JUMAO | 巨贸

CE 0123

Document No.: JM/UM5A Ni（A/0）

OXYGEN CONCENTRATOR
JMC5A Ni
USER'S MANUAL

(Part No.:0209175 Rev. E Date: Jan.16.2016)

DO NOT OPERATE THIS UNIT WITHOUT FIRST READING AND UNDERSTANDING THIS MANUAL!

SAVE THIS MANUAL FOR FUTURE USE.

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

1、SAFETY NOTES

⚠WARNING: Users who require continuous oxygenation must plan for alternate reserve sources of power and oxygen in the event of a failure or loss of power and oxygen. This device is to be used as an oxygen supplement and is NOT considered life-supporting or life-sustaining!

symbols	contents
⚠	describing the principal RISK(S) foreseen (e.g. “Causes burns”, “Risk of explosion”, etc.).
⊘	describing what is prohibited (e.g. “Do not open”, “Do not drop”, etc.).
❗	Describing required action (e.g. “Wear protective gloves”, “Scrub before entering”, etc.).

1.1 Important Information

⚠ Risk of electric shock.

⊘ DO NOT disassemble. Refer serving to qualified service personnel.

⊘ DO NOT modify this equipment without authorization of the manufacturer。

❗ Read the following information before operating this product.

1.2 Before Installation

❗ The concentrator should always be kept in the upright position to prevent damage during transport.

❗ If the electrical power source becomes unstable, discontinue use and find an alternate source.

❗ Only use stable and safe electrical power sources.

❗ The oxygen concentrator cabinet should ONLY be opened by an authorized equipment provider.

1、SAFETY NOTES

1.3 Placement

- You may select a room in your house where using your oxygen concentrator would be most convenient. Your concentrator can be easily roll from room to room on its casters.

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

Be certain to place the oxygen concentrator so that all sides are at least 10 centimeters (4 inches) away from walls, draperies, furniture, or similar surfaces. Avoid deep pile carpets and heaters, radiators or hot air registers.

Do not place the unit in a confined area.

The oxygen concentrator MUST be kept away from heat, fire and excessive water sources and conditions.

The oxygen concentrator should be located so as to avoid pollutants or fumes.

Do Not place items on top of the concentrator.

NEVER block the air openings of the unit or place it on a soft surface, such as a bed or couch, where the concentrator may tip or fall. Keep the openings free from lint, hair and the like.

1、SAFETY NOTES

1.4 Fire Warning and Explosion

Keep the concentrator away from flammable and explosive areas.

Users MUST NOT SMOKE while using this device. Keep all matches, lighted cigarettes or other sources of ignition out of the room in which this product is located. NO SMOKING signs should be prominently displayed. Textiles and other materials that normally would not burn are easily ignited and burn with great intensity in oxygen enriched air. Failure to observe this warning can result in severe fire, property damage and cause physical injury or DEATH.

The use of oxygen therapy requires that special care be taken to reduce the risk of fire. Any materials that will burn in air, and some that will not, are easily ignited and burn rapidly in high concentrations of oxygen. For safety concerns, it is necessary that all sources of ignition be kept away from the product and preferably out of the room in which it is being used.

A spontaneous and violent ignition may occur if oil, grease or greasy substances come in contact with oxygen under pressure. These substances MUST be kept away from the oxygen concentrator, tubing and connections, and all other oxygen equipment.

DO NOT use any lubricants unless recommended by manufacturer.

1、SAFETY NOTES

1.5 Maintenance

⚠ Oxygen concentrator shall be maintained once a year at least. Only the professional healthcare person familiar with the operation of this device (e.g. personnel trained or approved by manufacturer), can the maintenance or debugging of oxygen concentrator.

⃠ DO NOT service or maintain while patient in use.

- For optimum performance, manufacturer recommends that the concentrator be on and running for a minimum of 30 minutes at a time. Shorter periods of operation may reduce maximum product life.

1.6 Radio Frequency Interference

⚠ Most electronic equipment is influenced by Radio Frequency Interference (FRI). Always exercise CAUTION with regard to the use of portable communications equipment in the area around such equipment.

⚠ Energy of Radio Frequency of this machine is just for device operation use, so the Radio Frequency is very low, will not affect the running of other electric equipment around regard to the use of portable communications equipment in the area around such equipment.

1、SAFETY NOTES

1.7 To Reduce the Risk of Burns, Electrocution, Fire or Injury to Persons.

⚠ Avoid using while bathing. If continuous usage is required by the physician's prescription: The concentrator must be located in another room at least 2.5 meters (8.2 feet) from the bath.

⃠ DO NOT come in contact with the concentrator while wet.

⃠ DO NOT place or store product where it can drop into water or other liquid.

⃠ DO NOT reach for product that has fallen into water. UNPLUG IMMEDIATELY and call Qualified Service Personnel for examination and repair.

❗ A product should NEVER be left unattended when plugged in.

⚠ This device is to be used only in accordance with the prescription of a physician and this User's Manual. If at any time the patient or attendant concludes that the patient is receiving an insufficient amount of oxygen, contact the provider and/or physician immediately. No adjustments should be made to the flow rate unless prescribed by a physician.

❗ Close supervision is necessary when this product is used near children or physically-challenged individuals.

❗ Use this product for only intended use as described in this manual.

⃠ DO NOT use parts, accessories or adapters other than those authorized by manufacturer. Use of certain humidifiers and administration accessories not specified for use with this oxygen

concentrator may impair the performance.

If replacement parts used for the periodic servicing by an approved technician do not comply with the manufacturer's specifications, the manufacturer is not responsible in the event of an accident.

DO NOT connect the concentrator in parallel or series with other oxygen concentrators or oxygen therapy devices.

In certain circumstances oxygen therapy can be hazardous. Manufacturer recommends that you seek medical advice before using this product.

Avoid creation of any spark near medical oxygen equipment. This includes sparks from static electricity created by any type of friction.

If the concentrator has a damaged cord or plug, if it is not working properly, if it has been dropped or damaged, call Qualified Service Personnel for examination and repair.

Keep the cord away from HEATED or HOT surface.

Do not move or relocate concentrator by pulling on the cord.

NEVER drop or insert any object into any opening.

2、FEATURES

2.1 Summary

JMC5A Ni oxygen concentrator is intended for individual use as an oxygen supplement device in a home or care facility. The patient is an intended operator. It is an electronically operated device that separates oxygen from ambient air. It provides high concentration of oxygen directly to you through a nasal cannula or other methods. Clinical studies have documented that oxygen concentrator are therapeutically equivalent to other types of oxygen delivery systems.

This user's manual will tell you about your concentrator and will serve as a reference as you use your concentrator.

2.2 Characteristics

- Oxygen concentrator make up of mainframe、 humidifier and Flowmeter
- Reliable, safe, complete plastic outer shell, breaker.
- Display screen shows total elapsed working hours.
- Pressure safety valve helps ensure operating pressure.
- Power loss alarm function.
- High and low pressure alarm function.
- Low oxygen concentration alarm function.
- Heat protection to ensure the safety of the compressor and concentrator.

