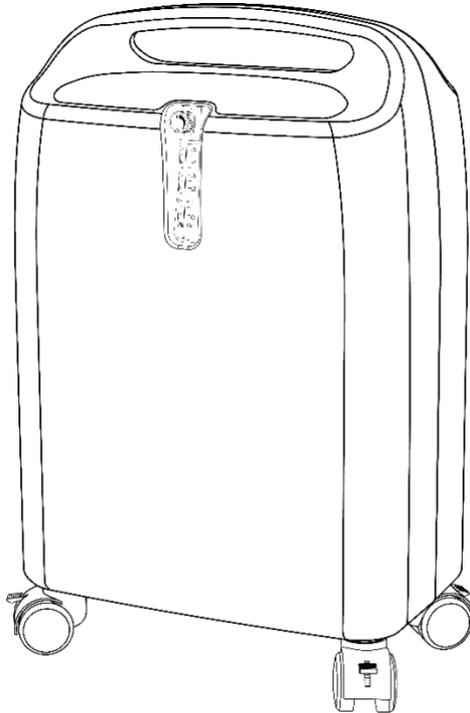


Spirit[®]

OXYGEN CONCENTRATOR
USER MANUAL



Model No.: SPIRIT - 8050

- ◆ Please read the user manual carefully before using device
- ◆ The company reserves the right to interpret the user manual
- ◆ Please refer to the actual product for its appearance
- ◆ In case of product technology or software upgrades are subject to without prior notice
- ◆ Please keep the manual after reading, to be able to refer to at a later time

PREFACE

Dear User:

Thank you for your support, we appreciate the opportunity to provide you with your oxygen concentrator.

This manual describes the notices, operation steps, basic functions, technical parameters, basic troubleshooting, return repair instructions and other content, so that you will be familiar with the products and operate the machine well.

To ensure the effective use of this machine, please read the instructions carefully on the use of this manual. Before you operate the machine, please make sure that you have read and understand the basic operation of this product. Please pay special attention "SAFETY INSTRUCTIONS".

Please refer to the "Product Return Step Requirements" and follow the required steps, if & when the product needs to be returned for maintenance.

Please note that some illustrations in this manual are not exactly the same as the machine you see, please refer to the actual product.

The humidification bottle, filters and other components mentioned in this manual should be selected in accordance with the requirements of product specifications.

If you have any problems regarding the usage of this device, please contact us, sales@totalismed.com

Version: V0

Software Version: V2.0

Compile Date: 3.2024

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MALFUNCTION REPAIR

 To avoid electric shock, please do not open the shell by yourself. Opening the casing should only be done by professionals authorized by the manufacturer.

The [Fault and Repair Comparison Table] attached below will help you analyze and correctly repair the faults of the oxygen concentrator. If the suggested steps do not help, use a spare oxygen concentrator, and notify the supplier of this oxygen concentrator for repair. Please do not attempt any other repairs.

Failures	Possible Causes	Maintenance Methods
The machine does not work. Power light is off when the switch is "on".	The power plug is not properly plugged into the power outlet.	Check whether the power cable is securely connected to the socket.
	No power at the socket.	Check the power cable or change the socket.
When the power switch turned on, machine operates after 2min, the Yellow Service light is illuminated. Audible alarm may sound.	Air intake sponge is blocked.	Check the air intake filtering foam. if it is dirty, wash it following the Item 3 of "CLEANING AND MAINTENANCE".
	Exhaust port is blocked.	Check the exhaust port of the rear shell to make sure the exhaust port is not blocked.
	The pipe of humidifier bottle is clogged or defective.	Disconnect the humidifier bottle from the device; If flow is restored, then the humidifier bottle needs to be cleaned or replaced.
Both the green normal o2 light and the yellow low o2 light are either on or off.	The oxygen concentration sensor is faulty.	Contact your supplier.
There is a lot of fog or water droplets inside of the oxygen connecting pipe/tubing.	The oxygen from humidifier bottle contains a certain amount of moisture; There will be a certain temperature difference in colder temperatures, which will cause the moisture in the oxygen to condense, so that liquid water drops in the connecting pipe.	Avoid direct blowing of cold wind on the oxygen connecting pipe/tubing; If the phenomenon of fog or water droplets in the pipe, please contact your Supplier.
	There is no ventilation around the machine, causing the device in a warmer working temperature.	Make sure there are no obstructions around the machine, the distance at least 12 inches.
	The water from humidifier bottle is hotter than the surrounding air.	Make sure the water put into humidifier bottle with room temperature water.
Yellow low-O2 light is on	Air intake filtering foam is blocked.	Check the air intake filter cotton, if it is dirty, clean it according to item 3 of "CLEANING AND MAINTENANCE".
	Exhaust port is blocked.	Check the exhaust port, make sure there's nothing restricting the airflow.
Yellow service light is on, accompanied by "beep" sound	Air intake filter is blocked.	Check if the air intake filter is blocked, if this is the issue, please clean the debris and check if the air intake filter is dirty. If the issue continues, please replace it as requirement from user manual.
	Exhaust port is blocked.	Check the exhaust port of the rear shell, make sure there's no blockage.
If the machine is still not working properly, please contact the product supplier or service point.		

