RESPIRCARE

Service Manual

Portable Medical Oxygen Concentrators

PO3/PO4/PO5/PO3SE/PO4SE/PO5SE

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Menu

Warranty

1. 2 years for unit (except molecular sieve) from the date of purchase.

2. 1 year for the battery and AC adapter (with power cord) from the date of purchase.

3. Consumable nasal oxygen tubes, molecular sieves and filter cotton are not covered by the warranty.

According to this warranty clause, RMS is only responsible for deciding to replace, repair, or issue certificates for defective or non-compliant components within the warranty period. According to this warranty clause, the company shall not be liable unless:
(a) the buyer immediately notifies the company in writing upon discovering defects or products that do not meet the published specifications;
(b) the defective device or component is returned to the company, with the transportation costs prepaid by the buyer;
(c) the company receives the returned defective device or component within four weeks from the last day of the warranty period;
(d) the company inspects the device or component and confirms that such defects or malfunctions were not caused by misuse, negligence, improper installation, unauthorized repairs, modifications, or accidents.
The buyer must have written authorization from the company for repairs or changes, otherwise, this warranty clause will be void. Except for the purchase price of defective products covered by this warranty clause, the company has no obligation to compensate the buyer for any loss of benefits, usage, indirect losses, or any claims for damages arising from a breach of the warranty clause.
The warranty clause stated here and in the previous text shall not be enlarged, diminished, or affected by any technical advice or services provided by the company or its agents regarding the buyer's purchase of the products covered by this document, nor shall it give rise to any legal liability or obligation.

The following cases are not covered by the free warranty:

Malfunctions or damages caused by unauthorized technicians who have tampered with or repaired the equipment without RMS's authorization.
Malfunctions or damages caused by improper use or maintenance.
Damages caused by liquid spillage or immersion leading to water ingress into the main unit.
Malfunctions or damages caused by accidents, natural disasters, or human disasters.
Unauthorized alterations to the warranty card.
This warranty clause does not cover regular maintenance, such as cleaning, adjustment, lubrication, or upgrades of equipment or parts. If accessories or parts not produced by the company are used without written authorization, or if the equipment is not maintained according to the specified maintenance schedule, this warranty clause will immediately become void and no longer applicable.

Chapter 1: Notice

Electromagnetic Compatibility

Basic performance: The parameters of the device can be set as need, and the parameters that have been set down will not be changed at will; the device can output gas when running without abnormal condition.
The device includes: PO3//PO4/PO5/PO3SE/PO4SE/PO5SE.
WARNING:

- In order to ensure the electromagnetic compatibility of portable medical oxygen concentrator, the device needs to be installed, conditioned and used as directed in the accompanying documents. In case the electromagnetic compatibility of portable medical oxygen concentrator is affected by any portable and mobile radio frequency communication equipment, please contact Shenyang RMS Medical Tech Co., Ltd for support.
- Electromagnetic compatibility: Electromagnetic compatibility refers to the ability of the equipment to have a certain degree of immunity to electromagnetic interference existing in the environment, while not causing similar electromagnetic radiation interference to other equipment. Portable medical oxygen concentrator will not cause interference to characteristics of other equipment through air or the connecting cables.
- Portable medical oxygen concentrator should not be used adjacent to or stacked with other equipment. If adjacent or stacked use is necessary, the device should be observed to verify normal operation after being correctly configured.
- The use of power adapter and power cords other than those supplied for the device by RMS is not recommended. They may result in increased emissions or decreased immunity of the device.

S. N.	Name	Length (m)	Shielded or Not
1	Power cord	1.5	No
2	Power adapter cord	1.2	Yes

Guidance and Manufacturer's Declaration-Electromagnetic Emissions: Portable medical oxygen concentrator is intended for use in the electromagnetic environment specified below, and the buyer or user of this device should assure that the device is used in such an environment.

Emission Test	Conformity	Electromagnetic Environment-Guidance
RF emissions CISPR 11	Group 1	The portable medical oxygen concentrator uses RF energy only for its internal function. As a result, its RF emissions are low and there is little potential for interference to nearby electronic equipment.
RF emissions CISPR 11	Class B	The portable medical oxygen concentrator is intended for use in all establishments, including domestic establishments and those directly connected to the public mortgaged power supply network that supplies buildings used for domestic purposes.
Harmonic emission IEC61000-3-2	Class A	

Voltage fluctuation/Flicker emission IEC61000-3-3	Conforms	

Guidance and Manufacturer's Declaration-Electromagnetic Immunity-for all equipment and systems:

Portable medical oxygen concentrator is intended for use in the electromagnetic environment specified below, and the buyer or user of this device should assure that the device is used in such an environment.

Immunity Test	IEC60601 Test Level	Compliance Level	Electromagnetic Environment-Guidance
Electrostatic discharge (ESD) IEC61000-4-2	± 6 kV contact discharge ± 8 kV air discharge	± 6 kV contact discharge ± 8 kV air discharge	The floor shall be made of wood, concrete or ceramic tiles. If the floor is covered with synthetic materials, the relative humidity shall be at least 30%
Electrical fast transient/burst IEC61000-4-4	± 2 kV for power cord ± 1 kV for input/output cords	± 2 kV for power cord NA	The mains supply shall be of a quality typical of that used in a commercial or hospital environment
Surge IEC61000-4-5	± 1 kV cord to cord ± 2 kV cord to ground	± 1 kV cord to cord NA	The mains supply shall be of a quality typical of that used in a commercial or hospital environment
Voltage dips, short interruptions and voltage variations on power supply input cords IEC61000-4-11	< 5% UT for 0.5 cycles (> 95% dip in UT) 40% UT for 5 cycles (60% dip in UT) 70% UT for 25 cycles (30% dip in UT) < 5% UT for 5 s (> 95% dip in UT)	< 5% UT for 0.5 cycles (> 95% dip in UT) 40% UT for 5 cycles (60% dip in UT) 70% UT for 25 cycles (30% dip in UT) < 5% UT for 5 s (> 95% dip in UT)	The mains supply shall be of a quality typical of that used in a commercial or hospital environment. If the user of the portable medical oxygen concentrator requires continuous operation during power mains interruptions, it is recommended that the portable medical oxygen concentrator be powered by an uninterruptible power supply or a battery
Power frequency magnetic field (50Hz) IEC61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels typical of a typical location such as commercial or hospital environment

Note: UT refers to the a.c. Mains voltage prior to application of the test voltage.

Guidance and manufacturer's declaration-electromagnetic immunity-for non life-support equipment and systems:

Portable medical oxygen concentrator is intended for use in the electromagnetic environment specified below, and the buyer or user of this device should assure that the device is used in such an environment.

Immunity Test	IEC60601 Test Level	Compliance Level	Electromagnetic Environment-Guidance
RF conducted IEC61000-4-6 Radiated RF IEC61000-4-3	3 V (rms) 150 kHz to 80 MHz 3 V/m 80 MHz to 2.5 GHz	3 V (rms) 3 V/m	Portable and mobile RF communications equipment should be used no closer to any part of the portable medical oxygen concentrator, including cables, than the recommended isolation distance. This distance shall be calculated from the formula for the frequency response of the transmitter. Recommended isolation distance $d=1.2\sqrt{P}$ 80 MHz - 800 MHz $d=2.3\sqrt{P}$ 800 MHz - 2.5 GHz in which: P--The maximum rated output power of the transmitter according to the transmitter manufacturer, in watts (W) d--Recommended isolation distance, in meters (m) The field strength of fixed RF transmitter is determined by an electromagnetic site survey a, and b should be less than the

			compliance level in each frequency range. 
Note 1: At 80 MHz and 800 MHz, the formula for the higher frequency band applies. Note 2: These guidelines may not be appropriate in all situations. Electromagnetic propagation will be absorbed and reflected by buildings, objects, and people.			
a. Fixed transmitters, such as base stations for wireless (cellular/cordless) phones and terrestrial mobile radios, amateur radios, AM and FM radio stations, and television broadcasts, cannot be predicted accurately in theory. Due to the presence of fixed frequency transmitters, consider conducting an electromagnetic site survey before entering the electromagnetic environment. If the magnetic field strength in which the equipment is tested does not exceed the applicable frequency compliance, the device will operate normally. If an anomaly occurs, additional testing may be required, such as relocating or repositioning the device. b. For frequencies beyond the range of 150 kHz to 80 MHz, the magnetic field strength shall be less than 3 V/m.			

Recommended isolation distance between portable and mobile RF communications equipment and portable medical oxygen concentrator:

The portable medical oxygen concentrator is intended for use in an electromagnetic environment with controlled radiation disturbance. According to the maximum rated output power of the communication equipment, the customer or the user of the portable medical oxygen concentrator can prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitter) and the portable medical oxygen concentrator as recommended below.

Maximum Output Power of Transmitter W	Isolation Distance for Different Frequencies of Transmitter/m		
	150 kHz to 80 MHz $D=1.2\times\sqrt{P}$	80 MHz to 800 MHz $D=1.2\times\sqrt{P}$	800 MHz to 2.5 GHz $D=2.3\times\sqrt{P}$
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 telecommunications transmitters not exceeding the maximum output capacity listed above, the isolation distance d (m) can be derived from the formula for the frequency of the telecommunications transmitter. In which P is the maximum output watts of the telecommunication transmitter provided by the manufacturer. Note 1: High frequency range applied at 80 MHz and 800 MHz Note 2: This guidance may not be applicable in all situations. Electromagnetic propagation will be influenced by absorption and reflection by buildings, objects, and people.			

Warnings and Precautions

Before using this device, please read all the contents of the manual carefully to avoid personal injury and property loss caused by improper operation.

SERIOUS WARNING

1.There is a risk of fire associated with oxygen enrichment during oxygen therapy. Do not use the oxygen concentrator or accessories near sparks or open flames;

Smoking during oxygen therapy is dangerous and is likely to result in facial burns or death. Do not allow smoking or open flames within the same room as the oxygen concentrator or any oxygen-carrying accessories. If you smoke, you must always turn the oxygen concentrator off, remove the cannula and leave the room where either the cannula or mask or the oxygen concentrator is located. If unable to leave the room, you must wait 10 minutes after you have turned the oxygen concentrator off;

Open flames during oxygen therapy are dangerous and are likely to result in fire or death. Do not allow open flames within 2 m of the oxygen concentrator or any oxygen-carrying accessories.