2、FEATURES

2.3 Specifications

1、Power supply: AC230V, 50Hz; Current:2.3A; Power: 390VA

2、Sound level: ≤ 46dB (A)

3、Maximum recommended flow： 5L/min

4、Flow Range at Outlet Pressure of zero: 0.5～5L/min

Flow Range at Outlet Pressure of 7 kPa: 0.5～5L/min

Change in maximum recommended flow when back pressure of 7 kPa is applied: ＜ 0.5 L/min

5、Oxygen Concentration : When 0.5~5L/min ,93%±3% (after turning on 30 minutes)

6、Output Pressure : 38kPa±5kPa ;

7、Release Pressure by machine operation : 250kPa±50kPa;

8、Weight: 15kg;

9、Dimension: 330×260×540(mm);

10、Height above sea level: The oxygen concentration will not decrease on 1828 meter height above sea level, from 1828 meter to 4000 meter; the efficiency will decrease to less than 90%.

11、Safety System:

①Current overload or line surge shutdown.

②High temperature compressor shutdown.

③High pressure alarm shutdown.

④Low pressure alarm shutdown.

⑤Low Oxygen Concentration alarm.

12、 Minimum Operating Time: 30 minutes

13、 Electric Classification:

Class Ⅱ equipment , Type BF applied part(Nasal oxygen cannula);

14、 Mode of operation: Continuous duty

15、 Normal Operating Ambient:

overvoltage category: II pollution degree :2 altitude：≤2000

1. Temperature range: 5℃～40℃ (41℉～104℉)
2. Relative humidity: ≤80%
3. Atmospheric pressure: 86kPa～106kPa (12.47psi～15.37psi)

NOTE: ①When the storage temperature is lower than 5℃, the equipment shall be laid in normal operation temperature environment for at least 4 hours.

②The life time or equipment will be affected and the efficiency will be lowered if the equipment runs under conditions exceeding normality.

15、Oxygen Output Temperature: Less than Ambient +6℃

16、 Temperature of gas-exit : Not higher than environment temperature for 6℃.

17、 Tube: To prevent folding of tube, nasal oxygen 2 meters,

prolonged tube not longer than 15.2 meters (no flatting).

18、The Storage and transport Ambient:

1. Temperature Range: 0℃～+55℃(32℉～+131℉)

2. Relative Humidity Range: 10%～90%

3. Atmospheric pressure: 70kPa～106kPa (10.2psi～15.37psi)

NOTE: The oxygen concentrator should be stored in area without erode gas; be avoided shaking and inversion in transportation.

2.4 Standards

IEC 60601-1:2005+A1 2012 Electrical safety – medical devices

EN IEC 60601-1-2：2007 Electromagnetic compatibility

3、HANDLING

3.1 Unpacking

NOTE: Unless the oxygen concentrator is to be used immediately, retain containers and packing materials for storage until concentrator use is required.

- Check for any obvious damage to the carton or its contents. If damage is evident, please notify the carrier or local dealer.
- Remove all loose packing from the carton.
- Carefully remove all the components from the carton.

3.2 Inspection

- Examine exterior of the oxygen concentrator for nicks, dents, scratches or other damages.
- Inspect all components.

3.3 Storage

- Store the repackaged oxygen concentrator in a dry area.

DO NOT place anything on top of the repackaged concentrator.

4、INSTALLATION AND OPERATION

4.1 FEATURE VIEW

1---Indicator of digital tube

Indicates the instant state of digital tube display.

2---Digital tube display

Real-time display of the flow rate, oxygen concentration, as well as the timing value.

3---Flow meter

Setting oxygen flow rate by adjust the knob.

4---"+""-" button

Setting timing value, as well as switching the display of oxygen concentration and flow rate.

5---Status indicator light (Alarm/Normal Low)

6---Elapsed Time Meter

Record total operation time, guide user use device scientifically.

7---Oxygen tube

8---Power cord

9---Power switch

10---Foldable holder of humidifier bottle

Unfold the holder when using a humidifier bottle.

11---Humidifier bottle

For some users, dry oxygen inhalation may cause respiratory discomfort, use humidifier bottle to humidify oxygen.

12---Connecting pipe of humidifier bottle

13---Breaker

To protect the machine and user, breaker will cut off power automatically when current ≥ 4A.After cooling, machine can be turn on if push up the breaker.

14---Outlet connector

15---Transom filter

16---Atomization connector

Unscrew atomization plug and connect with atomizer when atomization is required.

Figure 1: Oxygen Concentrator Features

4、INSTALLATION AND OPERATION

Figure 2: Humidifier Features

DO NOT add water over the maximum water level. Pure water shall be added in humidifier to between maximum and minimum water level in use.

- Power switch——I indicate the power is on, O indicate the power is off. When the switch locates on "ON", if the power cutting occurs, the oxygen concentrator will not run, there will be alarm noise.
- The oxygen will be obtained by passing humidifier. Pure water shall be added in humidifier to between maximum and minimum water level in use. When the tube of oxygen exit of humidifier wrested or jammed, the pressure in humidifier will ascend to 25±5kPa, the safety valve of humidifier will open to release the pressure.

Inspection of performance of humidifier： 1. use the PVC soft tube to connect the humidifier adapter and the oxygen outlet of the shell; 2. turn on the oxygen concentrator, adjust the flux to about 5L/min, jam the exit of humidifier, after about 5 seconds, the safety valve will open, the gas will release, the valve will close, which indicate the gas proofing of humidifier and safety valve in conforming.

4、INSTALLATION AND OPERATION

4.2 PREPARE WORK

- Unscrew the cover of the humidifier, fill the purify water (or distil water) into the humidifier bottle between the maximum and minimum water level lines, and then screw the humidifier bottle. (If needed, add other medicine into the water, please according to the doctor's suggestion.)
- Screw the humidifier bottle absorbing connector into the cover of the humidifier, then insert the humidifier to the elastic belt on the left side of the unit, and connect the other end of the cannula to the oxygen outlet.
- Plug in power supply：Ensure that the power switch is off; plug the concentrator's AC connector into power outlet.

4、INSTALLATION AND OPERATION

4.3 Turning the Concentrator ON

- Press power switch to the "|" position. The display will show "HELLO". At that time green, yellow, red light all will be on which means the function of machine is normal. After about 1 second, only green light on. After 4 seconds, the display will show accumulation work time.
- To properly read the flowmeter, locate the prescribed flow rate line on the flowmeter. Next, turn the flow knob until the ball rises to the line. Now, center the ball on the L/min. line prescribed (Figure 3).

  NOTE: Oxygenation times and the flow rate ranges are established and prescribed by your physician.

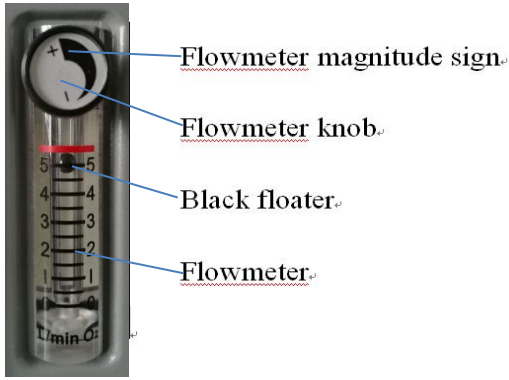


Figure 3

CAUTION: If the flow rate on the flowmeter ever falls below 0.5L/min, check tubing or accessories for blocked or kinked tubing or a defective humidifier bottle.