SAFETY INSTRUCTIONS

⚠ DANGER (If the device is broken, then regular operation may cause serious injury or death.)

- ◆ In order to decrease burn, electric shock, fire or human injury risk. Avoid using the machine when bathing. If needed, please consult with your doctor. The manufacturer advises using the oxygen concentrator in another room 8 feet away, outside the bathroom.
 - It is suggested that the nasal oxygen should be less than 36 feet and cannot be folded.
 - Do not place or store in a place where it is easy to drop into water or other liquid on or around the device.
 - Oxygen causes rapid burning. Do not use machine within 5 feet of hot, sparking objects or sources of flames.
- ◆ Do not smoke while your oxygen concentrator is operating, or when you are near a person utilizing oxygen therapy.
- ◆ The inappropriate use of power line and a plug, may cause a fire or other dangerous electric shock, burn, do not use the machine with broken power line.
- ◆ Before cleaning the machine dust in the shell must pull out the power plug to prevent electric shock.
- ◆ When the machine is working, please do not open the machine shell and internal box to prevent physical or mechanical damage.

⚠ WARNING (The following items must be strictly enforced, otherwise it may cause serious harm).

- ◆ In order to avoid oxygen concentrator failure during power outage, the patients who require oxygen as ordered by their prescriber (such as those in urgent need of oxygen and severe patients), should have a backup oxygen source such as oxygen tanks.
- ◆ Patients should follow instructions by their prescriber.
- ◆ Oxygen therapy may be harmful under certain conditions, and it is advised to seek medical advice before using this device.
- ◆ This device should be used under the guidance of a prescriber.
- ◆ This product is not intended for life support.
- ◆ This product cannot be used to maintain life. It is recommended that patients who need oxygen therapy, should follow the guidance of your prescriber for flow rate level(s) and oxygen utilization time when using this machine.
- ◆ Patients with severe lung disease should consult their prescriber for preferred oxygen therapy method.
- ◆ If the patient has or shows discomfort or abnormal reaction when inhaling oxygen, please stop using this product immediately and contact the equipment supplier or prescriber. When a patient is using

the machine, do not repair and maintain the main machine and the humidifier bottle. The patient can clean and maintain the machine by themselves. For the effectiveness of treatment, the oxygen output setting of the machine should be evaluated periodically.

◆ Patients with more advanced or severe disease(s) will need additional medical coordination. Please consult a prescriber before use. If there's any adverse reactions, please inform the prescriber immediately.

◆ Humidifier bottles that meet the specification requirements of supporting products should be used (recommended model: intubated humidification bottle). Do not change the model of humidifier bottle at will. Otherwise, it may cause discomfort or inability to provide adequate therapy.

◆ The nasal cannula should not be placed under the coverlet or cushion when using the machine. It is not recommended to sit on the nasal cannula, by doing this you may prevent oxygen from passing through the connecting pipe normally, resulting in inability to inhale oxygen.

◆ When the product is turned on without oxygen inhalation, the oxygen will support combustion. While no one is inhaling oxygen, it is recommended to turn off the power switch and disconnect the plug. The power must be unplugged after use.

◆ When using this product, pay attention to the power cord, ensure it is not too long to obstruct walking. Please connect the power cord to the nearest power socket.

