

# Oxygen Concentrator

## User Manual



Please read the instruction carefully before you use the machine.

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## 1. Product Overview

Welcome to choose the oxygen concentrator manufactured by our company!

Our oxygen concentrator adopts 220V/110V AC power supply, uses air as raw material and high-quality molecular sieve as adsorbent, and adopts the principle of pressure swing adsorption (PSA) to directly separate oxygen from nitrogen at normal temperature, oxygen of high purity is thereby produced.

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

### 1.1 Functions of oxygen

Oxygen absorption can improve physical oxygen supply condition and achieve the purpose of oxygenating care. It is suitable for the middle-aged and elderly, people with poor physical fitness, pregnant women, students and other people who suffer different degrees of physiological hypoxia. It can also eliminate fatigue and restore somatic function after heavy physical or mental exertion.

## 1.2 Scope of application

This device is mainly used for health care use oxygen.

## 2. Safety Notice

### Warning:

1. This product can not be used for life support or life sustaining. It is suggested that if any patient who needs oxygen treatment, please follow doctor's advice to choose the right flow and period for oxygen before using the machine.
2. To prevent power failure or possible failure of oxygen concentrator, when the patients in urgent need of oxygen using this product, other standby oxygen supply devices (e.g.: oxygen cylinder, oxygen bag, etc.) must be provided.
3. If the oxygen concentrator can not work properly, or if you feel uncomfortable, please stop using immediately and consult physician or supplier to solve the problems.
4. Oxygen is a kind of combustion supporting gas, thus the oxygen concentrator can not be used in places with open flame or the danger of flammability, smoking or open flame is prohibited near people who absorb oxygen.
5. Power supply must comply with electrical safety regulations. Oxygen concentrator shall not be used when power supply protective earth terminal doesn't comply with the regulations, otherwise it may cause personal injury.
6. Please turn off the power and unplug the power cord before the cleaning and maintenance of oxygen concentrator.
7. People without authorization of the company shall not open the cover for maintenance.

### 3. Operating Principle

Oxygen concentrator process flow is shown in Fig.1:

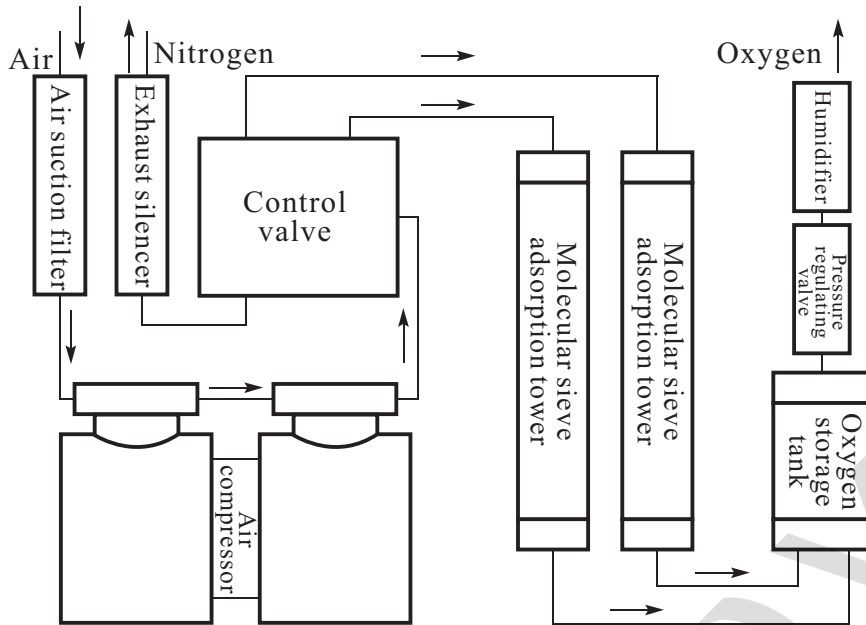


Fig. 1 Flow chart of oxygen concentrator

Oxygen concentrator uses molecular sieve as adsorbent, adopts the principle of pressure swing adsorption (PSA), sends the air after filtration into the molecular sieve adsorption tower for the cyclic process of pressurized adsorption and decompressed desorption, oxygen of high purity is thereby produced.

