Alarm Indicator, issue an alarm and the display "E08" on the LED display. Please turn off the power; check the humidifier bottle and tube if it is blocked. If either one of them is blocked, please check if it is possible to clean it. If not, please contact your local service or manufacturer.

 **Note:** All alarms of this Oxygen Concentrator are considered low priority. The alarm system of the Oxygen Concentrator is set before leaving the factory, and users CANNOT change the settings of the alarm system.

CLEANING AND MAINTENANCE INSTRUCTIONS

- 1、 Clean the outside shell: one~twice per month. Turn off the power and disconnect from all power source before cleaning. Clean the device exterior using a wet towel with a mild household cleaner and wipe it dry.
- 2、 Clean the humidifier bottle: Use detergent and hot water to clean the humidifier bottle separately, or use white vinegar with water at the ratio of 1:3 mixtures of fungicides. Soak the humidifier bottle in the solution for 30 minutes and wipe it dry.
- 3、 Clean the air filter foam: take off the filter foam on the back side of the device exterior, clean it with detergent and rinse thoroughly with clean water. Dry in the air. Please don't use it if it is not dry thoroughly. This is

the important step to protect the machine. It is recommended to clean the air filter foam twice per month.

WARRANTY

- 1、 Warranty is free from defects in materials and workmanship under normal and proper use and when correctly maintained in accordance with applicable instructions, for a period of 1 year from the date of purchase..
- 2、 If the product fails to perform in accordance with the product specifications, repairment or replacement are provided – at its option – the defective material or part. This warranty does not cover damage caused by accident, misuse, abuse, alteration, and other defects not related to material or workmanship..

The following conditions are not free of maintenance :

- 1、 Products over the warranty period ;
- 2、 Fail to operate the device following the manual requirements ;
- 3、 Failure, scratch or damage due to transportation ;
- 4、 Done repairment, decomposition, assembly without allowance from professional service personnel.
- 5、 Normal damage of the wearing parts ;
- 6、 Failure and damage due to nature causes (e.g. fire, flood, earthquake, etc.).

TROUBLESHOOTING



In order to avoid electric shock, please do not open the device. The covers should only be removed by authorized service personnel..

The table below lists common problems and actions you can take. If you are unable to resolve a problem, please contact your home care provider. .

Symptom	Possible Cause	Remedy
A. Unit does not operate. Power light is off when the power switch is “on”. Audible alarm is pulsing and Service Required light is flashing.	1. Power cord not properly inserted into wall outlet.	Check power connection at the wall outlet. On 230 voltage units, check the back of the unit.
	2. No power at wall outlet.	Check your home circuit breaker and reset if necessary. Use a different wall outlet if the situation occurs again.
	3. Oxygen concentrator circuit breaker activated	Press the concentrator circuit breaker button (if equipped) located below the power switch. Use a different wall outlet if the situation occurs again.
B. Unit operates within 1min; the Power light is on when the Power switch is “On”. Red Service Required light is illuminated. Audible alarm may be sounding.	1. Air filter foam is blocked.	Check the Air filter foam. If the air filter foam is dirty, wash it by following the cleaning instructions on page 19.
	2. Exhaust is blocked.	Check the exhaust area; make sure there is nothing restricting the unit exhaust.
	3. Blocked or defective nasal cannula.	Detach nasal cannula from the device. If proper flow is restored, clean or replace nasal cannula if necessary.
C. Unit operates the power light is on when power switch is “on”, audible low-frequency vibration sound is detected.	The strap on the bottom of the machine was not cut off	Turn off and unplug the machine , then put the machine on the floor to cut off and remove the strap.