◆ This product cannot be equipped with non-specified humidification bottles or dosing accessories, as it may affect the performance of the device.

◆ When storing or using the machine, prevent infants and otherwise qualified individuals from touching, to avoid the damage of device by inappropriately utilizing the device.

◆ To ensure that the amount of oxygen required for treatment is obtained according to the patient's medical condition, the Spirit medical oxygen concentrator must be:

Used for one or more settings that prescribe individually, depending on the specific activity level of the patient.

For use in a combination of parts and accessories specified in accordance with the requirements of the manufacturer of the oxygen generator and after the settings have been determined for the patient.

◆ Only water-based washes or oils compatible with oxygen should be used before and during oxygen therapy. Do not use petroleum or oil-based washes or oils to avoid the risk of fire.

◆ Accessories, connectors, pipes or other accessories of the oxygen concentrator must not be lubricated to avoid the risk of fire.

◆ Only spare parts recommended by the manufacturer can be used to ensure proper function and avoid the risk of fire.

◆ At altitudes above 2000 meters or temperatures below 5 degrees, or above 40 degrees, or relative humidity over 80% will affect the flow and oxygen purity, and further affect the quality of treatment.

◆ Oxygen can catch fire and spread fire, when the oxygen concentrator is running without being used, the nasal cannula or mask cannot be placed on the bed cover or the chair cushion, because the oxygen is easy to make these materials ignite, the oxygen concentrator is not used, should be turned off to avoid oxygen enrichment.

◆ If patients feel uncomfortable or have a medical emergency during oxygen therapy, seek medical help immediately to avoid harm.

- ◆ When the elderly, children, or other patients are unable to express discomfort, additional monitoring measures or distributed alarm systems can be used to communicate discomfort and medical emergencies to responsible caregivers to avoid harm.
- ◆ Smoking during oxygen therapy is dangerous and may cause in facial burns or death. Smoking is not allowed while in the same room with the oxygen concentrator or any other accessory that contains oxygen. If you plan to smoke, turn off the oxygen concentrator, remove the nasal cannula, and leave the nasal cannula or mask or the place where the oxygen concentrator is placed. If you cannot leave the premises, you must wait 10 minutes after turning off the oxygen concentrator before smoking.
- ◆ Open flames during oxygen therapy are dangerous and can result in fire or death. No open flame is allowed within 6 feet around the oxygen generator and any oxygen storage place.

 **CAUTIONS (Notice to the following content to avoid breaking the machine)**

- ◇ Do not open the shell and internal case for maintenance. If there's quality problems or abnormal malfunction, do not disassemble to repair, should contact the supplier or manufacturer.
- ◇ The oxygen concentrator should be placed in an environment free of pollution and smoke. Do not use this product under strong magnetic field environment.
- ◇ The air entrance of the machine should be located in well-ventilated environment, the air source inlet should be in the place with the least number of pollutants (Contaminants refer to/include: combustion exhaust, anesthesia, other exhaust systems, vents and vacuum exhaust, etc.).
- ◇ Please connect the separated (wall mounted) AC power while using this product. Do not connect to a power strip. Do not use the additional power socket with other electrical appliances at the same time.
- ◇ This machine is strictly prohibited from touching oil and grease. If other pipes, valves, and joints must be connected, such connections should be cleaned before installation to ensure that they are clean and free of oil (grease). During the connection process, pay attention to keep all parts clean, and the whole machine after connection is strictly prohibited from touching any flammable oily liquid.
- ◇ To ensure that the bottom of the exhaust flows efficiently while using the machine. The back of machine should not touch the wall, the distance in between at least 12 inches, otherwise it will cause damage to the machine to overheat.
- ◇ Do not use other lubricants except those recommended by the manufacturer.
- ◇ This machine cannot frequently open and close. The interval time to start no less than 5 minutes after shutting down. So as not to affect the service life of the compressor, the manufacturers recommend each operation time is better than 30 minutes.
- ◇ The machine is only used as a medical oxygen supply, the oxygen purity can up to 90% in the output of the gas at rated flow.

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

- ◇ The purity will be up to 90% after booting for 10min.
- ◇ 10 minutes after the oxygen concentrator is turned on, if there is a power failure, the oxygen concentrator should have an auditory prompt.
- ◇ If the power supply voltage is unstable and exceeds the range of 110V~±11V, please install a voltage stabilizer before using it.