Oxygen makes it easier for a fire to start and .spread. Do not leave the nasal cannula or mask on bed coverings or chair cushions, if the oxygen concentrator is turned on, but not in use; the oxygen will make the materials more flammable. Turn the oxygen concentrator off when not in use to prevent oxygen enrichment.It is strictly prohibited to use the device in spaces with flammable gases and dusts.

It is strictly prohibited to place the medical nasal cannula near the combustibles such as bedding and curtains.

Use only water-based lotions or salves that are oxygen-compatible before and during oxygen therapy. Never use petroleum-based or oil-based lotions or salves to avoid the risk of fire and burns;

Do not lubricate fittings, connections, tubing, or other accessories of the oxygen concentrator to avoid the risk of fire and burns.;

Use only spare parts recommended by the manufacturer to ensure proper function and to avoid the risk of fire and burns.

2.This device is not intended for use as a life-supporting or life-sustaining device and is not intended for use on newborns and infants.

Please use this product according to the intended use specified in Instructions for Use.

The intended service life of this product is 5 years. The service life depends on the service environment and later maintenance; The harsh service environment will shorten the service life of the device.

When the device is used on the elderly, children or other patients who are unable to express their physical discomfort on their own, to communicate malaise messages and medical emergencies to responsible caregivers to avoid injury. Patients with hearing or visual impairment require caregiver assistance to monitor alarm messages. Patients with hearing or visual impairments need caregivers to help monitor alarms.

The pulse gears must be set according to the needs of each patient, for example, different settings may be required during rest, exercise and travel.

For the effectiveness of treatment, the oxygenator's functions and binning adaptations are periodically reevaluated.

If you feel discomfort or are experiencing a medical emergency while undergoing oxygen therapy, seek medical assistance immediately to avoid harm.

3.Electric shock hazard.
Before cleaning, be sure that the device is turned off and disconnected from the power socket.
Only the equipment vendor or qualified maintenance engineers can disassemble or maintain the machine.
Protect the device from water ingress, which would result in failure or shutdown of the device and an increased risk of electric shock.
4.Do NOT wipe the device using corrosive liquids.
The use of chemical detergents on the plastic housing of device may cause damage to the plastic housing, and these detergents include but are not limited to the following: highly concentrated chlorinated solutions (chloroethane), solutions of oil products, etc.
Clean the device body, control panel and power cord only with a wet cotton cloth or a sponge soaked with a neutral household cleaner, and then wipe dry the sites cleaned. Be careful to avoid fluids entering into the device. Take special care to ensure that the oxygen outlet is free of dust, water, or other granular matters.
5.The device should not be used in close proximity to or stacked on other equipment. If this is unavoidable, it is necessary to observe whether the device can operate properly before use.
This device may not be modified or disassembled at will, and any alteration to the device may impair performance or damage the device and void your warranty.
The use of power cords and power adapters other than the ones from the original packing may cause a safety hazard(s) or damage the performance(s) of the device.
Use only the voltage specified on the device label.
Do not use an extension cord or put too many plugs into the same socket. Extending the power cord may affect the operation performance of the device. Too many plugs in the same socket may cause overload and blow the fuse. If the fuse does not work, it may even cause a fire.
Operating in an environment other than the operating specification of the device may cause the oxygen concentration out of the device fail to meet the standard.
An elevation of more than 1848 Å or a temperature of more than 40 ° C or relative humidity of more than 93% will affect the flow rate and oxygen content, and further affect the quality of treatment.
7.Improper use of batteries may cause the batteries hot and burn, which may lead to serious injury.
Be sure not to puncture, hit, tread or bump the battery, and avoid any other collision that could have a significant impact on the battery. Use of damaged batteries may result in injury.
Do not expose the battery to a source of ignition or throw it into a fire, as this may cause the battery to explode, resulting in a potential risk of personal injury.
Do not short-circuit a battery with metal object such as a key, a coin, which may give off sparks or a lot of heat.
8.Contraindications for use:
Under certain circumstances where the use of over-the-counter oxygen can be hazardous, the device should be used with the guidance of a physician.

Do not use the device in the environment of flammable anesthetic gas.

9.As an electrical device, when the power supply is temporarily interrupted or exhausted, the device may stop working. The device is not intended for use on patients who have adverse health consequences as a result of temporary shutdown of the device. When used on a vehicle, the device should be properly secured to prevent damage to the device or injury to personnel.

In case of falling, damage or water ingress, etc., contact the supplier for inspection or repair.

Do NOT use damaged power cords or plugs.

10.Do NOT expose the device to rain or snow. Do NOT operate the device in rain, as this may cause electric shock and damage to the device.

Please do not use this product in an environment with high temperature and high humidity (such as an unmanned car with high temperature or a bathroom with high humidity), so as to avoid damage to the device.

When the unit is not in use, the power plug must be unplugged.

11.The maximum flow rate of the backup continuous oxygen supply function is 0.66, 0.88 and 1 L/min, respectively. The user should make selection according to the doctor's advice. Users with severe hypoxia or need high flow oxygen inhalation should use it with caution.

12.During the continuous oxygen supply, if there is user's spontaneous breathing, the device provides in pulse mode.

WARNING

1. Place the device correctly.
   a) Avoid fumes and contaminants as far as possible when using the device.
   b) Please ensure that the power cord and oxygen circuit of the device are not kinked.
   c) Do not use the device in small spaces or in restricted spaces with poor ventilation (e.g. Small cartons, handbags) as this may cause overheating of the device and hinder the oxygen supply.
   d) Pay attention to checking whether the air inlet and exhaust gas outlet of the device are blocked. Do not plug anything into the hole of the device.
   e) When using the device on an automobile, ship or other vehicle with DC power supply, ensure that the power supply system of the vehicle is activated before connecting the device. Make sure the DC power indicator light is on; if not, first disconnect the DC power supply, restart the power supply system of the vehicle, and then re-connect, or you will not succeed in powering the device.
2. We recommend that the user prepare an alternative oxygen storage device in case the device shuts down due to power failure or mechanical failure.
   a) Consult your physician to select your alternate oxygen source.
   b) It is very important to select the prescribed oxygen flow rate, which should not be changed, unless recommended by a qualified physician.
   c) If you need to use the device during sleep, consult a qualified physician first for any consideration.

3. If the device is long stored at non-standard operating temperature, it is necessary to allow the device temperature to return to normal operating temperature before using. (Refer to Specifications section of the manual)
   a) Running or storing at non-standard operating temperature may affect the performance of the device, impacting the endurance of the battery and increasing the charging time. (Refer to Specifications section of the manual)
   b) Please store the device and the backup battery (optional) at a dry and cool place to maximize the life span of the battery. Long exposure to high temperature/overcharging/over discharging will shorten the battery life. Do not disassemble the battery; there are no inner parts that can be repaired anyway. Keep battery out of the reach of children.
   c) Only batteries supplied by the manufacturer can be used. The discarded batteries should be disposed following local regulations.
4. Please refer to the Troubleshooting section of the manual when the device alarms or is observed to be running poorly. If you are unable to resolve the problem, please contact the device supplier.
   For failure that has no solution in the Troubleshooting, do not attempt to repair. Do not disassemble the housing, and contact the equipment supplier or qualified service personnel to disassemble the unit for repair.

CAUTION

1. Be sure that the nasal cannula is properly installed so that the device can detect breath and deliver pulse oxygen correctly.
   a) The position of the nasal oxygen tube in the nostril and the direction of its exhalation port determine the amount of oxygen output to the patient's respiratory system.
   b) Turn on the oxygen generator, adjust to the expected flow of oxygen, gas flow smoothly to the nasal oxygen tube, can hear or feel the flow of the nasal oxygen tube out of the mouth. Reach your hand into front of the nasal oxygen tube's out of the mouth of the air and if you can't feel the air flow, check for leakage of the nasal oxygen tube connection.
   c) Please use the nasal cannula as per the manufacturer's instructions for use. When needing to replace the nasal cannula, please refer to the advice of the manufacturer or the equipment supplier, and you may buy other accessories from the equipment supplier.
2. Accessories of the device purchased by yourselves that are not within the specification may affect the performance of the device. It is recommended to refer to the manual to purchase accessories. Incompatible parts or accessories can lead to performance degradation
3. Do not run the device without an inlet filter.
   a) If any suitable filter is available, install the filter before running the device.
   b) Device sterilization is not recommended by the manufacturer.
4. Please pay attention to the warranty and follow the manufacturer's instructions.
5. In light of the fact that most electrical appliances are susceptible to radio frequency interference, the device may also be influenced by portable and mobile RF devices in the vicinity.
6. To ensure the efficacy of oxygen therapy, the device must be used at a specific activity level of the patient; otherwise, the pulse may not be triggered.
7. Below or beyond the recommended respiratory rate, temperature, and humidity range may affect the user's effective inspired oxygen concentration.
8. To ensure receiving the therapeutic amount of oxygen delivery according to your

medical condition PO3/PO4/PO5/PO3SE/PO4SE/PO5SE must:

a) be used with settings that have been individually determined or prescribed for you at your activity levels with your accessories.

b） be used with the specific combination of parts and accessories that are in line with the

specification of the concentrator or accessory manufacturer.

9. Please note that electric wires or disposable nasal oxygen tubes may cause tripping or strangulation, and it is prohibited to wrap electric wires or disposable nasal oxygen tubes around the neck.

10.Please place the equipment away from heat sources and pollutants, such as fireplaces, electric kettles, etc. The equipment shall be at least 10cm away from walls, tapestries, furniture, and the like.

11. Do not use this device while taking a shower. If the patient needs continuous use, the oxygen generator must be placed at least 2.0M away from the bathroom.

12. Do not touch the oxygen generator when your body is wet. Do not use or store the oxygen generator near water or other easily conductive liquids.

13. It is strictly prohibited to block the inlet/outlet ports of the oxygen generator or place the machine on a soft surface, such as a sofa or bed, which can cause blockage of the inlet/outlet ports. The inlet/outlet ports should be kept away from plush, hair, or other similar objects.

14. This equipment and optional accessories do not contain natural rubber latex components.

PRECAUTIONS ABOUT BATTERY

1. For all batteries supplied with the device:
   a) Please use the battery provided by the equipment manufacturer; and contact the equipment manufacturer for any replacement.
   b) Improper use may result in battery overheating, burning and even injury to the user.
   c) Be sure not to puncture, hit, tread or bump the battery, and avoid any other collision that could have a significant impact on the battery.
   d) It is unnecessary to fully discharge the battery before recharging. It is recommended to charge the battery every time after use.
   e) Fully charged/discharged at a high temperature is likely to permanently undermine the peak capacity of lithium batteries.
   f) For proper battery maintenance, it is recommended to keep the battery at 20% - 50% and place it in an environment at 23℃ ± 2℃.
   g) When the device remains inactivated for a long period, please take out the battery. The removed battery should be handled carefully to protect the electrode against contact with metal conductors to avoid dangers like fire.
   h) Keep the battery out of the reach of children.
2. For the device supplied with batteries:
   i) Whenever the device (on/off) is connected with the adapter power supply, charging begins until the battery is fully charged.
   j) However, power adapter plug-in when the device is running will trigger trickle charging mode automatically, charging the battery at a slow rate.

