User Manual OXYGEN CONCENTRATOR

Apply to JLO-590 series and JLO-390 series Revision: V1.4

Date: 30th Dec, 2022







Read the instructions carefully before using the device

CAUTION: EU law restricts this device to sale by or on the order of a physician. The unit should only be used as prescribed.

LIMITED WARRANTY

Shenzhen Homed Medical Device Co., Ltd ("Homed Medical Device") is pleased to provide this warranty which is only for the benefit of the original purchaser of new equipment from Homed Medical Device or an authorized distributor. This warranty gives you specific legal rights and you may also have other legal rights which vary from state to state.

Homed Medical Device warrants this product to be free from defects in material and workmanship for a period of three years from the date of purchase. If within such warranty period the product proves to be defective, the product will be repaired or replaced at the option of Homed Medical Device. This warranty provides for the replacement of defective parts and labor performed at Homed Medical Device Authorized Service Centers. This warranty does not include normal wear and tear, shipping charges, or routine maintenance items. Homed Medical Device's sole obligation, and your exclusive remedy, under this warranty are limited to such repair and/or replacement.

For warranty service, please contact Homed Medical Device Technical Support at the toll-free number below. Do not return products or defective parts to Homed Medical Device without first contacting us for our prior consent.

THE DURATION OF ANY IMPLIED WARRANTY WHATSOEVER, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, SHALL BE LIMITED TO THE DURATION OF THE EXPRESS WARRANTY PROVIDED HEREIN. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THIS LIMITATION MAY NOT APPLY TO YOU.

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INDICATIONS FOR USE

The Shenzhen Homed Medical Device Co., Ltd JLO-590 series and JLO-390 series Oxygen Concentrator is intended for continuous or intermittent use as a source of up to 5 liters per minute of supplemental oxygen therapy in the hospitals and healthcare units. It should not be used in life supporting or life sustaining applications. Oxygen Concentrator uses the PSA principle, produces oxygen which concentration is within 90%-96% (V/V) from air for medical purpose.

Intended use: Oxygen concentrator is intended to provide supplemental oxygen to patients with chronic pulmonary diseases such as chronic bronchitis, emphysema, asthma, or lung cancer, those in the terminal stage of cancer, or any patient requiring supplemental oxygen. The oxygen concentrator is used in hospitals and healthcare units, it is available by prescription only and is not intended to support or sustain life.

Service life: 3 years.

INTRODUCTION

Oxygen makes up about 21% of the air we breathe and everyone needs a certain amount of oxygen to function properly. Your physician prescribes supplemental oxygen therapy for you because your body is not getting enough oxygen from room air alone. Concentrators work by separating oxygen from room air and delivering a metered flow of high-purity (~90%) oxygen to meet your needs. It is important that you do not increase or decrease the flow setting unless you are directed to do so by your physician or provider.

Description of symbols			
Symbol	Explanation		
	Manufacturer		
EC REP	Authorised representative in the European Community		
LOT	Lot Number		
SN	Serial Number		
<u>M</u>	Date of Manufacture		
X	Waste Electrical and Electronic Equipment (WEEE)		
CE	The CE conformity marking		
	Refer to instruction manual/ booklet		
	Class II electrical equipment		
†	Type BF applied part		

IMPORTANT SAFETY INFORMATION

This manual uses the following convention to highlight information relating to hazards and precautions associated with your oxygen concentrator.

DANGER Hazards that will cause serious injury or death

WARNING Hazards that may cause serious injury

CAUTION Hazards that may affect your product or property

DANGER - FIRE HAZARD, NO SMOKING

This device supplies high concentrations of oxygen which promotes rapid burning. Do not allow smoking, open flames, or other ignition sources within 5 feet of this device or its accessories (tubing, cannulas, etc.). Oil, grease, or other petroleum products should NEVER be used on or around the unit.

Do not use extension cords with this unit.