◇ Among the parts of this oxygen concentrator, the humidifier bottle needs to be cleaned every day, and the intake filter sponge needs to be cleaned every 100 hours between uses. The air intake filter is recommended to be replaced after the machine has been used for 1000 hours (every 1000 hours of accumulated time, the display will display the "Err10" prompt code once, each time lasting 60 seconds), and the air intake filter cannot be reused. If the product is used in a dusty or fume environment, please reduce the cleaning or replacement intervals for the above components. To ensure the effect of use, it is recommended to replace the above parts in advance.

◇ The water used in the humidifier bottle can be distilled water or cold boiled water. Do not pour untreated tap water directly. It is recommended to change the water in the humidification bottle every day. When replacing, please clean it according to item 2 of the "CLEANING AND MAINTENANCE INSTRUCTIONS". If you don't use this product, please pour out all the water and dry the humidifier bottle.

◇ Choose the humidifier bottle required by the supporting product specifications. If you change to another type of humidifier bottle, please consult a professional physician or the product supplier first.

◇ When the humidifier bottle and supporting parts are used up, please do not throw them away at will, please send them to the nearby medical waste disposal institution for disposal.

◇ Please choose a humidifier bottle that is suitable for this machine and connect and fix it on the device as required. Please do not use it in the disassembled state (refer to the connection instruction diagram of the humidifier bottle).

◇ When using the humidifier bottle only add water as the highest and lowest water level marked on the body.

◇ Service life of main components: The molecular sieve replacement cycle is 15,000 hours of accumulative use of the machine.

◇ When the machine is scrapped, please contact the local supplier or manufacturer.

◇ Please refer to the "RELATED USE SYMBLE DESCRIPTION" for the symbol instructions in the machine, packaging, and manual.

◇ When receiving the product and unpacking the equipment for use, please refer to the "CHECK PACKAGE AND PACKING LIST" to check the accessories delivered with the product and operate according to the " PRODUCT USE OPERATION STEPS".

STATEMENTS

◆ Oxygen output settings should be performed individually for each patient, depending on the configuration of the device and accessories.

◆ Correct prevention and positioning of the patient interface is the key to therapeutic effectiveness.

When in use, the machine can be turned on to check the running state. If there is gas leakage or other faults, there will be an alarm. Please refer to the fault analysis table in P1 or contact the supplier to solve the problem.

Check whether the alarm signal is normal, block the oxygen outlet port, or unplug the power when the machine is running, the machine will generate an alarm signal, if not, please contact your supplier.

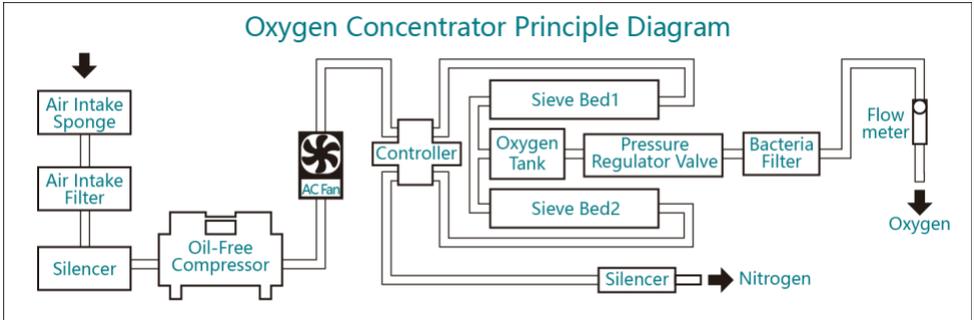
In the normal state of the machine or the single fault state, the part that may be contaminated by body fluids or exhalation when the machine is used is the nasal cannula and humidifier bottle.

For basic performance and basic safety checks, please refer to the fault analysis table in P1, or contact the supplier. The recommended detection frequency is 1 time/year.

Do not disassemble the machine without permission, if it occurs, please contact the dealer to ensure the correct connection and fixing. Cotton wool, dust, etc. may shorten the life of the machine.