Medical Information

- Intended use: This product is used to produce oxygen-enriched gas (93% oxygen) and is suitable for patients who need high-concentration oxygen. This device is suitable for use at home, institution, and during trip/transfer. This product is not intended for life support. The backup continuous oxygen supply function of this product is not suitable for severely hypoxic users.
- Contraindications:
  - Contraindicated in patients with severe carbon monoxide poisoning.
  - This device is contraindicated in patients with oxygen intoxication or oxygen allergy.
  - This device is not intended for life-supporting or life-sustaining treatment.
  - This device is not intended for use in newborns or infants.
- This product is designed to be used at home, institution and during trip/transfer by properly trained qualified personnel under the direction of a physician and within the technical specifications.

Safety Information

Before operating the Portable Medical Oxygen Concentrators, please review the following safety information. It is important to thoroughly understand the features and characteristics of the Portable Medical Oxygen Concentrators before attempting to operate them, as unsafe operating conditions may arise otherwise. The warnings and precautions included in this section are applicable to the use of Portable Medical Oxygen Concentrators in any environment.

The manual also includes certain warnings and precautions inserted at specific relevant points throughout.

The manual also includes "Caution" sections to provide additional information related to specific product features.

If you have any questions regarding the installation, setup, operation, or maintenance of the Portable Medical Oxygen Concentrators, please contact the customer service department of Meisi Medical as indicated in Appendix A, "Contact and Ordering Information".

If you have any questions regarding the installation, setup, operation, or maintenance of the Portable Medical Oxygen Concentrators, please contact the after-sales personnel or distributor of Shenyang Meisi Medical Technology Co., Ltd. Ensure to follow standard electrostatic discharge precautions when operating the Portable Medical Oxygen Concentrators. Before performing any repairs or servicing on the Portable Medical Oxygen Concentrators, ensure that the therapy device is disconnected from the power source and the molecular sieve canister is removed. Only then can repairs or maintenance be carried out on the Portable Medical Oxygen Concentrators.

Terminology

Warning: Conditions or actions that may result in serious adverse reactions or potential safety hazards.

Caution: Conditions or actions that may cause damage to the Portable Medical Oxygen Concentrators or other equipment.
Note: Supplementary information to help you better understand the operation of the Portable Medical Oxygen Concentrators.
"Warning" and "Caution" will appear throughout the manual in relevant sections. The listed warnings and cautions apply each time the Portable Medical Oxygen Concentrators are used.
• Meisi Portable Medical Oxygen Concentrators should only be used by trained and qualified practitioners under the guidance of a physician.
• Qualified healthcare professionals should be present when connecting the Portable Medical Oxygen Concentrators to patients to promptly respond to alarms or other issues.
• If mechanical or electrical problems are identified during operational verification tests or while operating the Portable Medical Oxygen Concentrators, usage must be discontinued and qualified personnel should be consulted for repairs. Using a non-functioning Portable Medical Oxygen Concentrators may pose harm to patients.
• Use of the device in proximity to other equipment such as high-frequency surgical (diathermy) equipment, defibrillators, shortwave therapy devices, walkie-talkies, or mobile phones may adversely affect the functionality of the Portable Medical Oxygen Concentrators.
• Electrical hazard - Do not remove any covers or panels of the Portable Medical Oxygen Concentrators. All repairs should be performed by authorized Meisi Medical service technicians.
• To avoid electrical shock, plug the power cord into a properly wired outlet, use only the supplied power cord for the Portable Medical Oxygen Concentrators, and ensure the power cord is undamaged.

Symbols

The following symbols may appear on the Portable Medical Oxygen Concentrators:

Symbols	Description	Symbols	Description
	No smoking		No open flames
	Do Not disassemble		Protection against oil and grease
	Temperature limits		Humidity limitation
	Class II, protection against electric shock		Non-ionizing electromagnetic radiation
	Consult instructions for use		Deliver to an appropriate facility when discarding
	Consult accompanying documents before use		Protect from rain and keep the device and accessories dry

CE 0197	Made in compliance with 93/42/EEC Directive	EC REP	European authorized representative
	Manufacturer (name and address)	SN	Serial number
	Type BF		Date of manufacture
IP21	Degree of ingress protection Protected against a solid ≥ 12.5 mm in diameter. Protected against vertically falling drops of water.		Attention! Consult accompanying documents
	This side up		Fragile, handle with care
	Recyclable		Made in compliance with IEC60601-1
	Alarm		Audio pause
	Start/Stop button		Settings button
	Gear +/Move/Page turn button		Gear-/Move/Page turn button/Backup continuous oxygen supply function switch button
	Battery level icon		External power status icon
	Pulse trigger icon		The running time of this boot-up
	Back-up continuous oxygen supply function icon		

Chapter 2: Operating Principles

Overview of the Electronic System

The electronic system of the Portable Medical Oxygen Concentrators consists primarily of the main control system, human-machine interaction system, and power system, each of which is composed of multiple subsystems. The following provides a detailed introduction to each of these constituent systems.

The main control system comprises the microprocessor control system, data acquisition system, data storage system, and alarm system. The microprocessor control system is the core component of the entire device, responsible for coordinating and controlling the overall system, and overseeing all functions of the equipment. It comprehensively processes and analyzes information received from other systems, issuing corresponding instructions to control the respective actions of the device, such as pulse triggering based on respiratory pressure. It also handles the control of the display screen, processing of human-machine interaction information, and other functions.

The data acquisition system consists of multiple signal converters and is primarily responsible for collecting relevant signals. Temperature sensors and pressure sensors convert temperature and pressure signals into analog signals for processing by the microprocessor.

The data storage system is primarily responsible for storing various equipment-related data.

The alarm system continuously monitors the periodic activities of the main control system in real-time, providing safety assurance for both users and the device. If any abnormality is detected, it immediately displays the alarm information, emits audiovisual alarm signals, and provides prompts. Once the abnormal condition is resolved, the device can return to normal operation.

The power system provides stable power supply to the entire device, including 20V power support, as well as 12V and 5V power support. The 20V power is supplied by an AC-DC power adapter, which converts 220VAC into stable 20VDC, serving as the main source of DC power for the equipment. The 12V and 5V power supplies utilize DC-DC technology to convert the 20V power into the required DC voltages for various components. The 20V power primarily supports the compressor, while the 12V and 5V power supplies mainly power the mainboard.

Circuit Diagram

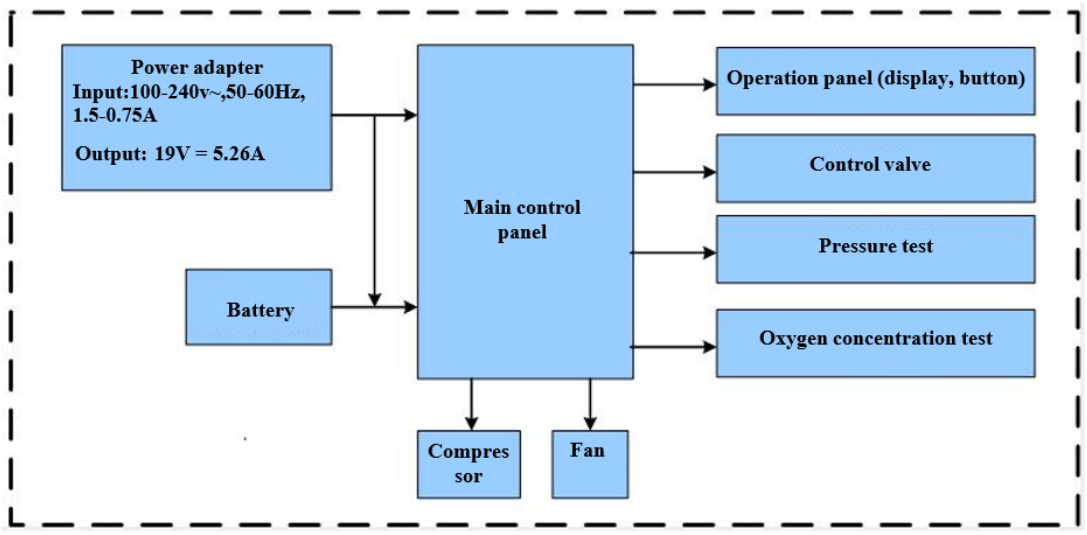


Figure 1: Circuit Diagram

Operation Panel Introduction

➢ Control Panel

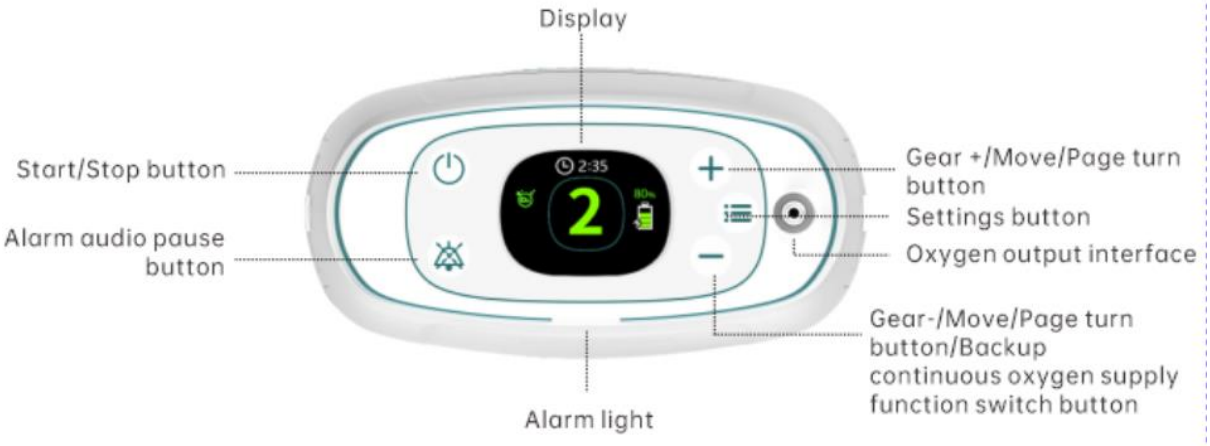


Figure 2: Introduction to Control Panel Functions

Introduction to Control Panel Functions

S. N.	Name	Functional Specification
1	Start/Stop button	When the device is off, it will be turned on after press and hold; When the device is running, the device will be shut down after press and hold;
2	Display	Display running status of the device and set page and alarm and other information;
3	Gear + /Move/Select/Page turn button	In the main interface, press to add running gears; In the main interface, simultaneously press and to enter the alarm log viewing interface; In the setting page, the has the function of moving/page turning;

		In the alarm log viewing interface, press + for page turning;
4	Gear-/Move/Select/Page turn button/Backup continuous oxygen supply function switch button	In the main interface, press — to remove running gears; In the main interface, press — and hold for 3 s to switch between "Back-up pulse oxygen supply function" and "Back-up continuous oxygen supply function"; In the setting interface, the — has the function of moving/turning page; In the alarm log viewing interface, press — for page turning;
5	Settings button	In the main interface, press ☰ to enter the setting interface; In the setting interface, press ☰ to select/exit the setting menu; press ☰ and hold to return to the main interface;
6	Oxygen output interface	Oxygen output interface of the device;
7	Alarm indicator	When the device alarms, the alarm indicator light is on;
8	Alarm audio pause button	When an alarm occurs, press 🔕, and the alarm audio will pause for 2 minutes, and the alarm and alarm audio pause icon will be displayed on the display at the same time.