### 4. Structural Features

Our oxygen concentrator mainly consists of principal machine, humidifier bottle, as shown in Fig. 2

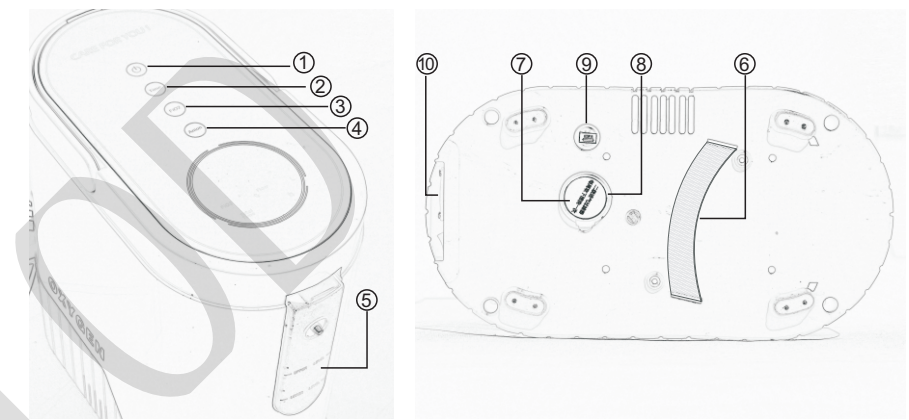


Fig. 2 Outline drawing of oxygen concentrator

- |                     |                      |
|---------------------|----------------------|
| ① On/Off button     | ⑥ Fixed belt         |
| ② Timing            | ⑦ Filter cover       |
| ③ Flow              | ⑧ Filter             |
| ④ Anion             | ⑨ Overload protector |
| ⑤ Humidifier bottle | ⑩ Power switch       |

### 5. Technical Indicators

#### 5.1 Operating environment

Ambient temperature: 10°C~40 °C

Relative humidity: 30% ~ 75%

Atmospheric pressure: 600hPa ~ 1060hPa

Power supply: 220V ± 22V, 50Hz ± 1Hz/110V ± 15V, 60Hz ± 1Hz

There shall be no corrosive gas or strong magnetic field in surrounding environment.

## 5.2 Air requirements

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

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

## 5.3 Product functions

Timing function: show the total working time through display screen

Time setting: set oxygen absorption time as required

Automatic shutdown: automatic shutdown after reaching preset oxygen concentration time

Atomization treatment function (only models with atomization function)

## 5.4 Technical Parameter

Rated power(W)	$\leq 90$
Operation voltage (V/Hz)	AC220/50 AC110/60
Oxygen flow (L/Min)	1-5
Oxygen concentration (%)	93-38
Outlet pressure ( Mpa )	0.05-0.07
Alarm	Power failure
Sound level (dB)	$\leq 40$
LCD display	Accumulating timing; Present timing; Flow rate, Oxygen purity
Net Weight (Kg)	5.4
Dimension (mm)	310(L)x165(W)x310(H)
Fuse	F2A/250V

Table 1

## 6. Product Installation

### 6.1 Unpacking inspection

Open the carton box from top of the packing box, and then open the plastic bag, pull up the oxygen concentrator by grasping the handles of oxygen concentrator. Carefully check whether there is any transport damage to the oxygen concentrator, and then check the accessories and relevant documents according to the packing list.

### 6.2 Installation precautions

**Attention:**



1. Oxygen concentrator shall be installed in indoor ventilating places without dust, corrosive, toxic or harmful gases or smoke. Avoid direct sunlight, and the distance from walls and other objects shall be greater than 10cm.
2. Oxygen concentrator shall not be installed in places with open flame, fire source, danger of flammability or explosion, humidity, too high or too low temperature. Besides, it shall not be used in a closed room (space).
3. No sundries, water or oil containers shall be placed on top of oxygen concentrator.
4. Oxygen concentrator shall not be placed on soft surfaces (e.g. bed, couch) that may cause tilting or sinking, avoid shutdown or oxygen concentration decrease caused by too high temperature due to blockage of air inlet or outlet.
5. Oxygen concentrator shall be placed smoothly, otherwise it will increase the noise during operation.
6. If grid voltage is instable and exceeds the range of  $220 \pm 22\text{V}$  or  $110\text{V} \pm 15\text{V}$ , please install voltage stabilizer before use.
7. Please use safe and qualified socket and the wiring board with safe electricity certification.