PRODUCT FEATURES

1 INTRODUCTION OF OXYGEN CONCENTRATOR



2 STRUCTURE AND COMPOSITION

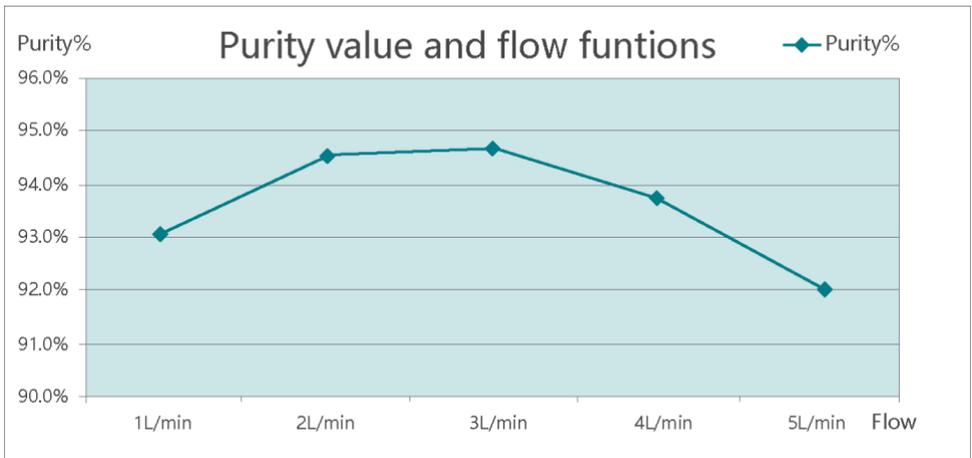
Spirit is composed of a compressor, sieve bed, flowmeter etc. parts.

3 SCOPE OF APPLICATION

Using air as raw material, the molecular sieve pressure swing adsorption process is used to produce oxygen with an oxygen concentration range of 90%~96% (V/V) (referred to as 93% oxygen).

4 OXYGEN PURITY VALUE AND FLOW FUNCTION CHART OF OXYGEN CONCENTRATOR

When the Spirit medical oxygen concentrator outlet nominal pressure is zero, oxygen concentration value and flow function chart (see Figure 1)



The relationship between oxygen purity and flow rate (Figure 1)

5 SPECIFICATION

Model No.	Spirit - 8050
Power	110V~, 60Hz
Consumption	385VA
Flow range when outlet nominal pressure is 0 and 7kpa	0L/min ~ 5L/min
Oxygen purity at 0 outlet nominal pressure (within 10 minutes of initial start-up, the specified purity level is reached)	Flow rate at 1L/min ~ 5L/min, oxygen purity $\geq 90\%$
Maximum flow rate	5L/min
When the maximum flow rate is applied, 7kpa back pressure is applied and the flow rate change scope	$\leq 0.5L/min$
When the maximum flow rate is applied, oxygen purity (within 10 minutes of initial start-up, the specified purity level is reached)	$\geq 90\%$ (V/V)
Flow regulation range	Continuously adjustable within 0L/min ~ 5L/min
Net weight	14.5kg
Noise	≤ 60 dB(A)
Dimension	380mm(L) \times 228mm(W) \times 592mm(H)
Outlet Pressure	30kPa~80kPa
Yellow low-oxygen indicator light	When $72\% (\pm 3\%) \leq \text{purity} \leq 82\% (\pm 3\%)$, the yellow indicate light will be on, contact with the supplier. The user can continue to use and ensure that there is back up oxygen.
Yellow service indicate light	When oxygen purity $\leq 72\% (\pm 3\%)$, yellow indicate light will be on with a continuous beep, and display screen show Lo-o2 error code. The machine will be stopped within one minute. Please turn off device at once and use the backup oxygen, contact with the supplier.

- 1 Compressor safety valve release pressure: 250kPa \pm 50 kPa.
- 2 The Oxygen Concentration Status Indicator (OCSI) indicates that the oxygen concentration in the finished gas is abnormal, and the tolerance of the oxygen concentration is $\pm 3\%$.
- 3 Altitude between 0-2000 meters, Purity $\geq 90\%$, when Altitude between 2001-4000 meters, Purity $\leq 90\%$.
- 4 Oxygen outlet temperature: $\leq 46^{\circ}\text{C}$.
- 5 When the flow rate is 3L/min, the sound power is 65dB; When the flow rate is 5L/min, the sound power is 65dB; Alarm sound pressure level < 65dB.