(Note: Use the Alarm Audio Pause button with caution, as it mutes the basic audio signal associated with the device status)

(Note: For reference only, as the arrangement of the control panel may vary with situations related to alarm, alarm audio pause status, fault and gear levels, and the actual display content shall be subject to the running status of the device.)

➢ Main Interface of Display

Figure 3 Main Interface of Display

S. N.	Name	Functional Specification
1	The running time of	Display the accumulated operation time of the device this time;

	this boot-up	
2	Pulse trigger Icon	Gives off a flicker when the breath triggers the pulse. For the user's automatic triggering, the icon will turn green; for the backup automatic pulse triggering of the device, the icon will turn yellow;
3	Gear display area	Display the gear of the device running;
4	Battery level icon	Display the battery level;
5	External power status icon	When the device is connected to an external adapter and the power is switched on, the icon will appear;
6	Alarm icon	When the device alarm occurs, the icon will appear;
7	Alarm audio paused icon	Turn on the alarm audio pause button to enter the alarm audio pause status, disable the audible alarm signal during this period, and resume the alarm audio status two minutes later;
8	Alarm information display area	Display the alarm status and prompt information of the device;

(Note: The above descriptions are for reference only, as the arrangement of the display screen may vary with situations related to alarm, mute, fault and gear levels, and the actual layout shall be subject to the operating status of the device.)

- **Display Setting Interface**

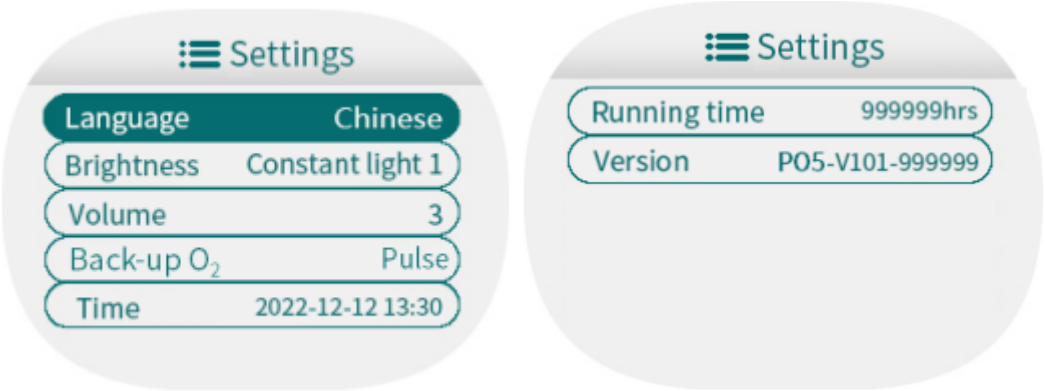


Figure 4 Display Setting Interface

Interface operation logic	1 Press the gears + and - to move up and down;
	2 Press the setting button to enter the selected state;
	3 Press the gears + and - to select the setting content;
	4 Press the setting button again to exit the selected state;
	5 Press the setting button and hold to automatically save the setting information for returning, returning to the main interface;

	Language settings	Language can be set;

Introduce	Screen brightness	6 brightness are available: dimming 1, dimming 2, dimming 3, constant lighting 1, constant lighting 2, constant lighting 3; (brightness from largest to smallest for "1-3")
	Volume	5 gears are available: 1-5; (volume from largest to smallest for "1-5")
	Back-up O2 supply function	PO3、PO4、PO5 have two modes：pulse mode and continuous mode； the other modes only operate in back-up continuous mode in default；
	Time	The display time of device can be set;
	Cumulative running time	Display the accumulated operating time of this device;
	Software version number	Display the current software version number of this device;

(Note: The above descriptions are for reference only, as the arrangement of the display screen may vary with situations related to alarm, mute, fault and gear levels, and the actual layout shall be subject to the operating status of the device.)

- **Display Alarm Log Viewing Screen**

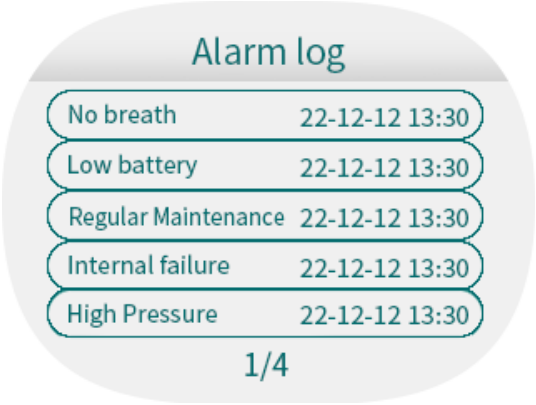


Figure 5 Display Alarm Log Viewing Screen

Interface operation logic	1	On the main interface, press the "+" and "-" buttons at the same time to enter the alarm log viewing interface;
	2	5 alarm messages will be displayed on a single page. Press the "+" and "-" buttons to turn the page;
	3	Turn to the last page and press "-", or press "+" on the first page to return to the main interface;

- When an alarm is triggered during normal use, the device will automatically save the alarm item and the alarm start time (format: YY-MM-DD-HH: MM), and record them in the internal memory (except for power failure alarm). The user can view the alarm history record in the alarm log viewing interface.
- After the alarm record has been normally saved, the alarm log will still be stored

in the device when the device is powered off (supply mains and (or) internal power supply).

(Note: The above descriptions are for reference only, as the arrangement of the display screen may vary with situations related to alarm, mute, fault and gear levels, and the actual layout shall be subject to the operating status of the device.)

- **Back-up Continuous Oxygen Supply Function Interface（only for PO3、PO4、PO5）**

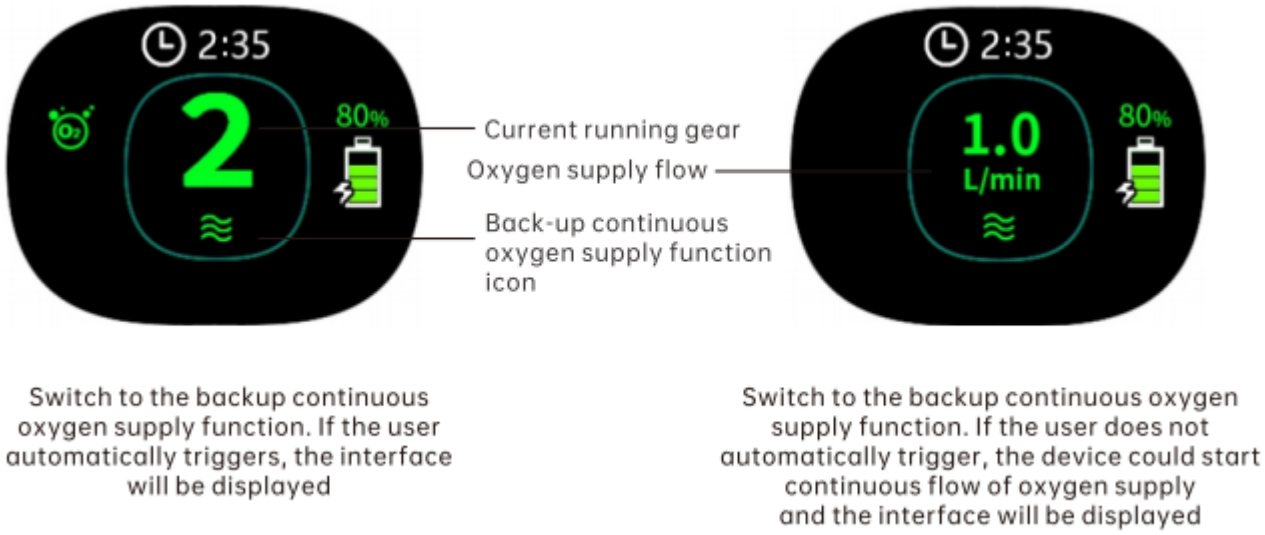


Figure 6 Back-up Continuous Oxygen Supply Function Interface

S. N.	Name	Functional Specification
1	Back-up continuous oxygen supply function icon	In the main interface, press — for 3 s or switch to "backup continuous oxygen supply function" in the setting interface, and the icon ≋ will appear;
2	Current running gear	After starting the backup continuous oxygen supply function, if the user automatically triggers, the device will perform pulse oxygen supply according to the user's trigger, and the current pulse oxygen supply gear will be displayed;
3	Oxygen supply flow	After the backup continuous oxygen supply function is enabled, if the user does not manually trigger, the device will start continuous flow of oxygen supply and oxygen supply flow value will be displayed;

(Note: The above descriptions are for reference only, as the arrangement of the display screen may vary with situations related to alarm, mute, fault and gear levels, and the actual layout shall be subject to the operating status of the device.)