4、INSTALLATION AND OPERATION

4.4 Alarm Signal

- **Initial startup of the concentrator**

NOTE: Concentrator may be used during the initial start warm-up time (approximately 30 minutes) while waiting for the O_2 concentration to reach maximum.

When the unit is turned on, the green light will come on (O_2 concentration greater than 82%±3%). After 5 minutes, the oxygen sensor will be operating normally and will control the indicator lights depending on oxygen concentration values. The explanations of the indicator light functions are as follows.

4、INSTALLATION AND OPERATION

4.5 Alarm Signal cue

1、O_2 concentration is greater than 85%±2%. Green light illuminates. Normal Operation.

2、O_2 concentration is greater than 73%± 2% and less than 85%±2%. Yellow light illuminate.

3、O_2 concentration is less than 73%±2%. Red light illuminate, intermittent audible alarm sounds.

4、INSTALLATION AND OPERATION

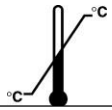
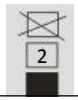
4.6 Turning the Concentrator Off

Press power switch to the “ O ” position and unplug the concentrator’s AC connector from the power outlet.

Use the plug device to isolate the concentrator from the supply mains.

4、INSTALLATION AND OPERATION

4.7 Symbols and Descriptions

Symbol	Meaning	Symbol	Meaning
~	Alternating current		Refer to instruction manual
	Class Ⅱ Equipment		Type BF applied part
O	OFF (power)	|	ON (power)
	Circuit Breaker		No open flame; Fire, open ignition source and smoking prohibited
CE	CE MARK	EC REP	EC-representative
SN	Serial number		Date of manufacture
	Up		Manufacturer
	Keep dry		Temperature limitation
	Fragile, handle with care		Height

5、MAINTENANCE

⚠Warning: Power should be disconnected before beginning preventive maintenance on the concentrator.

⃠ DO NOT service or maintain while patient in use.

The concentrator need no extra approved maintenance as it pressure and oxygen purity self-check of the unit, so it but the device shall be maintained once a year. In location with much dust the maintenance can be performed if necessary. The minimum maintenance is the insurance of oxygen concentrator.

5.1 Cleaning the Cabinet

Clean the cabinet at least once a month.

- Turn off the power switch and unplug the concentrator's AC connector from the power outlet.
- Only the outside of the concentrator is to be cleaned. Use a soft dry cloth, a damp sponge or wipes with alcohol based solution. Do not use acetone, solvents or any other inflammable products. Do not spill liquid inside the cabinet.

5.2 Cleaning or Replacing the Filter (3 Types)

Clean and replace the filters as often as specified in the following paragraphs in order to protect the compressor and extend the concentrator's life.

⃠ DO NOT operate the concentrator without the filters installed , or filters are wet. These actions could permanently damage the concentrator.

5、MAINTENANCE

- Disassembly

(1)Transom filter

The Transom filter need to clean per half month. (Figure 4)

Figure 4

(2)Intake filter

The Intake filter, need to clean per half month. **(Figure 5)**

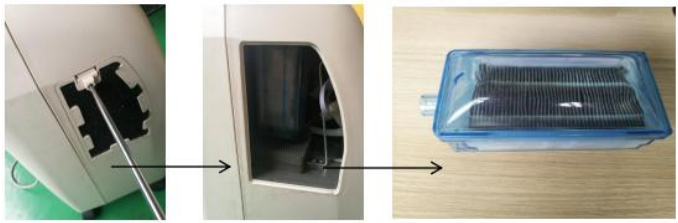


Figure 5

- The intake filter access door is located on the left side of the concentrator, open the access door (Use a small blade screwdriver to open the access door), Unscrew the filter core, Remove the intake filter.
- Washing or change frequency of filter shall Based on actual use time and environment. If the filtration core becomes black, no matter how long.

5.3 Cleaning the Optional Humidifier Bottle

- Change the water in the humidifier bottle every day.

5、MAINTENANCE

- Clean： Wash the humidifier bottle weekly. First use household detergent to wash, then rinse under running water and dry.
- Disinfect：Disinfect the humidifier parts by immersing them in a disinfection solution, or1 part vinegar diluted with 10 parts water . then rinse under running water and dry.
- Disassembly humidifier bottle.

(1) Unscrew the humidifier bottle. (**Figure 6**)

(2) Take out tube and its terminal filtration. (**Figure7**)

Figure 6

Figure7

5.4 Oxygen nasal cannula (Available accessories)

Follow the nasal cannula manufacturer's instructions.

5.5 Tube maintenance

It is recommended to maintain/replace internal tube once a year.

5.6 Note：for each new patient

Follow the instructions from the humidifier manufactuter. The cabinet air filter should be washed or replaced.

The entire oxygen administration circuit (oxygen therapy nasal cannula, etc.) must be changed.

5、MAINTENANCE

Preventive Maintenance Items for users：

Transom filters [JMC5A Ni.5-TF] clean half month, replace as needed. **Intake filter** [JMC5A Ni.5-IF] clean half month, replace as needed. **Humidifier** [JMC5A Ni.5-HUM] wash weekly, replace as needed. Use original spare parts only.

5、MAINTENANCE

5.7 Replacement Part list (approved by manufacturer only)

Part Number	Description	Num./each
JMC5A Ni.5-BUZ	buzzer	1
JMC5A Ni.5-Caster	caster	4
JMC5A Ni.5-CB	Circuit Breaker	1
JMC5A Ni.5-CC	Compressor Capacitor	1
JMC5A Ni.5-COMP	Compressor	1
JMC5A Ni.5-CT	Cabinet Top (outer shell)	1
JMC5A Ni.5-CV	Combined gas valve	1
JMC5A Ni.5-Fans	Fans	2
JMC5A Ni.5-FM	Flow meter	1
JMC5A Ni.5-HUM	Humidifier	1
JMC5A Ni.5-IF	Intake filter	1
JMC5A Ni.5-IM	Inlet Muffler	1
JMC5A Ni.5-LCD	LCD display	1
JMC5A Ni.5-LEDP	LED Plate	1
JMC5A Ni.5-MCB	Main Control Board	1
JMC5A Ni.5-OON	Oxygen outlet nipple	1
JMC5A Ni.5-OS	Oxygen sensor	1
JMC5A Ni.5-OSS	Outlet sound silencer	1
JMC5A Ni.5-Panel	Panel	1
JMC5A Ni.5-PC	Power Cord	1

5、MAINTENANCE

Part Number	Description	Num./each
JMC5A Ni.5-PR	Pressure regulator	1
JMC5A Ni.5-PS	Power Switch	1
JMC5A Ni.5-PT	Product tank	1
JMC5A Ni.5-SB	Sieve bed	2
JMC5A Ni.5-TF	Transom filter	2
JMC5A Ni.5-TRAN	transformer	1

Warning：

Replacement of a component could result in an unacceptable risk. Only the professional person approved by manufacturer can do maintenance of replacement component or debug the concentrator. Use original spare parts only.