Warnings and Cautions

Warnings:

- * In the event of an alarm, you observe the device is not working properly, or if you feel discomfort, consult your provider or your physician immediately.
- * This unit is not to be used for life support. Geriatric, pediatric, or any other patients unable to communicate discomfort while using this machine may require additional monitoring. Patients with hearing and/or sight impairment(s) may need assistance with monitoring alarms.
- * The device supplies high-concentration oxygen that promotes rapid burning. Do not allow smoking or open flames within 5 feet (about 1.5 meters) of this device, or any oxygen-carrying accessory.
- * Use no oil, grease, or petroleum-based products on or near this device.
- * Do not modify this equipment without authorization of the manufacturer.
- * Do not use if the power cord is damaged.
- * Your level of oxygen flow is a prescription dose based on your individual needs. Do not increase or decrease the oxygen flow without consulting your physician.
- * Oxygen therapy may be hazardous for certain individuals. Do not use this device unless it has been prescribed for you by a physician
- * Care should be taken to prevent the unit from getting wet or allowing water to enter the unit.
- * Do not allow either the air intake or the air outlets to become blocked, check the air inlet and outlet carefully before use, and locate them in a well-ventilated space.
- * Do not operate, store or transport the device beyond its regulated environmental conditions, or the device may be damaged or not functioned properly.
- * Federal (USA) law restricts this device to sale by order of a physician.

Cautions

- * It is very important to select the prescribed level of oxygen flow. Do not increase or decrease the flow until you first consult your physician.
- * The device may be used during sleep under the recommendation of a qualified clinician.
- * Operate the device while it is placed on a steady and horizontal flat.
- * Disconnect the power cord from the electrical outlet before you clean or service the unit.
- * Unplug the power cord from the AC wall outlet before cleaning.
- * Do not remove the cover or attempt to disassemble this device by unauthorized person, contact your equipment provider if service is required.
- * If the foreign object falls into the device, please stop the it immediately, unplug the power supply, and contact the professional for inspection.
- * Use of certain humidifiers and administration accessories not specified for use with this oxygen concentrator may impair the performance.

- * After each shutdown, it needs ten minutes of intermittent to restart the device.
- * Please dispose in legal way in compliance with local law or contact the relative staff for environmental protection.
- * After powering on the device, it needs 30 minutes for the device to reach a stated performance.
- * The device should be located so as to avoid pollutions or fumes.
- * Please use Oxygen tube which has CE certification.

IMPORTANT FEATURES



- 1. Power Switch
- 2. Oxygen Outlet
- 3. Flow Control Knob
- 4. Flow Meter
- 5. Air Filter
- 6. Power Cord Strap
- 7. Power Cord
- 8. Circuit Breaker
- 9. Normal Oxygen (green) light
- 10. Low Oxygen (yellow) light
- 11. Equipment Alarm (red) light
- 12. Power (green) light

13. Humidifier

Serial	Name	Quantity
Number		-
1	oxygen unit	1
2	Manual	1
3	Product qualification certificate	1
4	Quality assurance card	1
5	Inlet filter cotton	2
6	Humidifier and joint	1
7	Connecting pipe	1
8	Nasal oxygen tube	1

CONCENTRATOR SET-UP

- Position your unit within reach of an electric outlet in a location that allows at least 6 inches from walls, curtains, or other objects that may block the flow of air to your unit. Avoid locations where fumes are present or confined spaces with poor air circulation.
 DANGER Keep concentrator and oxygen tubing at least 5 feet away from objects that are hot, sparking, or contain open flames.
- Check to make sure the foam air filters on either side of your concentrator are free from excessive dust or debris. Proper cleaning instructions can be found in the Cleaning & Routine Maintenance section of this manual.
 - re that
- 3. If you do not use an external humidifier, check to make sure that your oxygen tubing is securely applied to the Oxygen Outlet.

If you use an external humidifier, check to make sure it is filled correctly and all connections are secure. When the concentrator is operating, a steady stream of bubbles will be present in the humidifier if all connections are leak-tight.



4. Insure that the power cord and plug are not damaged and then insert the plug directly into a wall outlet.

CAUTION - Do not use extension cords or power adapters

PREPARATION BEFORE OPERATION OF OXYGEN GENERATOR

- 1. The oxygen generator and the oxygen pipe exit keep at least 1 meters distance to prevent the fire caused by the heat.
- 2. Please check whether the air filter is clean before using the machine.
- 3. Install the approved fittings at the oxygen outlet.
- 4. If you do not use a humidifier, please make sure that the nasal oxygen tube is connected to the oxygen outlet.
- 5. If you use a humidifier, please ensure that the humidifier and oxygen generator installation method: the top of the humidifier bottle interface access oxygen outlet, humidification bottle placed in the concave position. (as shown on the right)
- 6. Connect the oxygen pipe to the exit of the humidifier bottle. (as shown on the right)
- 7. Take the power cord out of the belt completely, make sure the power switch is in the closed state, and then plug the plug into the wall mounted power outlet. Improper use of power cords and plugs may cause burns, fires, or other electrical shocks. Do not use other types of power cords and power adapters and power cords damaged machines.