Chapter 3: Disassembly and Assembly

3.1 Required Tools

• (PH2)6×250mm Phillips screwdriver
• Anti-static wrist strap
• 4×150mm Flathead screwdriver
• Lint-free cloth

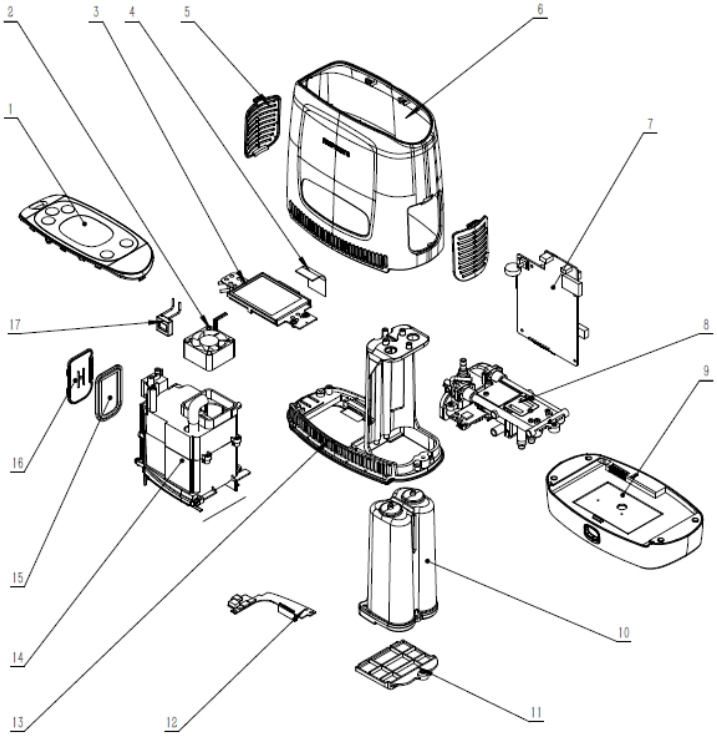
3.2 Instructions and Warnings

• Disassembly and repair of the Portable Medical Oxygen Concentrators should only be carried out by trained authorized repair technicians. The information provided in the repair manual is intended to assist the manufacturer in identifying repairable components.
• Before performing repairs, turn off the power switch on the top of the main unit and disconnect the power cord. Wait for the machine to come to a complete stop before removing the battery and unplugging the molecular sieve canister.
• Wear an anti-static wrist strap to prevent static electricity from damaging the equipment.

3.3 Disassembly and Reassembly Procedures

When replacing or repairing a specific component of the device, follow the corresponding steps for disassembly as shown in this chapter. When reassembling the component, follow the reverse steps of the disassembly process for installation.
Note: Before disassembling any component, always disconnect the power to the device. Only after the device is fully assembled, should the adapter be connected.

3.3.1 Diagram of Detachable Parts



No.	Components
1	Upper shell body
2	Fan
3	LCD screen panels
4	FPC cable
5	Main shell side panels
6	Main shell body
7	Mainboard
8	Valve seat
9	Battery
10	Molecular sieve
11	Molecular sieve cover
12	External power interface board
13	Lower Shell Assembly
14	Compressor compartments
15	Filter cotton
16	Intake filter cover
17	Speaker

Figure 7 Diagram of Detachable Parts for Portable Medical Oxygen Concentrators

3.3.2 Replace the intake filter cotton

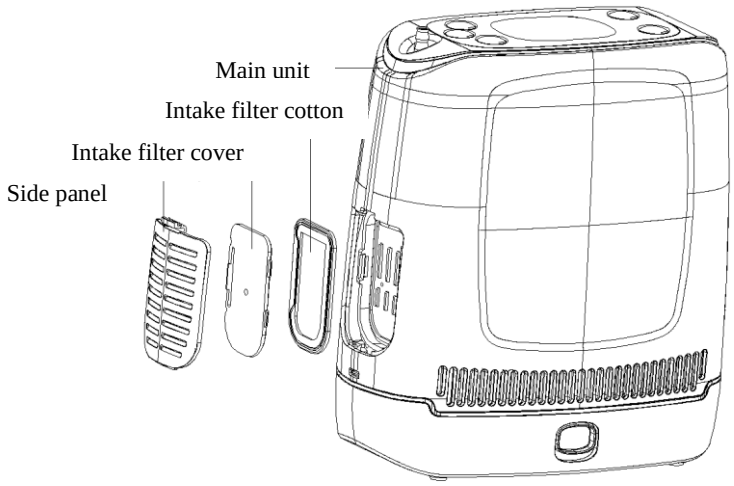


Figure 8 Replace the intake filter cotton

Remove

1.Press down on the side panel latches of the main casing and remove the side panel.

2.Press on the air intake filter cover latch, gently lift the air intake filter cover, and

then remove it.

3.Carefully pull out the air intake filter cotton.

Install

Follow the reverse process for reassembly.

3.3.3 Replace the battery

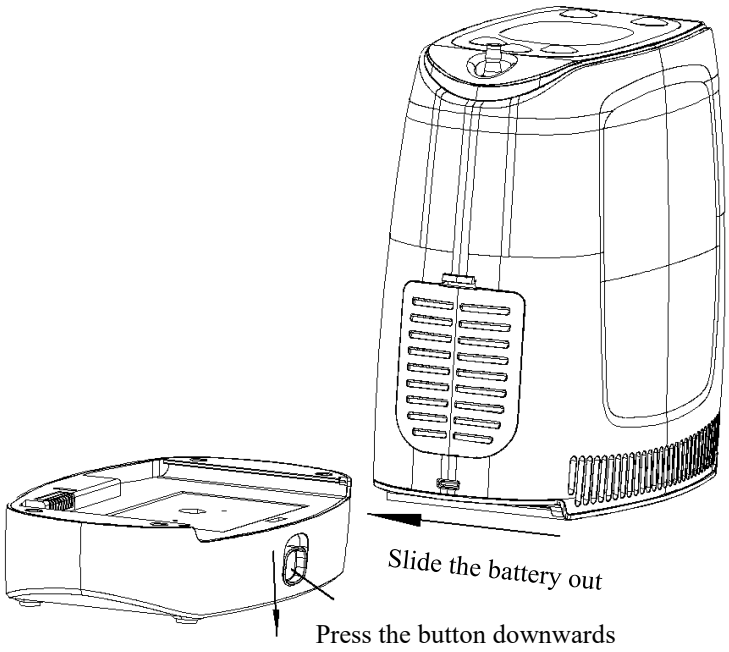


Figure 9 Remove the battery

Remove

1.Press the button downwards. (Refer to Figure 9.)

2.Push the battery compartment component backwards to slide it out. (Refer to Figure 9.)

Install

Follow the reverse process for reassembly.

3.3.4 Replace molecular sieve

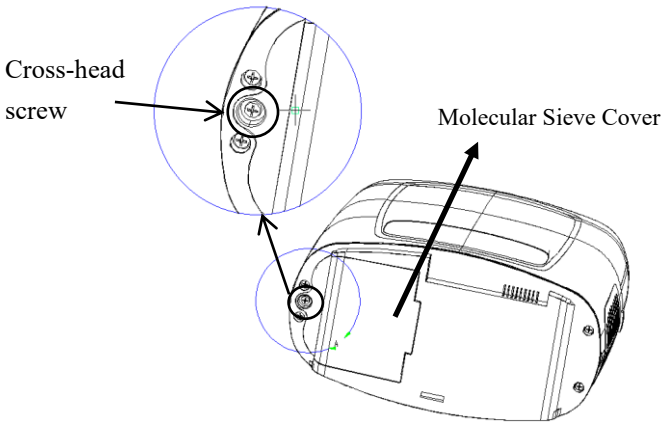


Figure10 Remove the cover

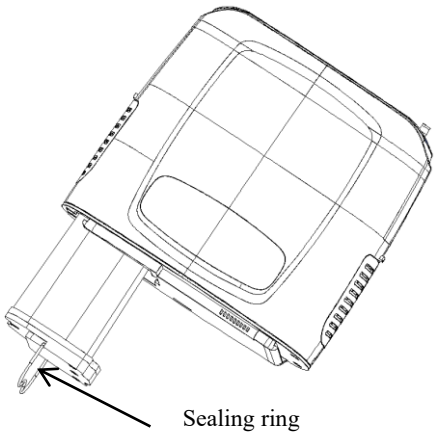


Figure 11 Remove the molecular sieve

Remove

Use a cross screwdriver to unscrew the cross-head self-tapping screws securing the plate on the body of the molecular sieve. Remove the plate.

Open the bottom pull ring of the molecular sieve and firmly pull out, ensuring the top sealing ring of remains intact.

Install

Follow the reverse process for reassembly.

3.3.5 Replace the main shell body

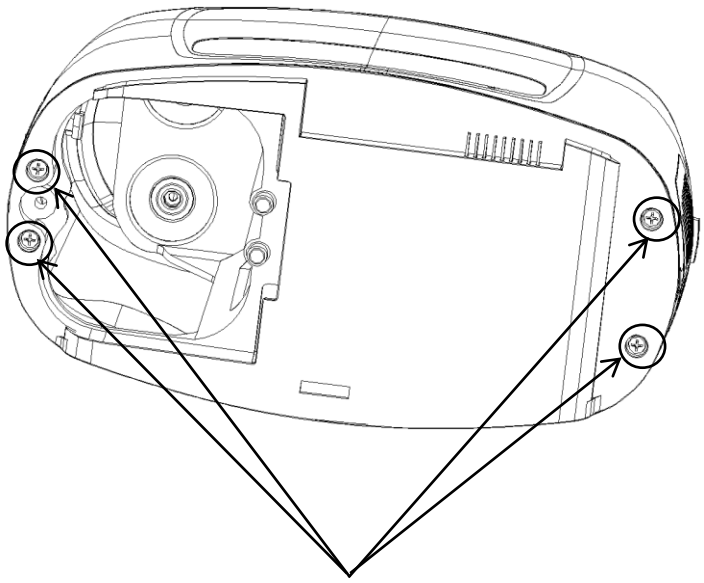


Figure 12 Replace the main shell body (1)

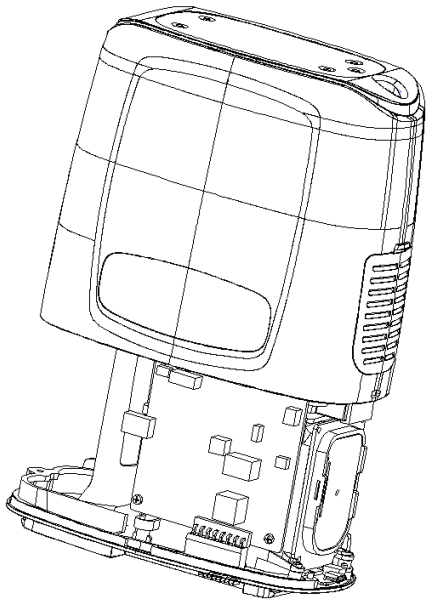


Figure 13 Replace the main shell body (2)

Remove

1. Use a Phillips screwdriver to unscrew the four cross-head self-tapping screws securing the lower shell assembly of the Portable Medical Oxygen Concentrators (Refer to Figure 12).
2. Grasp the main shell assembly and gently pull it upwards (Refer to Figure 13).