6、TROUBLESHOOTING

Troubleshooting Guide

Symptom	Probable cause	Solution	Remark
Elapsed time meter displays, the green and the yellow light are always bright, but the oxygen concentrator stops running immediately and has continuous buzzer.	1) Four corns plug-in of the valve has not been inserted completely	1)Check and connect the circuit board to the valve's four corns plug-in.	Repairs by qualified personnel .
	2) Exhaust sound buffer box jammed.	2) Replace it.	
	3) Can't open the valve.	3) Replace it.	
	4) Failure of the main electronic control circuit board.	4) Replace it.	
The nasal cannula has more mirage or blobs.	1) It's not ventilate completely around machine, so operating temperature is too high.	1) Make sure the machine is at least 10 cm away from the walls, other jam or heater.	
	2) Fan inside the machine can't run or running rate turns slow make the operating temperature too high.	2) a. Take out the winker that locks the fan.	Repairs by qualified personnel
		2) b. Replace it.	
	3) Temperature of the water added in humidifier bottle is too high.	3) Add cold water in bottle.	
	4) The water added in humidifier bottle is too much.	4) Water added should between the maximum and minimum of the liquid level.	

6、TROUBLESHOOTING

Symptom	Probable Cause	Solution
Concentrator works, but yellow light illuminates.	1) Concentrator's oxygen concentration is safe, but decreasing.	1) Clean or Replace filters.
	2) Unit overheating due to blocked air intake.	2) Move concentrator at least 10 cm (4 inches) away from walls, draperies, furniture, or similar surfaces.
	3) If condition persists, OK to continue use, but contact Equipment Provider immediately.	
Concentrator doesn't work, red light illuminates, continuous audible alarm sounds.	1) Low pressure alarm.	1) Clean or Replace filters.
	2) If condition persists, discontinue use, contact Equipment Provider immediately.	
Concentrator doesn't work, red light illuminates, continuous audible alarm sounds.	High pressure alarm.	Contact Equipment Provider immediately.
Concentrator doesn't work, continuous audible alarm sounds.	Compressor open circuit alarm.	Contact Equipment Provider immediately.
Concentrator doesn't work, continuous audible alarm sounds.	Compressor short circuit alarm.	Contact Equipment Provider immediately.

NOTE: If you experience a problem with your concentrator and are unable to service it yourself, contact the equipment provider from whom you purchased the concentrator.

7、DISASSEMBIE (only qualified service personnel)

⚠ Warning: Power should be disconnected before beginning disassembling the concentrator.

7.1 Cabinet Removal

● Turn off the power switch and unplug the concentrator's AC connector from the power outlet.

● Use screwdriver to remove the four screws , two on either side of the unit, that secure the cabinet to the concentrator. (See figure 8)

Screws figure 8

7.2 Panel Removal

● Insert a flat blade screwdriver into the two slots between the top of the panel and cabinet outer shell; turn 30 degrees to release the panel from the cabinet. (figure 9)

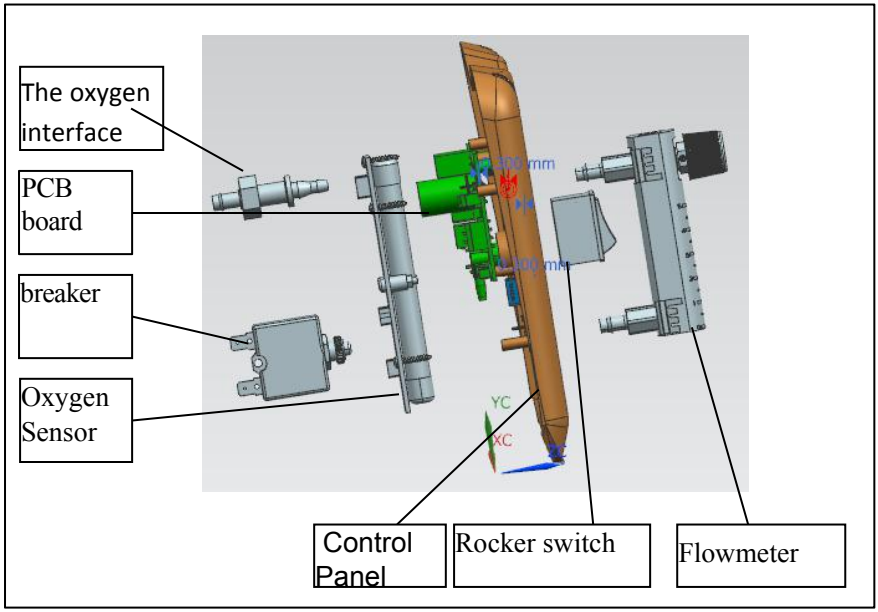
● Disconnect the tube from the oxygen sensor output to facilitate removal of cabinet.(figure 10)

● Remove the panel。(figure 11)

Figure 9

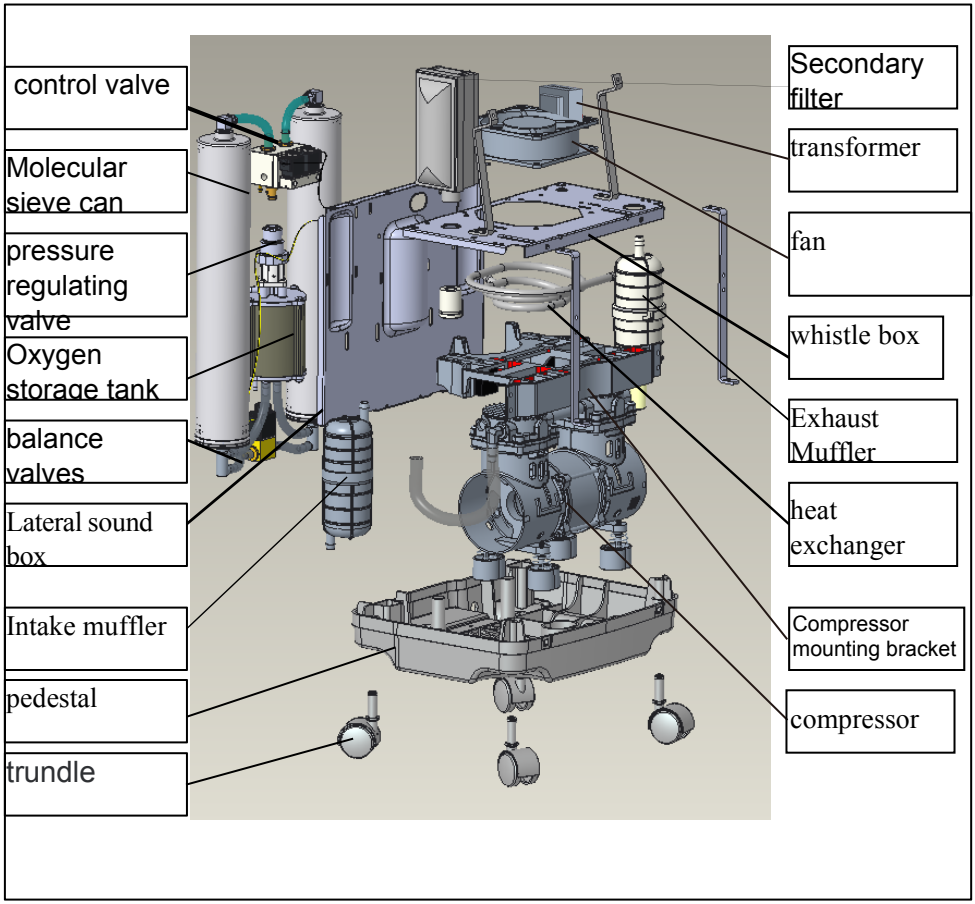
7、DISASSEMBIE (only qualified service personnel)