OPERATING INSTRUCTIONS

1. Flip the Power Switch to the "On" position. The green Power light will illuminate, the audible alarm with sound briefly, and the unit will start to run in approximately 10 seconds.



2. Adjust the Flow Control Knob until the ball in the flow meter is centered on your prescribed flow setting.

NOTE – Your provider may preset your prescribed flow setting so the flow cannot be adjusted.

! WARNING – Do not increase or decrease your prescribed oxygen flow without consulting your provider and/or physician.



3. Your JLO-590i includes an internal sensor that continually monitors oxygen purity. The green *Normal Oxygen* light indicates that the oxygen purity is acceptable. If the oxygen purity falls below an acceptable level, the yellow Low Oxygen light will illuminate. You should check the Troubleshooting section of this manual and call your provider if the problem persists.

If the oxygen level continues to fall, the red *Equipment Alarm* light will illuminate and an audible alarm will sound.

NOTE – It will normally take 4 minutes for the green *Normal Oxygen* light to

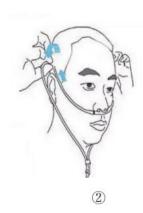
illuminate when the unit is turned on. You may use your concentrator during this warm-up period.

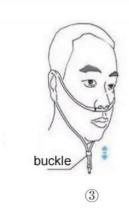
Description of alarm situations

Status	Audible Alarm	Light	Indicates	Action	
Alarm		concentrat device and contact wit		It is recommended to close the device and contact with distributors or manufacturers in time	
Alarm	Alarm sound	Red	Oxygen concentrat ion below 73%.	It is recommended to close the device and contact with distributors or manufacturers in time	

4. Before use, Nasal oxygen tube should be correctly connected, and the user can wear the tube as below .







The oxygen inhalation outlet of the nasal oxygen tube is completely into the nostrils, and the tube is lifted up at the same time around the ears.



Slide the buckle upward and lock the nasal oxygen tube. The tightness is determined by personal comfort. If slide the buckle downward, then can loose the nasal oxygen tube.

CLEANING & ROUTINE MAINTENANCE

Air Filters

It is recommended that the air filter cotton be checked for 300 hours before the oxygen generator is running. If the filter cotton is completely black, please replace it in time, and the filter cotton can be purchased from the dealer.

The air filters located on either side of the cabinet should be cleaned at least once a week to keep your concentrator running properly.

- 1. Turn off your concentrator and remove the foam filter inserts from the sides of the cabinet.
- Wash the filters in warm water and dishwashing soap, rinse thoroughly, and dry with a towel. The filter should be completely dry before reinstalling.
- ! **CAUTION** Do not operate the concentrator without the filters installed or while the filter is damp.
 - When the concentration of oxygen in air is abnormal, there is a slight error in the concentration of the machine.

Oxygen Tubing, Humidifier, and Accessories

Clean and/or replace your oxygen tubing, humidifier, and accessories as directed by your provider.

Humidifier

If your doctor specifies the use of humidification bottles, please clean the humidifier before use every day. Follow the instructions for the manufacturer of the humidifier bottle. If there is not cleaning instructions, please follow the following procedures:

Note: The humidification bottle does not adhere to the outlet, which may lead to the fog of oxygen inhalation pipeline.

- 1. Separate the humidifier bottle with detergent and warm water.
- 2. Soak the separated humidification bottle in a solution of 1 part distilled white vinegar and 3 parts hot water for 30 minutes.
- 3. Soak the humidifier thoroughly with warm water for 3 minutes.
- 4. Fully flush with tap water, dry with a clean.

Exterior Cabinet

You may clean the exterior of the concentrator cabinet as needed using a damp cloth or sponge with a mild household cleaner and wipe dry.

- ! WARNING Disconnect the power cord from the electrical outlet before cleaning.
- ! WARNING Do not apply liquid directly to the cabinet or use any petroleum-based solvents or cleaners.

Routine maintenance

In order to make better use of oxygen generator, the machine runs for 2000 hours each time, it is recommended that you contact the service provider for maintenance.