Install

Follow the reverse process for reassembly.

3.3.6 Replace the upper shell body

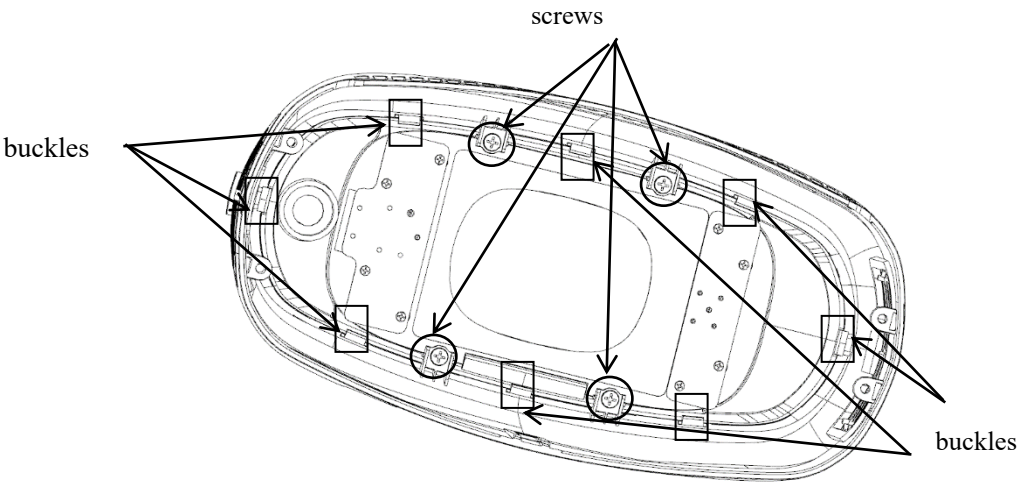


Figure 14 Replace the upper shell body

Remove

Use a cross-head screwdriver to unscrew the four screws that secure the main body and upper shell. Gently pry open the eight clasps using a flat-head screwdriver (Refer to Figure 14).

Install

Follow the reverse process for reassembly.

3.3.7 Replace the mainboard

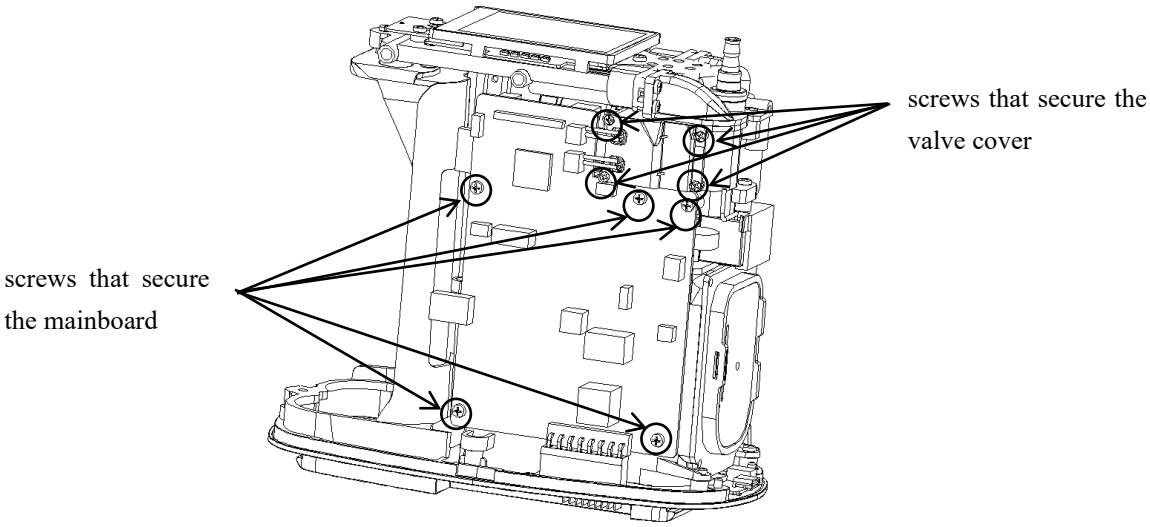


Figure 15 Replace the mainboard

Remove

1.Use a cross-head screwdriver to unscrew the four screws that secure the valve cover, and remove the valve cover (Refer to Figure 15).

2. Disconnect all wire harness connectors from the mainboard, and use a cross-head screwdriver to unscrew the five screws that secure the mainboard component. Remove the mainboard (Refer to Figure 15).

Install

Follow the reverse process for reassembly.

Note： When disassembling the mainboard component, wear an anti-static wristband.

Caution： Be careful not to damage the electronic components on the mainboard while disassembling. Use appropriate force when inserting or removing connectors to prevent damage to the mainboard. Pay attention to personal safety.

3.3.8 Replace the LCD screen panel

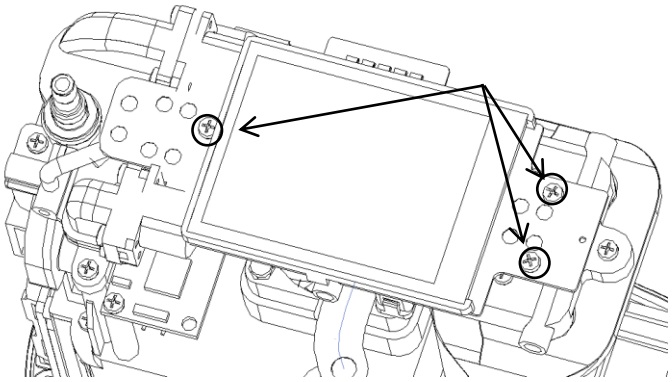


Figure 16 Replace the LCD screen panel

Remove

Remove all wire harness connectors from the LCD panel. Use a Phillips screwdriver to unscrew the three screws corresponding to the LCD panel component and remove the LCD panel (see Figure 16).

Install

Follow the reverse process for reassembly.

Note： When disassembling the LCD screen panel component, wear an anti-static wristband.

Caution： When disassembling the LCD screen, be careful not to damage the electronic components on top. Use caution when plugging and unplugging connectors to prevent damage to the LCD screen. Pay attention to personnel safety.

3.3.9 Replace the valve seat

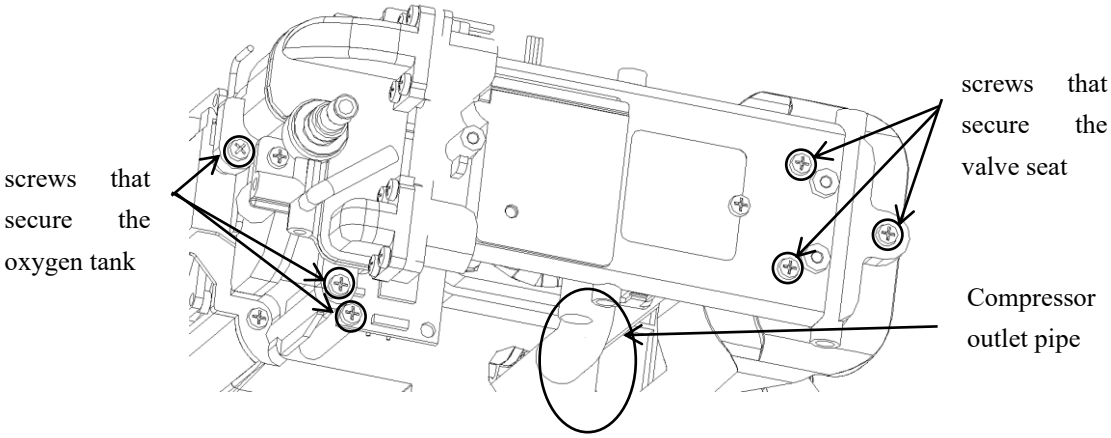


Figure 17 Replace the valve seat and oxygen tank

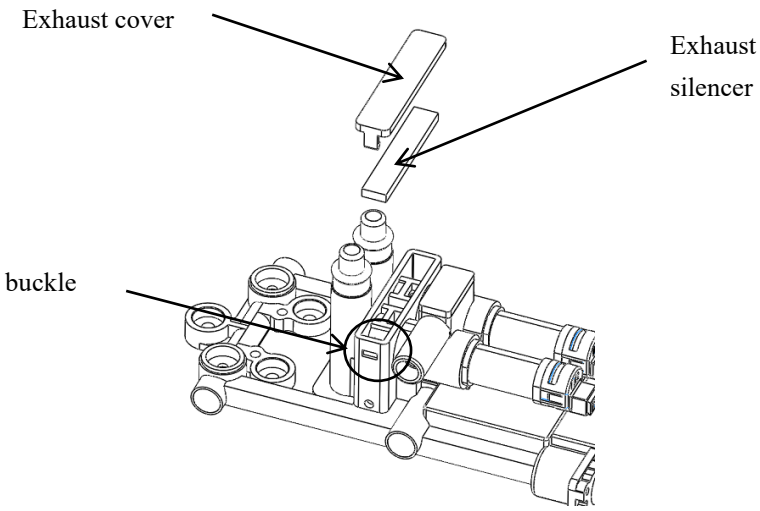


Figure 18 Remove the Exhaust cover and silencer cotton

Remove

1. Unplug the compressor outlet pipe. (Refer to Figure 17)
2. Use a screwdriver to unscrew the three screws that secure the oxygen storage tank assembly and the three screws that secure the valve seat assembly, and remove the oxygen storage tank assembly and valve seat assembly. (Refer to Figure 17)
3. Cancel the exhaust cover at the buckle position and remove the exhaust silencer cotton (Refer to Figure 18)

Install

Follow the reverse process for reassembly.