7.3 Panel view (See figure 13)



7、DISASSEMBIE (only qualified service personnel)

7.4 Front view of the hush house (See figure 14)



7、DISASSEMBIE (only qualified service personnel)

7.5 Replacement Service

● Power cord replacement

1. Turn off the power switch and unplug the concentrator's AC connector from the power outlet.

2. Disconnect Cabinet as 7.1～7.2.

3. Disconnect brown and blue leads from terminal block on top right hand side of hush house. (See figure 15) Cut the four nylon ties of the power cord.

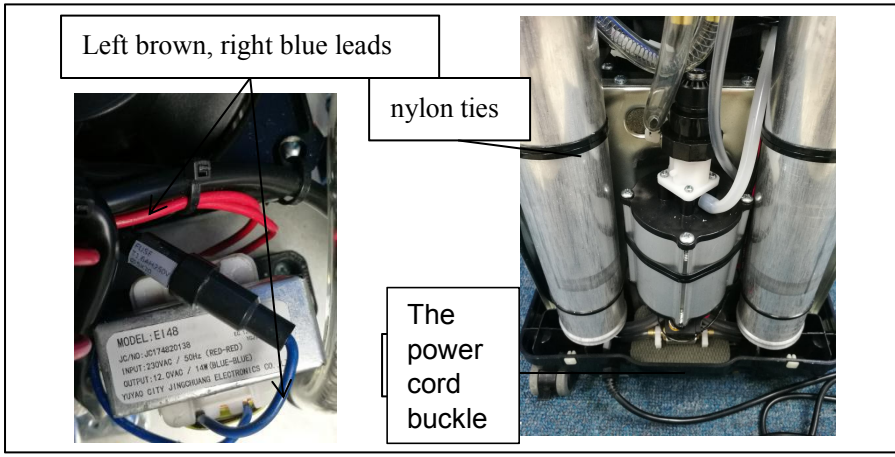


figure 15

4. Unscrew tension bar at inlet to base and pull cord out. (See figure 15)

5. Insert new cord and reconnect.

6. Perform the previous steps in reverse to reassemble.

● Combined gas valve operation

The combined gas valve uses two electromagnetic valves to control the inflow of compressed air to the sieve beds. These valves operate on a voltage of 12VDC. The ON cycle will last seven seconds. The OFF cycle will last 1 second. The cycle is terminated on one valve and initiated on the other.

These valves require no routine maintenance.

7、DISASSEMBIE (only qualified service personnel)

● Combined gas valve testing

1. Use a 0VDC to 24VDC voltmeter to test the valve.

2. There should be a voltage flow of seven seconds on each valve.

3. The presence of voltage indicates that the circuit board is operating correctly. If voltage is not present, perform Main Circuit Board replacement.

4. If the valve is working properly, a slight resistance will be felt during the cycle in which the valve is energized. If no resistance is felt, replace the magnet.

● Combined gas valve replacement

1. Turn off the power switch and unplug the concentrator's AC connector from the power outlet.

2. Disconnect Cabinet and Hush house side panel as 7.1～7.3.

3. Disconnect the four wires (two yellow wires, two blue wires). (See figure 16)

4. Unscrew the two screws of the valve. (See figure 16)

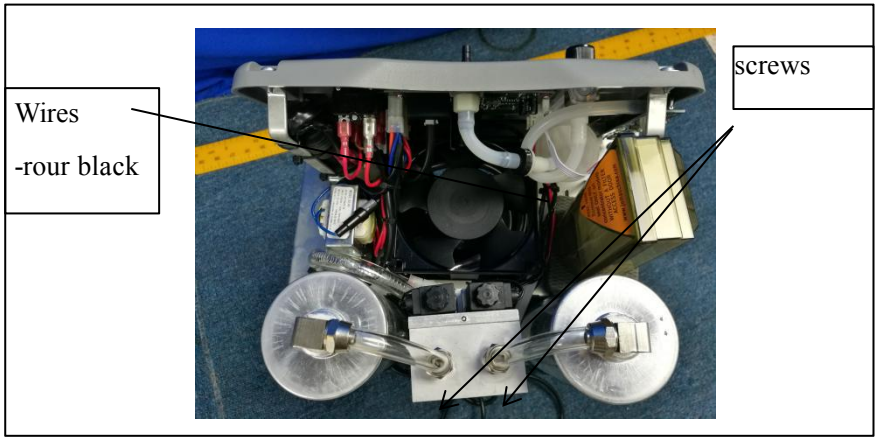


figure 16

7、DISASSEMBIE (only qualified service personnel)

5. Cut the three nylon tie. (See figure 17). Pull out the PU tube from the Outlet sound silencer

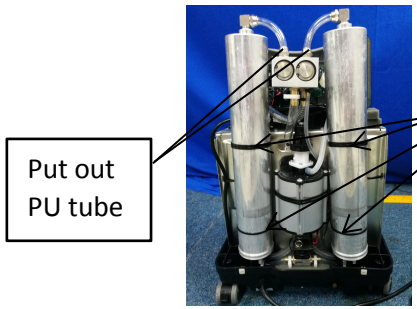


Figure 17

6. Replace the Combined gas valve.

7. Perform the previous steps in reverse to reassemble.

● Sieve Bed Operation

The oxygen concentrator employs two beds filled with molecular sieve (Zeolite). The functional characteristics of the concentrator are determined, in part, by the type of sieve and the packing method used in its construction. DO NOT repackage the sieve. this could change the performance characteristics of the concentrator. All warranties and liability are void if non replacement parts are used.