## 7. Product Use

### 7.1 Use precautions

**Attention:** 

1. During use, ensure unobstructed exhaust at the bottom of oxygen concentrator, otherwise it may cause internal overheating.
2. When the output oxygen is less than the maximum recommended flow, oxygen concentration reaches 90%. When the flow exceeds the maximum recommended flow, oxygen concentration will reduce with the increase of flow.
3. Oxygen concentrator will reach the specified performance after started for 10 minutes.
4. There will be intermittent exhaust sound (every 7-12 seconds around) during operation of oxygen concentrator, which is normal.
5. No oil, grease or other similar substances shall be used on or near oxygen concentrator, and no lubricant other than those recommended by the manufacturer shall be used.
6. During use, timely add water when water level of humidifier bottle is below the minimum level.
7. Oxygen concentrator shall not be started frequently, it shall be restarted after stopped for 5 minutes.
8. Molecular sieve will become aging due to use time and environment etc., causing unrecoverable decrease of oxygen concentration amount. In case of this phenomenon, please contact the dealer or manufacturer to replace the molecular sieve.
9. For long-term stopping of oxygen concentrator, be sure to unplug the power cord.

### 7.2 Operation Steps

- ① **Remove the fixed belt.**(as shown in Fig. 2 ⑥)
- ② **Fill water to humidifier bottle:** Take off the bottle. Open the silicone cover, Add proper amount of pure water to the bottle, the water level shall be between the maximum (MAX) and minimum (MIN) water lines.(as shown in Fig. 2 ⑤)
- ③ **Power on:** plug in the power cord, press the power switch. The oxygen concentrator enters into the ready-to-start state.
- ④ **Click“On/Off” button** , the machine begin to produce oxygen.
- ⑤ **Timing:** Press “Timing” button, oxygen concentrator will enter into timing state, and the timing is 30 minutes , for each press of "Timing" button, preset time will be increased by 30 minutes (maximum preset time is 120 minutes); users can preset the time for oxygen concentration as required.
- ⑥ **Flow Rate:** The user can click” Flow ” to +- flow. Flow rate and purity will show in the LCD display.
- ⑦ **Anion:** Click“Anion”button, the anion function starts to work. It can improve the environment around you.(as shown in Fig. 2 ④)
- ⑧ **Wear oxygen tube:** Insert the intake end of absorbing oxygen tube onto the oxygen outlet, then set the absorbing oxygen tube over patient’s ears, insert the nasal tube into patient’s nostrils to absorb oxygen.
- ⑨ Once the oxygen therapy finished, click “On/Off” button  to turn off the machine(The machine will stop working, if you preset using time). press the switch to shut down the power, please also un-plug the power supply at the same time.

## 8. Maintenance

### 8.1 Maintenance considerations

**Attention:** 

1. Only the dealers authorized by the manufacturer or the qualified personnel after special training can conduct preventive maintenance or performance adjustment for oxygen concentrator.
2. In case of oxygen concentrator failure, contact the dealer or manufacturer for repair. Do not disassemble for repair by yourself.
3. Clean the humidifier bottle every 3 days.
4. Regularly clean filter according to requirements. Clean in advance in case of too much dust. Oxygen concentrator shall not be started before filter is installed.
5. Power cord is provided according to the power of oxygen concentrator, please do not replace arbitrarily.

### 8.2 Oxygen concentrator cleaning

#### 8.2.1 Cleaning of oxygen concentrator

When turning off the power of oxygen concentrator, use a soft towel dipped with a small amount of neutral household cleaner to wipe the casing, and then use a dry towel to dry up. When wiping, pay attention to preventing liquid infiltrating into casing slot.

#### 8.2.2 Cleaning of filter

Timely cleaning and replacement of filter are very important for protecting air compressor and molecular sieve, and extending the service life of oxygen concentrator, please timely clean and replace according to requirements.