<p>D. Both the green Normal Oxygen and the yellow Low Oxygen lights are either on or off.</p>	<p>O.C.I malfunction</p>	<p>Contact your supplier</p>
<p>E. Yellow Low Oxygen light is on or the yellow low Oxygen light is on and the intermittent audible Signal is sounding.</p>	<p>1. Flow meter is not properly yet.</p>	<p>Ensure the flow meter is properly set to the prescribed.</p>
	<p>2. Air filter foam is blocked.</p>	<p>Check the air filter foam. If the air filter foam is dirty, wash it following the cleaning instructions on page 6.</p>
	<p>3. Exhaust is blocked.</p>	<p>Check the exhaust area: make sure there is nothing restricting the unit exhaust.</p>
<p>F. Red Service Required light is on and an intermittent audible signal is sounding.</p>	<p>1. Flow meter is not properly yet.</p>	<p>Ensure the flow meter is properly set as instructed.</p>
	<p>2. Air filter is blocked.</p>	<p>To check if the air filter have blocked or jammed, please clean up the clutter. Check whether the air filter is dirty, if dirty, please timely replace as required on page 6.</p>
	<p>3. Exhaust is blocked.</p>	<p>Check the exhaust area: make sure there is nothing restricting the unit exhaust. If the above remedies do not work, contact your Medical provider.</p>
<p>If the machine is still not working properly, please contact the product supplier or service point.</p>		

* If there is no special description, please follow the instructions above.

EMC INFORMATION

Guidance and manufacturer's declaration-electromagnetic emissions

The ME is intended for use in the electromagnetic environment specified below.
The customer or the user of the ME should assure that it is used in such an environment.

Emission test	Compliance	Electromagnetic environment-guidance
RF emissions CISPR 11	Group 1	The <u>ME</u> uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class B	The <u>ME</u> is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations /flicker emissions IEC 61000-3-3	Compliance	

Guidance and manufacturer's declaration-electromagnetic immunity

The ME is intended for use in the electromagnetic environment specified below.

The customer or the user of the ME should assure that it is used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment-guidance
Electrostatic discharge(ESD) IEC 61000-4-2	+ 6 kV contact + 8 kV air	+ 6 kV contact + 8 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%
Electrical fast transient/burst IEC 61000-4-4	+ 2kV for power supply lines + 1kV for input/output lines	+ 2kV for power supply lines Not applicable	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	+ 1kV line(s) to line(s) + 2kV line(s) to earth	+ 1kV differential mode Not applicable	Mains power quality should be that of a typical commercial or hospital environment.
Voltage Dips, short interruptions and voltage variations on power supply input lines IEC C 61000-4-11	<5% UT(>95% dip in UT) for 0,5 cycle 40% UT(60% dip in UT) for 5 cycles 70% UT(30% dip in UT) for 25 cycles <5% UT(>95% dip in UT) for 5 s	<5% UT(>95% dip in UT) for 0,5 cycle 40% UT(60% dip in UT) for 5 cycles 70% UT(30% dip in UT) for 25 cycles <5% UT(>95% dip in UT) for 5 s	Mains power quality should be that of a typical commercial or hospital environment. If the user of the <u>ME</u> requires continued operation during power mains interruptions, it is recommended that the

			<u>ME</u> be powered from an uninterruptible power supply or a battery.
Power frequency(50, 60 Hz) magnetic field IEC 61000-4-8	3A/m	3A/m	The <u>ME</u> power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
NOTE UT is the A.C. mains voltage prior to application of the test level.			

Guidance and manufacturer's declaration-electromagnetic immunity

The ME is intended for use in the electromagnetic environment specified below. The customer or the user of the ME should assure that is used in such and environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment-guidance
Conducted RF IEC 61000-4-6	3 Vrms 150 KHz to 80 MHz	3 Vrms	Portable and mobile RF communications equipment should be used no closer to any part of the <u>ME</u> including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance: $d = 1,2 \sqrt{P}$
Radiated RF IEC 61000-4-3	3 V/m 80MHz to 2,5 GHz	3 V/m	$d = 1,2 \sqrt{P}$ 80MHz to 800 MHz $d = 2,3 \sqrt{P}$ 800MHz to 2,5 GHz Where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer

			<p>and d is the recommended separation distance in meters (m).</p> <p>Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, a should be less than the compliance level in each frequency range b</p> <p>Interference may occur in the vicinity of equipment marked with the following symbol:</p> 
<p>NOTE1 At 80 MHz and 800 MHz, the higher frequency range applies.</p> <p>NOTE2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.</p>			
<p>a Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the <u>ME</u> is used exceeds the applicable RF compliance level above, the <u>ME</u> should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the <u>ME</u>.</p> <p>b Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.</p>			

ENVIRONMENT PROTECTION

Dispose of the device in accordance with local regulations. When the product is at the end of its life and the user intends to discard the product, it must be disposed of separately from other waste. Please contact your local agency or waste disposal service center for instruction and local disposal laws.