● Sieve Bed Replacement

1. Turn off the power switch and unplug the concentrator's AC connector from the power outlet.

2. Disconnect Cabinet as 7.1～7.2.

3. Disconnect the sieve bed clamps. (see figure 18)

4. Cut the four nylon tie of the sieve beds input tubes. (See figure 19).

5. Cut the four nylon tie of the sieve beds output tubes. (See figure 19).

7、DISASSEMBIE (only qualified service personnel)

6. Install new sieve beds.

7. Perform the previous steps in reverse to reassemble.

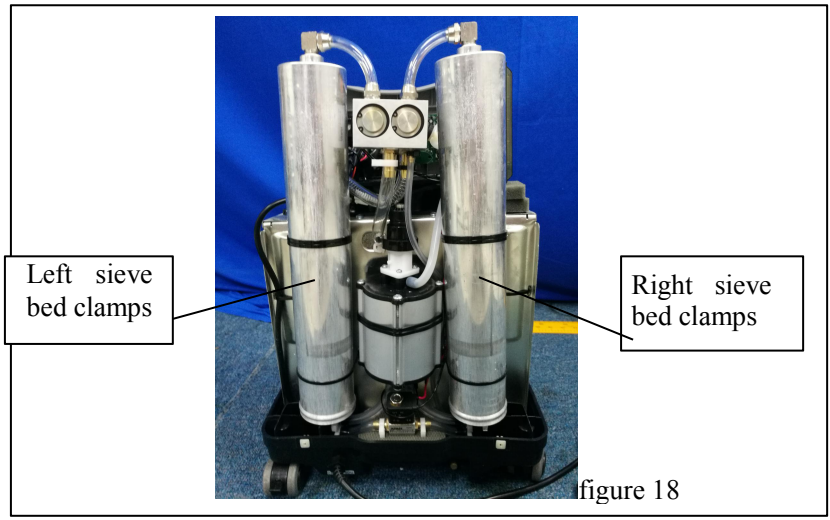
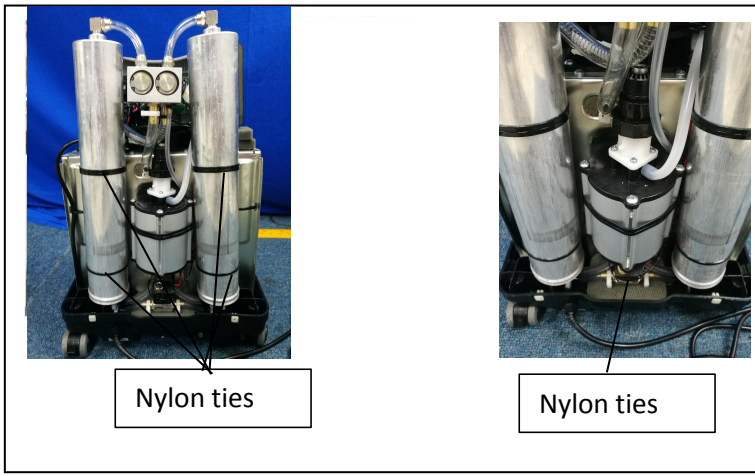


figure 18



7、DISASSEMBIE (only qualified service personnel)

● Main Circuit Board Operation

The circuit board controls the switching of the valves that control the flow of air to the sieve beds and the alarm functions of the concentrator. Components on the main circuit board are sensitive to electrostatic discharge.s Damage: USE ESD precautions when handling the circuit board.

● Main Circuit Board Removal

1. Turn off the power switch and unplug the concentrator's AC connector from the power outlet.
2. Disconnect Cabinet as 7.1～7.2.
3. Using ESD precautions, disconnect the nine pinboard connectors from the main circuit board.
4. Use a M3 socket wrench to remove the two nuts that secure the circuit board.
5. Replace new main circuit board.
6. Perform the previous steps in reverse to reassemble.

● Transformer Operation

The transformer provides low power to operate the components of the concentrator. The input voltage is 230VAC on the red wires.

Output voltages are:：24.5 volts blue；8.5 volts green.

● Transformer Replacement

1. Turn off the power switch and unplug the concentrator's AC connector from the power outlet.
2. Disconnect Cabinet as 7.1～7.2.
3. Disconnect the transformer pinboard connector from the main circuit board.
4. Disconnect the transformer red connector from the LED board.
5. Disconnect the nylon ties of the transformer.

6. Replace new transformer.

7. Perform the previous steps in reverse to reassemble.

● Transformer Replacement

8. Turn off the power switch and unplug the concentrator's AC connector from the power outlet.

9. Disconnect Cabinet as 7.1～7.2.

10. Disconnect the transformer pinboard connector from the main circuit board.

11. Disconnect the transformer red connector from the LED board.

12. Disconnect the nylon ties of the transformer.

13. Replace new transformer.

14. Perform the previous steps in reverse to reassemble.

● compressor operation

The compressor is a two piston pump that pushes room air into the sieve beds as directed by the valve assembly. The compressor has a three years warranty and should not require any service for at least 20,000 hours of use.

Over an extended period of time (greater than 20,000 hours) the cup seals, which prevent air from leaking around the piston and cylinder wall, may wear and create a leak. This decrease in output may result in a decrease in oxygen purity because less air will be available to the sieve beds.

The pistons are driven by a single shaft which is balanced by ball bearings. If the bearings wear significantly, the noise level of the compressor may become significantly loud and require replacement of the ball bearings.

7、DISASSEMBIE (only qualified service personnel)

● compressor Removal

To remove the compressor assembly for exchange:

1. Turn off the power switch and unplug the concentrator's AC connector from the power outlet.

2. Remove cabinet and hush house side panels as described previously.

3. Apply a downward pull to compressor inlet hose located on left side of compressor to remove. Use a flat blade screwdriver to loosen air outlet hose from right side of compressor and pull down. (figure 20)

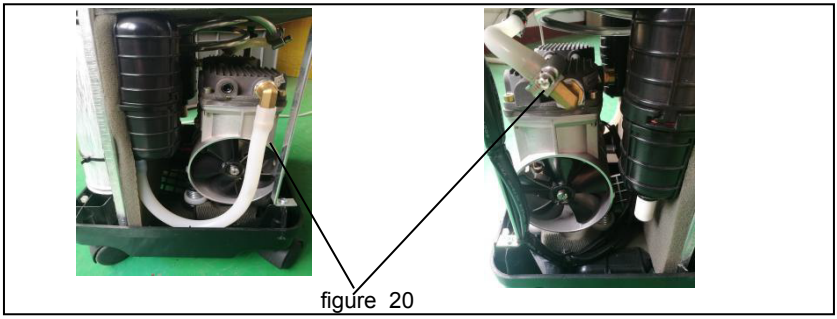


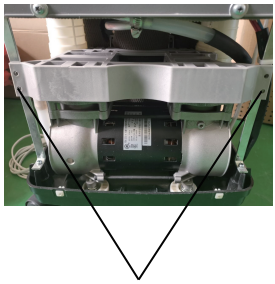
figure 20

4. Use screwdriver to remove the six screws on front and back panel of hush house. (figure 21)

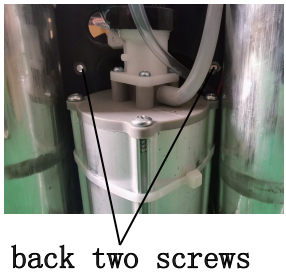
5. Replace new compressor.