Clean filter an interval about 900 hours, open filter cover, take out the filter, then clean it with detergent, and then clean it out with clean water completely, get rid of the extra water, and dry it naturally, finally set back after dry up.

#### 8.2.3 Cleaning of humidifier bottle

First take out the humidifier bottle. Humidifier bottle is generally cleaned with clean water, in case of any water scale, rinse with clean water after descaling by vinegar.

## 9. Troubleshooting

In case of any problems during use, before sending the machine for repair, please read this section carefully, you may simply solve the problems by yourself. If the problems can not be solved according to the examples in Table 2, please send the oxygen concentrator for repair. Do not attempt to repair or remove the casing of oxygen concentrator by yourself.

### Failure analysis and troubleshooting examples

No.	Trouble	Causes	Solution
1	There is no display on LCD when starting or running	1. Power failure	1. Use the machine after power on
		2. Power cord is loose	2. Check and insert the power cord properly
2	Low oxygen purity	1. Output oxygen flow is too large	1. Adjust the flow rate
		2. Molecular sieve becomes aging	2. Replace molecular sieve. (By the professional engineer)
3	Machine works well but no oxygen	1. Oxygen tube connection is loose	1. Adjust the oxygen tube connection well
		2. Humidifier bottle leaks air	2. Reset the humidifier bottle again
4	Too noisy	The machine does not have place smoothly	Keep the machine at smooth place
5	No oxygen out or tiny outtake flow	1. Folded inside oxygen tube, no smooth outtake	1. Connect the oxygen tube again
		2. Filter clogged, no smooth intake	2. Clean the filter
		3. Some pipes are leakage	3. Open the cover and check the gas pipes
6	No exhaust sound	1. Air controller can not work	1. Have air control valve replaced
		2. PC board cannot work	2. Have PC board replaced
7	Too noisy exhaustion	1. The joint of exhaustion muffler fallen off	1. Connect the joint well
		2. Exhaustion muffler broken	2. Have the muffler replaced

Table 2

## 10. Transportation and Storage

### 10.1 Transportation and storage precautions

#### Attention:

1. Before transportation or storage, pour out the water from humidifier bottle.
2. During transportation and handling, oxygen concentrator shall be kept upright, prohibit inversion or horizontal placing.
3. When the storage temperature is below 10°C, place the oxygen concentrator in normal working environment for 8 hours before use.
4. Oxygen concentrator that has been stopped for long time shall be powered on for inspection before

### 10.2 Requirements for storage and transportation environment

Ambient temperature -20 °C ~ 50 °C

Relative humidity ≤ 95%

Atmospheric pressure 500hPa ~ 1060hPa

### 10.3 Transportation

Oxygen concentrator packed completely shall be protected from violent collision and direct contact with rain or snow during transportation.

### 10.4 Storage

Oxygen concentrator shall be stored in indoor well-ventilated places without strong sunlight and corrosive gases.

## 11. After-Sale Services

### 11.1 Warranty period

The product from the date of sale, under normal use and storage conditions, the warranty period of this product is one year or 5,000 hours (whichever is earlier). In case of any quality problems within warranty period, our company will repair for free; In case of any quality problems after the warranty period, our company will charge repair cost.

## 11.2 Warranty scope

The following circumstances shall not be within the free warranty of the company:

- 1) Damage due to improper operation of users or use under abnormal conditions;
- 2) Damage or deformation of machine (including components and parts) due to collision or falling;
- 3) Damage due to disassembly, repair or modification by users;
- 4) Damage caused by natural disasters;
- 5) Wearing parts and consumables: atomizer, filter etc.;

## 12. Accessories

#### Attention:

1. Do not use parts and accessories not recognized by the manufacturer, in order to avoid adverse effects on safety and product performance.
2. Oxygen concentrator shall use dedicated humidifier bottle, for replacement, please contact the dealer or manufacturer to purchase.

### 12.1. Packing List

No.	Name	Specification & Model	Unit	Qty	Remarks
1	Oxygen Concentrator		Set	1	
2	Power Cord	0.75mm*2	Pc	1	
3	Oxygen Tube		Pc	2	
4	Filter		Pc	2	
5	Instruction Book		Pc	1	
6	Warranty Card		Pc	1	