3.3.10 Replace the compressor compartment

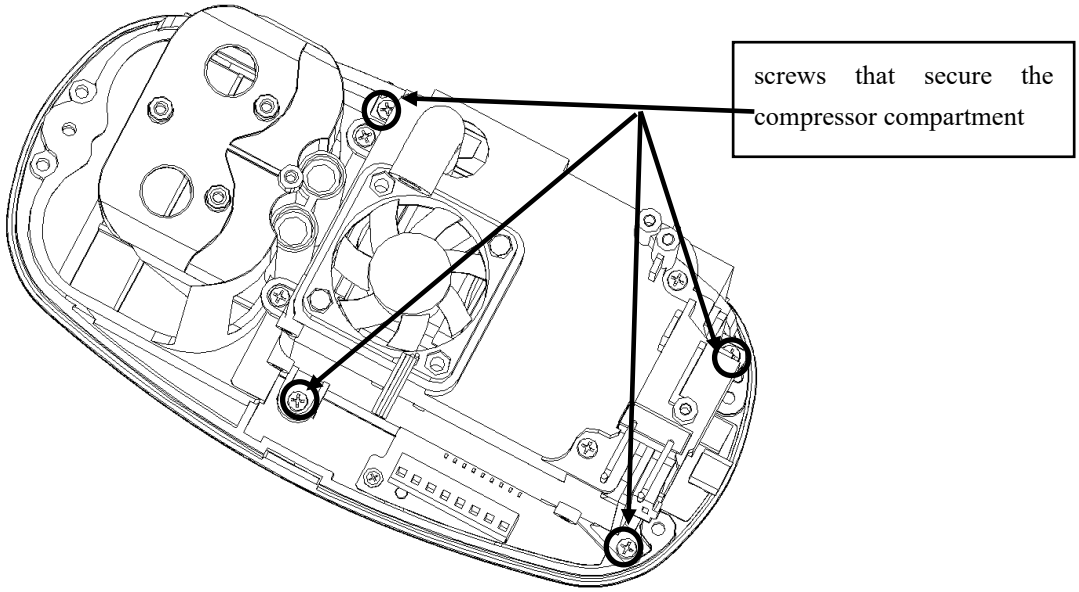


Figure 19 Replace the compressor compartment

Remove

1.Use a cross-head screwdriver to unscrew the four screws that secure the compressor compartment, and remove the compressor compartment (Refer to Figure 19).

Install

Follow the reverse process for reassembly.

3.3.11 Remove the fan and speaker

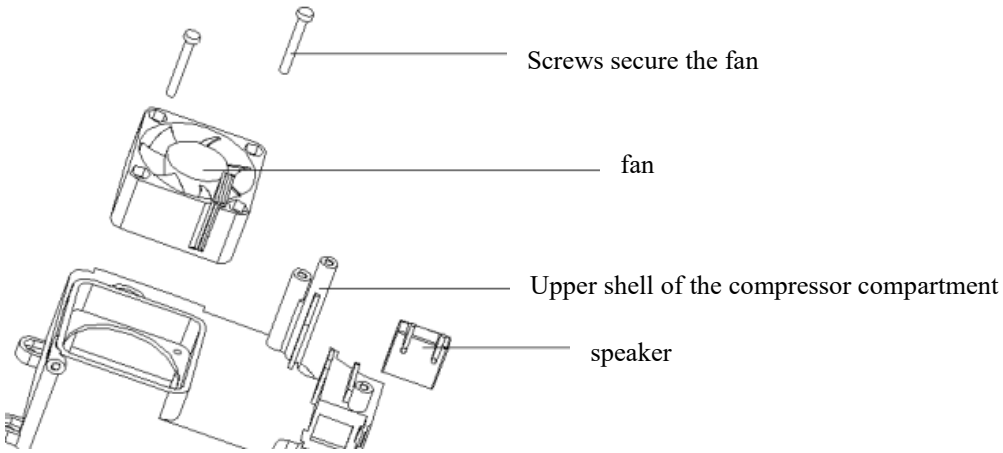


Figure 20 Remove the fan and speaker

Remove

1.Use a cross screwdriver to unscrew the two screws that secure the fan, remove

the fan, unplug the wiring harness connector of the speaker on the mainboard component, gently push the speaker out from below, and remove the speaker. (Refer to Figure 20)

Install

Follow the reverse process for reassembly.

3.3.12 Replace the external power interface board

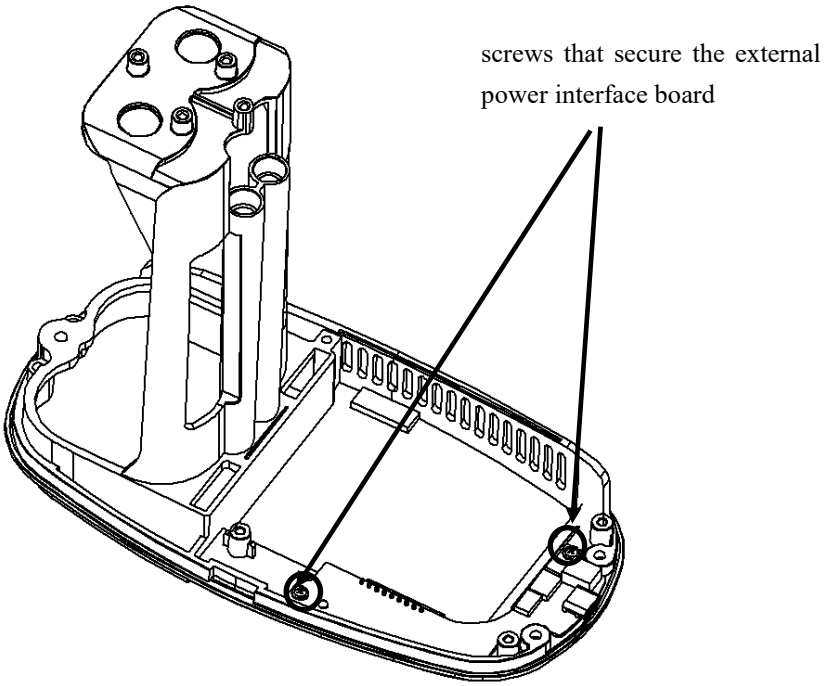


Figure 21 Replace the external power interface board

Remove

1.Use a cross-head screwdriver to unscrew the four screws that secure the external power interface board, and remove the external power interface board (Refer to Figure 21).

Install

Follow the reverse process for reassembly.

Chapter 4: Software Program Download

Please follow the instructions below to flash the program for the Portable Medical Oxygen Concentrators. If you need assistance, please contact Shenyang RMS Medical Technology Co., Ltd. or your authorized dealer.

Warning:

• Ensure that the Portable Medical Oxygen Concentrators are powered off and the battery is installed before proceeding with the program flash.

• Confirm that the Portable Medical Oxygen Concentrators model matches the program version before proceeding with the program flash.

• Verify that the program being flashed is the latest version before proceeding with the program flash.

• Ensure that the changed serial number corresponds to the product number before initiating the serial number change download.

• Do not remove the USB drive or battery during the program flash.

Program download:

Install the battery in the Portable Medical Oxygen Concentrator and turn it off. Insert the USB flash drive with the corresponding program for the Portable Medical Oxygen Concentrator Type-C interface. Then simultaneously press and hold the power button and the mute button until the alarm light flashes (approximately 3 seconds). Release the power button and the mute button, and the device will enter the program download phase. Do not remove the USB flash drive or the battery. Wait for the screen to turn on (approximately 15 seconds), indicating that the program has been successfully burned.

Serial number modification download:

Install the battery in the Portable Medical Oxygen Concentrator and turn it off. Insert the USB flash drive with the serial number reset program for the Portable Medical Oxygen Concentrator Type-C interface. Then simultaneously press and hold the power button and the mute button until the alarm light flashes (approximately 3 seconds). Release the power button and the mute button, and the device will enter the program download phase. Do not remove the USB flash drive or the battery. Wait for the screen to turn on (approximately 15 seconds), indicating that the serial number reset is complete.

Install the battery in the Portable Medical Oxygen Concentrator and turn it off. Insert the USB flash drive with the updated serial number program for the Portable Medical Oxygen Concentrator Type-C interface. Then simultaneously press and hold the power button and the mute button until the alarm light flashes (approximately 3 seconds). Release the power button and the mute button, and the device will enter the program download phase. Do not remove the USB flash drive or the battery. Wait for the screen to turn on (approximately 15 seconds), indicating that the serial number modification download is complete.

Note: If the screen turns on directly when releasing the buttons, the burning process has

failed. Please check the following:
• Whether the burning program is suitable for this device.
• Whether the program USB flash drive is provided by RMS Medical.
• Whether the USB flash drive is inserted before pressing the buttons.
• Whether the USB flash drive is functioning properly and can be recognized and read by a computer or other devices.
• After confirming the above, repeat the program burning steps.

Chapter 5: Prevention and Maintenance

The maintenance and servicing period for the portable oxygen concentrator is approximately once a year. Only professional personnel from the maintenance center, authorized individuals, or staff trained by RMS manufacturers are allowed to perform repairs or adjustments.
Warning:

- Before performing maintenance on the Portable Medical Oxygen Concentrator, always disconnect the main power supply to avoid personal injury and/or damage to the device.
- Do not expose the Portable Medical Oxygen Concentrator main unit or battery to any liquid environment.
- Do not clean disposable nasal cannula accessories.
- The nasal cannula is a disposable accessory used to connect with the patient's respiratory tract. Prolonged use may lead to bacterial growth, and there is a risk of cross-infection if used by different patients.

Caution: Portable Medical Oxygen Concentrators contain components that are susceptible to electrostatic discharge. Before performing any repairs and maintenance, make sure you are wearing anti-static facilities to avoid damage.

- Use and replace disposable nasal cannula according to the instructions.
- The molecular sieve is a consumable item. It should be replaced if the oxygen concentration decreases or after one year of use; otherwise, it may affect the oxygen concentration. Prolonged storage or operation in a humid environment may shorten the lifespan of the molecular sieve.
- The battery is recommended to be replaced after approximately 300 cycles or when the remaining capacity drops below 80%.

Chapter 6: Troubleshooting Chart

Problem	Possible Cause	Solution	Chapter referred
Display not sensitive	Screen water ingress/program upgrade error/device being squeezed	Firstly, check the display screen for damage and presence of water stains. Secondly, check for program errors and sequentially check for loose wiring. If the above issues cannot be resolved, replace the screen.	Refer Chapter 3:3.3.8 Replace the LCD screen panel
Black screen (screen not lit/flashing/blurred)	FPC cable loose/screen water ingress/screen damage	Check if the cable is loose, check if the touch screen is damaged, and if there are water stains. If the problem cannot be solved, the screen should be replaced.	
Alarm	Internal pressure high alarm	The device stops oxygen delivery within 10 seconds.	Refer Chapter 3: 3.3.9 Replace the valve seat
	Internal temperature too high alarm	The device stops oxygen delivery within 10 seconds. Check if the temperature requirements for use have been exceeded. Bring the device to a suitable temperature condition, wait for the device to cool down, and then start the unit and test. Check if the air inlet and outlet of the equipment are blocked. If any, please try to clear it.	Refer Chapter 3：3.3.5 Replace the main shell body 3.3.10 Replace the compressor compartment
	No respiratory alarm	●Check if the nasal	

	detected	oxygen tube is properly worn. ●Check if there are any discounts or other factors affecting ventilation in the nasal oxygen circuit	
	Low battery alarm/Empty battery alarm	Charging through direct current or alternating current	Refer Chapter 3: 3.3.3 Replace the battery
	Low system temperature alarm	●Check if the temperature requirements for use have been exceeded. ●Bring the device to the appropriate temperature conditions and then start the unit and test.	