MINOR TROUBLESHOOTING GUIDE

Problem	Probable Cause	Solution
Unit does not	The power cord is	Connect power cord to wall outlet.
operate.	disconnected.	
Continuous	N 4 4 - 4	Check power source, fuses, breakers,
audible alarm sounds	No power at outlet.	switches, etc.
indicating power		Remove filter door on left side of the
failure.	Concentrator circuit	concentrator and momentarily press the
	breaker has tripped.	circuit breaker reset button.
		Contact your provider.
Low Oxygen	Air flow to the	Check condition of air filters and clean if
light (yellow) is	concentrator is	necessary.
illuminated	blocked.	Remove any items that may be blocking air
		flow to the concentrator.
		new to the concentration.
	The outlet flow is set	Adjust Flow Control Knob to prescribed
	greater than 5	setting
	liter/min.	
Fauinment	Low concentration	Contact your provider. See above.
Equipment Alarm light (red)	Low concentration	See above.
is illuminated	Low outlet flow	Adjust Flow Control Knob to prescribed
io marmiato a		setting.
		Check oxygen tubing and accessories for
		blockage.
		Contact your provider.
Any other		Turn off your unit, switch to your reserve
problems		oxygen supply (if provided), and contact
		your provider.

SPECIFICATIONS -OXYGEN CONCENTRATOR

(Specifications in brackets apply to JLO390 series)

(-)		
Oxygen Outlet Flow	0.5 – 5 LPM (0.5-3LPM)	
Maximum Outlet Flow	5 LPM (3LPM)	
Low Flow Alarm	Less than 0.5 LPM	
Outlet Pressure	5 +/- 0.5 psig (3 +/- 0.5 psig)	
Oxygen Concentration	93% +/- 3% (at 5 LPM or 3 LPM)	
Electrical Rating	220 – 240VAC, 50 Hz, 2.4 Amps	
Operating Voltage Range	220 – 240VAC, 50 Hz	
Operation Environment Conditions	5 °C-40 °C	
	30-75% Relative Humidity (non-condensing)	

	Up to 7,500 feet (about 2286 meters) higher altitudes may affect performance	
	<u> </u>	
Warm-up time	2-3 minutes	
Dimensions	28" H x 17" W x 15" D	
Weight	Product: 36 pounds	
	Shipping: 42 pounds	
Sound Level	60 dBa	
OCI Thresholds	Low Oxygen (yellow): 84% +/- 2%	
	Equipment Alarm (red): 73% +/- 2%	
Storage Environmental Conditions	-40 °C to 70 °C, 10% to 100% R.H.	
Equipment Class and Type	Class II (Double Insulated)	
	Type BF (Applied Part)	
Safety Standard	EN 60601-1	
EMC Standard	EN 60601-1-2	

Warranty and Validity

Validity of maintenance: 3 years.

The legal provisions in this respect apply. The warranty is limited to detective material and workmanship. Damage through misuse or modification is not covered. The warranty is only valid if the product has neither been opened nor subjected to violence or willful damage and it is return with the original receipt. Contact your dealer if you have any complaints. For further information contact the customers service (TeL: +86 0755 29821671/29821673/29821675, E-mail: sales-oe@systems.citizen.co.jp). In the event of warranty claims being deemed to be justified, the customer concerned will be supplied with a replacement product. The customer is only entitled to receive a comparable replacement product.

EMC Information Important Notice

- * Oxygen Concentrator meets the requirement of electromagnetic compatibility in IEC60601-1-2.
- * The user needs to install and use according to electromagnetism compatibility information which is attached with it.
- * Portable and mobile RF communication devices may influence OC performance, so OC should be kept away from them during using.
- * Guidance and manufacturer's declaration stated in the appendix.

* Oxygen Concentrator should not be used adjacent to or stacked with other equipment and that if adjacent or stacked use is necessary, the Oxygen Concentrator should be observed to verify normal operation in the configuration in which it will be used.