6. Perform the previous steps in reverse to reassemble.

7、DISASSEMBIE (only qualified service personnel)



front four screws



back two screws

figure 21

● Compressor Capacitor Replacement

1. Turn off the power switch and unplug the concentrator's AC connector from the power outlet.

2. Disconnect Cabinet as 7.1～7.2.

3. Cut the nylon cable ties of the compressor capacitor. (figure 22)

7、DISASSEMBIE (only qualified service personnel)

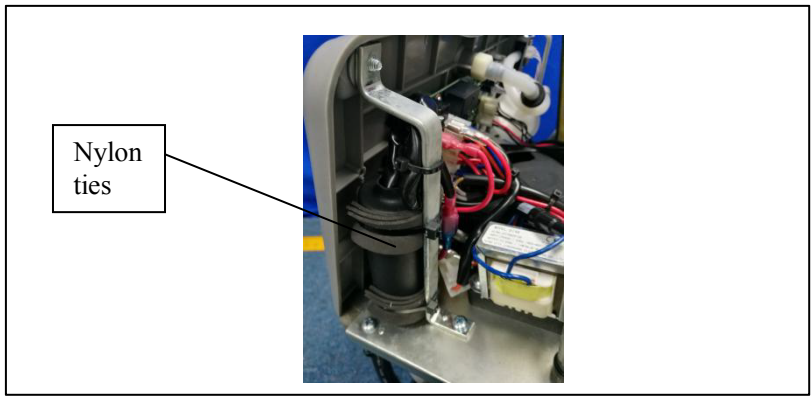


figure 22

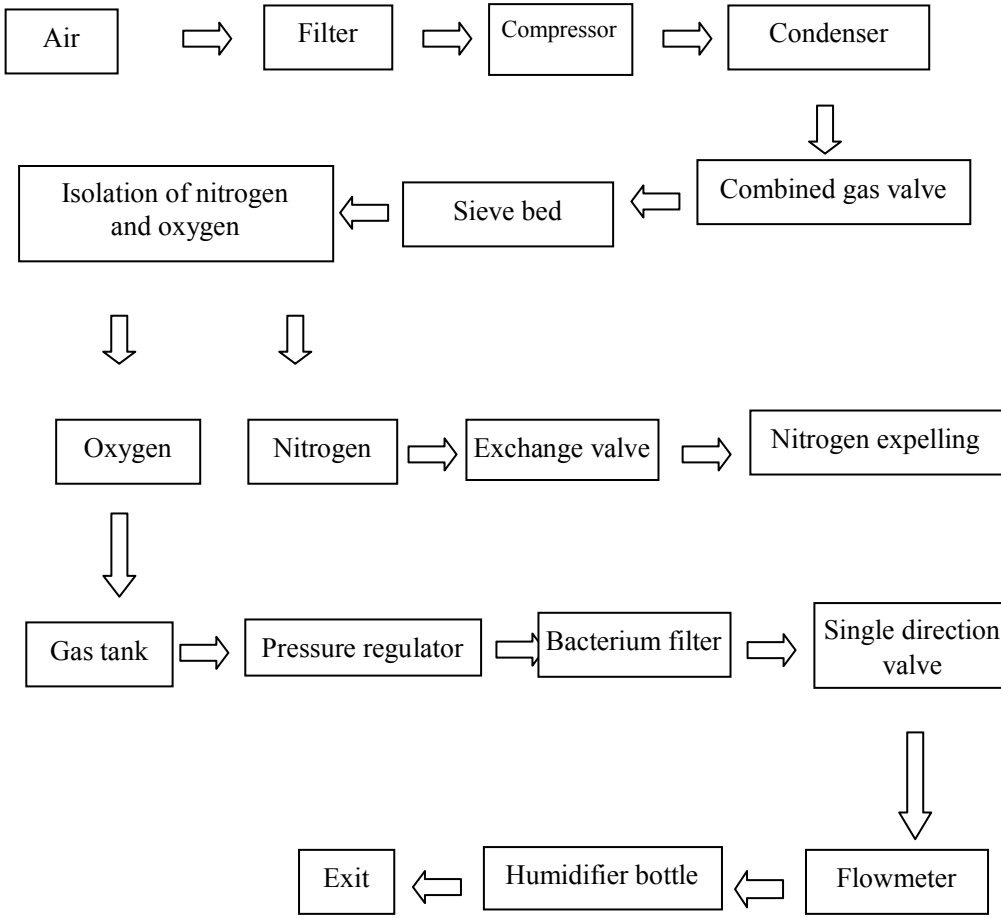
4. Remove the connector that connect compressor and capacitor..

5. Insert new capacitor connector .

6. Secure new capacitor with new cable ties.

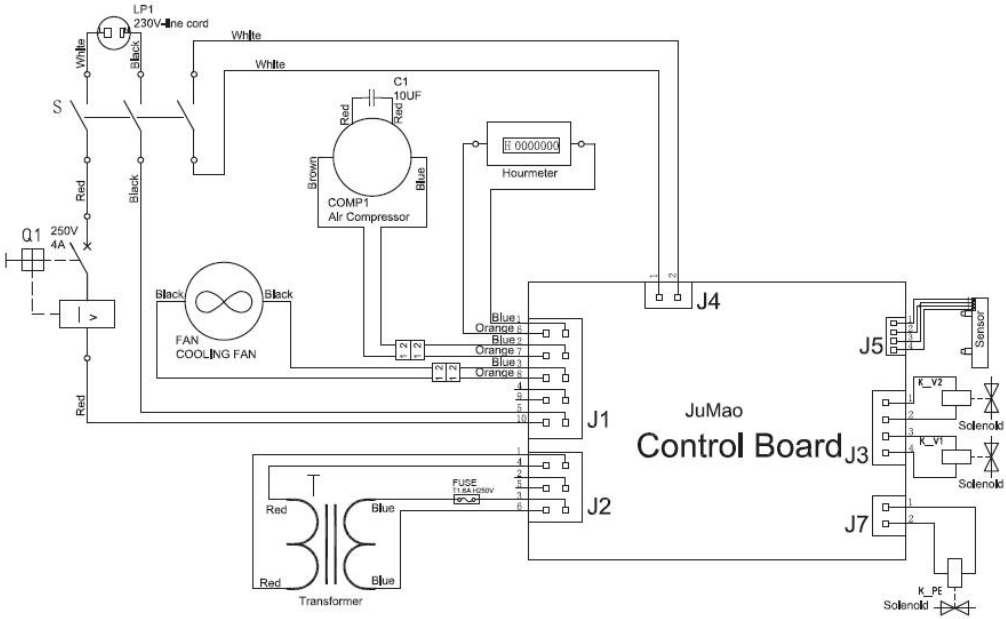
8、OTHER ATTENTIVE ITEMS

8.1 Sketch map of gas tubes:



8、OTHER ATTENTIVE ITEMS

8.2 Electrical Elements Graph



8、OTHER ATTENTIVE ITEMS

The supplier can provide circuit diagrams, spare parts lists, technical details or any other information of use to qualified technical personnel for parts of the device which are designated as being the manufacturer's responsibility or by the manufacturer as repairable.

8.3 Post-marketing service

a) In normal use and normal maintenance circumstances, if the Oxygen Concentrator can not be normally used in half a year since delivery date (or in a year of commerce storage)(compressor 3 years), the company is responsible for repair for free or change for free; if it can not be normally used in half a year, user can contact the post-sales service department, office or agents for repair for free based on invoice and repair guarantee card; If it can not be normally used after one year, the company can provide accessories and repair with reasonable charge。

b) The following cases is not in scope of repair guarantee: ① damage of distortion of the integral equipment caused by collision; ② water or rain entering integral equipment;③ Equipment out of gear caused by water and drug; ④ Articles easily to damage or easily to consume, grade I filtration net, filtration carpet; damping filter, damping tube.