Chapter 7: Cleaning

Required Tools:

- Towel
- Cleaner
- Soap

Cleaning:

Warning: To prevent electric shock, disconnect the power supply of the Portable Medical Oxygen Concentrator before cleaning.

Device Body

- Unit Shell (once a month): Take a damp towel and wring it out until it is not dripping. Apply a small amount of cleaner and wipe the external surface of the casing. Then use a dry towel to dry the casing.

Warning: Do not expose the Portable Medical Oxygen Concentrator to any liquid environment.

- Filter cotton

Check the filter cotton once a month. If there is excessive dust on the filter cotton, contact the equipment supplier to purchase a replacement.

- Carrying Bag

Wash the carrying bag and straps with mild soapy water. Do not fully immerse the bag in soapy water. After washing, air dry the bag. Do not machine wash or dry clean.

Chapter 8 Technical Specifications

<table>
<tr><td>Product name</td><td>Portable medical oxygen concentrator</td></tr>
<tr><td>Specification/Model</td><td>PO3/PO4/PO5/PO3SE/PO4SE/PO5SE</td></tr>
<tr><td>Product category</td><td>Class of the medical device Class II Type BF
Degree of water ingress protection IP21
Circulation mode Continuous operation</td></tr>
<tr><td>Oxygen concentration</td><td>93 ± 3%（V/V）</td></tr>
<tr><td>Gear levels</td><td>PO3/PO3SE with gears 1 ~ 3
PO4/PO4SEwith gears 1 ~ 4
PO5/PO5SE with gears 1 ~ 5</td></tr>
<tr><td>Pulse amount of oxygen at each gear</td><td>
<table>
<tr><th>Respiratory Rate</th><th>1st Gear</th><th>2nd Gear</th><th>3rd Gear</th><th>4th Gear</th><th>5th Gear</th></tr>
<tr><td>15 beats/min</td><td>11 ml</td><td>22 ml</td><td>33 ml</td><td>44 ml</td><td>55 ml</td></tr>
<tr><td>20 beats/min</td><td>11 ml</td><td>22 ml</td><td>33 ml</td><td>44 ml</td><td>50 ml</td></tr>
<tr><td>25 beats/min</td><td>8.8 ml</td><td>17.6 ml</td><td>26.4 ml</td><td>35.2 ml</td><td>40 ml</td></tr>
<tr><td>30 beats/min</td><td>7.3 ml</td><td>14.7 ml</td><td>22 ml</td><td>29.3 ml</td><td>33.3 ml</td></tr>
<tr><td>35 beats/min</td><td>6.3 ml</td><td>12.6 ml</td><td>18.9 ml</td><td>25.1 ml</td><td>28.6 ml</td></tr>
<tr><td>40 beats/min</td><td>5.5 ml</td><td>11 ml</td><td>16.5 ml</td><td>22 ml</td><td>25 ml</td></tr>
</table>
Under rated environmental conditions, the tolerance of oxygen pulse amount is ± 15%</td></tr>
<tr><td>Net weight</td><td>2.0 Kg</td></tr>
<tr><td>Power supply</td><td>Universal power supply
AC: Input 100-240V~, 50-60Hz, 1.5-0.75 A
DC: Output 19V, maximum current 5.26 A</td></tr>
<tr><td>Battery life (rechargeable lithium battery)</td><td>
<table>
<tr><th>gear</th><th>BAT-01（min）</th><th>BAT-02（min）</th></tr>
<tr><td>1</td><td>360</td><td>720</td></tr>
<tr><td>2</td><td>195</td><td>390</td></tr>
<tr><td>3</td><td>170</td><td>340</td></tr>
<tr><td>4</td><td>150</td><td>300</td></tr>
<tr><td>5</td><td>120</td><td>240</td></tr>
</table>
</td></tr>
<tr><td>Battery charging time (power off charging)</td><td>BAT-01:＞ 2.5 hours
BAT-02:＞5 hours</td></tr>
<tr><td>Warm-up time</td><td>2 minutes</td></tr>
<tr><td>Noise</td><td>5th gear ≤60 dBA</td></tr>
<tr><td>Battery life</td><td>Battery down to 80% or less after approximately 300 cycles</td></tr>
<tr><td>Alarm</td><td>High internal pressure alarm: Audible and visual</td></tr>
</table>

	High internal temperature alarm: Audible and visual Internal fault alarm: Audible and visual Low oxygen concentration alarm: Audible and visual No breath alarm detected: Audible and visual Alarm system failure alarm: Audible and visual Low battery alarm: Audible and visual Empty battery alarm: Audible and visual External power supply failure alarm: Low system temperature alarm: Audible and visual Periodic maintenance alarm: Audible and visual Alarm during device warm-up: Audible and visual
Environmental conditions	Normal operation: Temperature 5℃-40℃ Relative humidity 35%-93% (non-condensing) Storage and transportation conditions: Temperature-20℃-55℃ Relative humidity 10%-93% (non-condensing)

The above data is based on atmospheric pressure 101 KPa and a temperature of 21℃.

It can be normally used in terrestrial environment below 1828 m above sea level. It is not recommended to use it above 1828 m above sea level. This may result in a decrease in oxygen concentration. See the following table for specific changes.

Altitude (m)	Below 1828 Meters	2000	3000	4000
Measured oxygen concentration (%) at 1L/min	92	91	89	85

Chapter 9: Service and Repair

- In case of malfunction of the Portable Medical Oxygen Concentrator, please contact RMS Medical or the authorized dealer.
- To ensure long-term use of this Portable Medical Oxygen Concentrator, users must follow the guidelines for safety, cleanliness, and maintenance.
- For replacement parts, please use the dedicated accessories provided by RMS Medical.
- The expected lifespan of the Portable Medical Oxygen Concentrator is 5 years (under normal working conditions and regular maintenance).
- The molecular sieve is a consumable item. It should be replaced if the oxygen concentration decreases or after one year of use; otherwise, it may affect the oxygen concentration. Prolonged storage or operation in a humid environment may shorten the lifespan of the molecular sieve.
- Use and replace disposable nasal cannula according to the instructions.
- The battery is recommended to be replaced after approximately 300 cycles or when the remaining capacity drops below 80%.
- When the Portable Medical Oxygen Concentrator and its accessories exceed the service life, do not dispose of them casually. Please follow the relevant regulations

of the local government to properly handle the equipment and accessories, or contact RMS Medical and the authorized dealer for assistance.

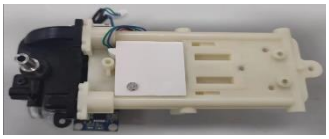
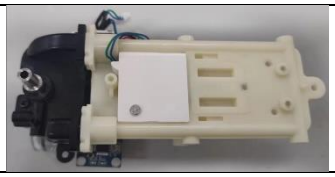
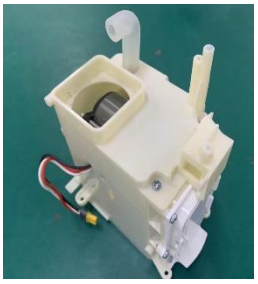
- When requesting warranty service, if necessary, you can provide product circuit diagrams and repairable component information to our recognized qualified technicians.
- The production date of the Portable Medical Oxygen Concentrator can be found on the label.
- Warranty instructions: Refer to the warranty regulations.

Chapter 10: Contact and Ordering Information

Registrant/Manufacturer: Shenyang RMS Medical Technology Co., Ltd.
Manufacturing Site: No. 10-4, Jinhui Street, Hunnan District, Shenyang City, Liaoning Province, China
Contact Number: 0086-024-31682686
After-sales Service Phone Number: 400-024-8010

Attachment：Replaceable components list

No	Code	Components	Replacement conditions	Image
1	411010020	molecular sieve	1.Decreased oxygen concentration or usage for over one year.	
2	411010027	BAT-01	1.Battery usage of approximately 300 cycles with a decrease in charge to 80% or below, suggesting replacement.	
3	411010028	BAT-02	1.Battery usage of approximately 300 cycles with a decrease in charge to 80% or below, suggesting replacement.	
4	411010029	power adapters (EU standard)	1. The adapter cannot charge the unit under normal use;; 2. User requirements.	

5	411010024	intake filter cotton	1. Alarm for decreased oxygen concentration or use for more than 500 hours; 2. Filter cotton is dirty.	
6	411010025	main shell side panels	1.The component is cracked or deformed and cannot be used.	
7	411010026	carrying bag	1.User requirements.	
8	411010030	valve seats（PO3 PO4 PO5)	1.Components damage, function fails.	
9	411010047	valve seats（PO3SE PO4SE PO5SE)	1.Components damage, function fails.	
10	411010031	compressor compartments	1.Components damage, function fails.	
11	411010032	LCD screen panels	1. Cracks appear on the screen; 2. Abnormal display and blurred screen.	
12	411010033	mainboard(PO5)	1.Components damage, function fails.	

13	411010034	mainboard(PO4)	1.Components damage, function fails.	
14	411010035	mainboard(PO3)	1.Components damage, function fails.	
15	411010036	mainboard(PO5SE)	1.Components damage, function fails.	
16	411010037	mainboard(PO4SE)	1.Components damage, function fails.	
17	411010038	mainboard(PO3SE)	1.Components damage, function fails.	
18	411010039	external power interface board	1.Components damage, function fails.	
19	411010040	fan	1.Components damage, function fails.	
20	411010041	speaker	1.Components damage, function fails.	
21	411010042	LCD screen FPC cable	1.Abnormal display and blurred screen.	

22	411010043	molecular sieve cover	1.The component is cracked or deformed and cannot be used.	
23	411010044	intake filter cover	1.The component is cracked or deformed and cannot be used.	
24	411010045	upper shell body	1. Surface scratches or poor appearance; 2. The button fails.	
25	411010046	main shell body	1. Surface scratches or poor appearance.