Table 1 Guidance and manufacturer's declaration -electromagnetic emissions

Caldance and mandiactarer 3 decidration —creet omagnetic cimesions					
This equipment is intended for use in the electromagnetic environment specified					
below.	below.				
The user of this equipment should assure that is used in such an environment.					
Emissions test	Compliance Electromagnetic environment - guidance				
RF emissions CISPR 11	Group 1	The Oxygen Concentrator 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 Oxygen Concentrator is suitable for use in all			

Harmonic emissions	Class A	establishments other than domestic and those directly		
IEC 61000-3-2	Class A	connected to the public low-voltage power supply		
Voltage fluctuations		network that supplies buildings used for domestic		
/ flicker emissions	Compliance	purposes.		
IEC 61000-3-3				

NOTE

Table 2 Guidance and manufacturer's declaration - electromagnetic immunity This equipment is intended for use in the electromagnetic environment specified below. The user of this equipment should assure that is used in such an environment. IEC 60601 test Electromagnetic environment -Compliance level **Immunity test** guidance level ±6 kV contact ± 6 kV contact Floors should be wood, concrete or Electrostatic ±8 kV air ± 8 kV air ceramic tile. If floors are covered with discharge (ESD) synthetic material, the relative humidity IEC 61000-4-2 should be at least 30 %. ±2 kV for power ±2 kV Mains power quality should be that of a Electrical fast transient/burst typical commercial or hospital supply lines IEC 61000-4-4 environment. Surge ± 1 kV line(s) to ± 1 kV differential Mains power quality should be that of a typical commercial or hospital line(s) mode ± 2 kV line(s) to IEC 61000-4-5 ± 2 kV common environment. earth mode Voltage dips, short <5 % *U*T <5 % *U*T Mains power quality should be that of a interruptions and (>95 % dip in typical commercial or hospital for 0.5 cycle environment. If the user of the Oxygen voltage variations UT) Concentrator requires continued on power supply for 0.5 cycle 40 % *U*T input lines 40 % *U*T operation during power mains interruptions, it is recommended that (60 % dip in *U*T) for 5 cycles IEC 61000-4-11 the OC be powered from an for 5 cycles 70 % *U*T 70 % *U*T uninterruptible power supply or a (30 % dip in *U*T) for 25 cycles battery. for 25 cycles <5 % UT <5 % UT (>95 % dip in for 5 s UT) for 5 s Power frequency 3 A/m 3 A/m Power frequency magnetic fields should be at levels characteristic of a (50/60 Hz) typical location in a typical commercial magnetic field or hospital environment. IEC 61000-4-8

Table 3

UT is the a.c. mains voltage prior to application of the test level.

Guidance and manufacturer's declaration - electromagnetic immunity

This equipment is intended for use in the electromagnetic environment specified below.

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

	IEC 60601 test	d assure that it is used in such an environment.	
Immunity		Compliance	Electromagnetic
test	level	level	environment – guidance
Conducted RF IEC 61000-4- 6 Radiated RF IEC 61000-4- 3	3Vrms 150kHz to 80MHz 3V/m 80MHz to 2.5GHz	3V 3V/m	Portable and mobile RF communications equipment should be used no closer to any part of the Oxygen Concentrator, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance $d = 1.2\sqrt{P}$ $d = 1.2\sqrt{P}$ 80MHz to 800MHz $d = 2.3\sqrt{P}$ 800MHz to 2.5GHz where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in meters (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, ashould be less than the compliance level in each frequency range. Interference may occur in the vicinity of equipment marked with the following symbol: (((•)))

NOTE 1 At 80MHz and 800MHz, the higher frequency range applies.

NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

- 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 Oxygen Concentrator is used exceeds the applicable RF compliance level above, the Oxygen Concentrator should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the Oxygen Concentrator.
- b Over the frequency range 150kHz to 80MHz, field strengths should be less than 3V/m.

Table 4

Recommended separation distances between portable and mobile RF communications equipment and the Oxygen Concentrator

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

Rated maximum	Separation distance according to frequency of transmitter m			
output power of	150kHz to 80MHz	80MHz to 800MHz	800MHz to 2.5GHz	
transmitter W	$d = 1.2\sqrt{P}$	$d = 1.2\sqrt{P}$	$d = 2.3 \sqrt{P}$	
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 transmitters rated at a maximum output power not listed above, the recommended separation distance d in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

NOTE 1 At 80MHz and 800MHz, the separation distance for the higher frequency range applies.

NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.



Caution: Instructions for a correct disposal of the product

Disposal requirement: Comply with WEEE directive, it must be disposed of in accordance with the locally applicable regulations, not with domestic waste.



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