8.4Treatment of waste and residual

The treatment of waste and residual shall be conforming to law and regulations.

The change of electric circuit and appearance caused by improvement of equipment will not be informed additionally

8、OTHER ATTENTIVE ITEMS

8.5 Accessories and spare parts

The accessories used must be oxygen compatible and be biocompatible.

Note： The connectors, tubes, nasal cannula or masks must be designed for oxygen therapy usage. Included in the set of accessories supplied with the device, comply with these requirements. Contact your equipment supplier to obtain these accessories.

List of accessories：

- Humidifier bottle 1 Set
- Connection tube of humidifier bottle 1 Set
- Atomizer 1 Set
- Oxygen tube 1 Set
- User manual 1 Set
- Warranty Card 1 Set
- Qualification certificate 1 Set

Available accessories：

- Nasal oxygen cannula 2m ： 1 set

  Nasal oxygen cannula 5m： 1 set

8、OTHER ATTENTIVE ITEMS

8.6 Material in direct or indirect contact with the patient

Concentrator casing …….ABS

Power cord ……PVC

filter ……...Felt

Switch ……..Nylon

Caster ……Nylon

Flow adjustment knob ……..…ABS

Oxygen product outlet ……..ABS

Humidifier bottle ……PP

Humidifier cover ……..ABS

Labels ……PVC, KK

Pipe / tubing …….....PVC, silicone

When the patient or other operator touch the materials above, will not constitute any unacceptable RISK.

All the materials above pass biocompatibility test.

8、OTHER ATTENTIVE ITEMS

8.7 Electric and magnetic environment guidance in use

Guidance and declaration of manufacturer -Electromagnetic emission		
The JMC5A Ni Oxygen Concentrator is intended for use in an environment specified below. The customer of the user of JMC5A Ni Oxygen Concentrator should assure that the unit is used in such an environment.		
Emission test	**Compliance**	**Electromagnetic environment- regulations**
RF emissions CISPR 11	Group 1	The JMC5A Ni Oxygen Concentrator uses RF energy solely for its internal function. Therefore, its RF emission are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class B	The JMC5A Ni Oxygen Concentrator is suitable for use in all establishments, including domestic and those directly connected to the public low-voltage power supply network that supplies building used for domestic purposes.
Emission of harmonics IEC 61000-3-2	Class A	
Voltage fluctuations / flicker emissions IEC 61000-3-3	Complies	

8、OTHER ATTENTIVE ITEMS

Guidance and declaration of manufacturer -Electromagnetic Immunity			
The JMC5A Ni Oxygen Concentrator is intended for use in the electromagnetic environment specified below. The customer of the user of JMC5A Ni Oxygen Concentrator should assure that the unit is used in such an environment.			
Immunity	IEC 61000-4-2 test level	Compliance level	Electromagnetic environment-guidance
Electrostatic discharge (ESD) IEC 61000-4-2	±6 kV contact discharge ±8 kV Air discharge	±6 kV contact discharge ±8 kV Air discharge	Floors should be wood or concrete or ceramic tile. If floors are covered with synthetic materials, the relative humidity must be at least 30%
Electrical fast transient /bursts IEC	±2 kV for power supply lines ±1 kV for input/output	±2 kV for power supply lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1 kV differential mode ±2 kV common	±1 kV differential mode ±2 kV common	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 61000-4-11	< 5 % UT (>95 % dip in UT)	< 5 % UT (>95 % dip in UT)	Mains power quality should be that of a typical commercial or hospital environment. If the user of the JMC5A Ni Oxygen Concentrator requires continued operation during power mains interruptions, it is recommended that the JMC5A Ni Oxygen Concentrator be powered from an interruptible power supply or a battery
	40 % UT (60 % dip in UT) for 5 cycle	40 % UT (60 % dip in UT) for 5 cycle	
	70 % UT (30 % dip in UT) for 25	70 % UT (30 % dip in UT) for 25	
	<5 % UT (95 % dip in UT) for 5 sec	<5 % UT (95 % dip in UT) for 5 sec	
Power frequency (50 Hz) magnetic IEC 61000-4-8	3 A/m	Due to the EUT contains no components susceptible to magnetic field, it is deemed to fulfill the relevant immunity requirement without testing.	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.			

8、OTHER ATTENTIVE ITEMS

Guidance and declaration of manufacturer -Electromagnetic Immunity

The JMC5A Ni Oxygen Concentrator is intended for use in the electromagnetic environment specified below. The customer of the user of JMC5A Ni Oxygen Concentrator should assure that the unit is used in such an environment.

Immunity	EC61000-4-2	Compliance level	Electromagnetic environment-guidance
directed HF interference acc. to IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz	3 V	Portable and mobile RF communications equipment should be used no closer to any part of the JMC5A Ni 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 √P d= 1.2 √P 80 MHz to 800 MHz d= 2.3 √P 800 MHz to 2.5GHz Where *P* is the maximum output power rating of the transmitter in Watt (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 [a] should be less than the compliance level in each frequency range.[b] Interference may occur in the vicinity of equipment marked with the following symbol:
Radiated RF IEC	3 V/m 80 kHz to 2.5 GHz	3 V/m	

NOTE 1 At 80 MHz and 800 MHz, 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.

a Field strengths from fixed transmitters, such as base stations of radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and television 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 *JMC5A Ni Oxygen Concentrato*r is used exceeds the applicable RF compliance level above, the *JMC5A Ni Oxygen Concentrato*r should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the *JMC5A Ni Oxygen Concentrato*r.

b over the frequency range from 150 kHz to 80 MHz, the field strengths should be less than 3 V/m.

8、OTHER ATTENTIVE ITEMS

Recommended separation distances between portable and mobile RF communication equipment and the *JMC5A Ni Oxygen Concentrator*.

The *JMC5A Ni Oxygen Concentrato*r is intended for use in an electromagnetic environment in which radiated RF disturbances are control . The customer or user of the*JMC5A Ni Oxygen Concentrato*r can help to help prevent electromagnetic interferences by maintaining minimum distances between the portable and mobile RF communication equipment (transmitters) and the *JMC5A Ni Oxygen Concentrato*r as recommended below, according to the maximum output power of the communication equipment.

Rated maximum output power of transmitter (W)	separation distance according to frequency of transmitter(m)		
	150 kHz to 80 MHz d=1.2√P	80 MHz to 800 MHz	800 MHz to 2.5 GHz
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 is not listed above, the recommended separation distance 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. Specified by 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.

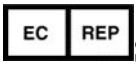
 Jiangsu Jumao X-Care Medical Equipment Co.,Ltd.

Add: No.36,Danyan Road, Danyang , Jiangsu 212300, China.

Tel: +86-511-86195106 Fax: +86-511-86197022

E-mail:dzhiyangji@Jumaocn.cn

Website: www.Jumaochina.com



Shanghai International Holding Corp.Gmbh (Europe)

Add: Eiffestrasse 80,20537 Hamburg,Germany

Tel: +49-40-2513175 Fax: +49-40-255726

Dimdi No.:DE/0000040627 E-mail: shholding@hotmail.com