6 CONTRAINDICATIONS

Patients with oxygen poisoning and oxygen allergy are forbidden.

7 SUPPLEMENTARY INSTRUCTION

Classification of protection against electric shock : Class II.

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

Classified according to the degree of protection of the liquid into the machine : IP21;

Classified according to the degree of safety when used in the case of flammable anesthetic gas mixed with air or flammable anesthetic gas mixed with oxygen or nitrous oxide: non-AP/APG type.

Classified by operating mode: continuous operation.

No signal output and signal input part.

Working voltage: 110V~, 60Hz.

Duty system: This machine is a continuous operation system.

Oxygen concentrators without applied parts protected against defibrillation discharge effects.

Oxygen concentrators are non-permanent installations.

Serial number	Name	Cable length (m)	Whether to shield	Remark
1	power cable	2	No	/

Basic Performance

2 After the oxygen concentrator is turned on for 10 minutes, the oxygen purity should be $\geq 90\%$ under the set flow condition.

Alarm function of corresponding state (low oxygen, power failure, cycle failure, low pressure fault, high pressure fault, high temperature fault, blocking fault, sound prompt and indicator light prompt).

INSTALLATION AND USE

1. RELATED USE SYMBLE DESCRIPTION

	Power OFF (Total power supply)		Power ON (Total power supply)	110V~	AC 110V
	No Smoking		No open flames		Refer User Manual
	Safety Instruction		Stacking layer limit		Avoid Rain
	Caution		Date of manufacture		Upwards
	Class II Equipment		Cannot be discarded after use		Fragile
	Type BF Application		Recycling		Serise Number
	Temperature Limit		Humidity limit		Pressure limit
IP21	Dust class: Prevent particles with diameter of 12.5mm from entering. Waterproof rating: prevent water from falling vertically.				

2. OPERATION STEPS

1 When the product is in use, the back is at least 12 inches away from the wall. The foam board and other things at the bottom must be removed. Make sure that no debris is piled up at the bottom to maintain the air circulation at the bottom and ensure the normal heat dissipation of the machine.

2 Connect the humidifier bottle and operate it as following instruction.

Put cold boiled water or distilled water in the humidifier bottle, the water level must be according to the instructions, not more or less than the maximum/minimum water level indicator line of the bottle, and the bottle cap should be tightened tightly (Refer to Figure 2).

Use a rubber band to fix the humidification bottle on the back shell of the oxygen generator, connect one end of the humidification bottle connecting pipe to the humidification bottle air inlet, and the other end to the oxygen output port of the oxygen generator (refer to Figure 3).

 **Notice:** The best install position of the humidifier bottle in the oxygen concentrator is shown as Figure 3

3 Remove the AC power cord from the retaining strip, confirm the switch is in the off position. Insert the plug into the indoor power outlet.

4 We have configured a monitoring device to output oxygen concentration. Each time the machine is turned on, the power indicator light and normal indicator light on the display will light up. After a few minutes, if the output oxygen purity does not meet the standard requirements, the normal indicator light will be turned off, and the yellow low oxygen indicator light will light up.

5 According to the output flow, turn anticlockwise to adjust the increase flow rate of flow control knob and turn clockwise to turn down the flow.

6 Put the nasal cannula intake air connector to the air outlet of the bottle, and then put the nasal cannula to the user's ears, insert the nasal plug in the oxygen inhalation tube and to the nostrils of the oxygen inhalation person to make the oxygen inhalation. (It is recommended to use an oxygen inhalation tube with a medical device registration certificate. Flow range $\leq 10\text{L}/\text{min}$) Refer to Figure 4 for instructions:

7 After 10 minutes running, if the alarm is sounded, please check whether the power supply connection is loose or not, or whether the external power supply has been interrupted.

8 Shutdown: turn off the power switch after use, unplug the AC power cord, cut off the network power, and tidy up the AC power cord.

3. COMPONENTS NAME AND FUNTIONS DESCRIPTION

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

1 Power switch: O = disconnect (power supply) , I = connect (power supply)

2 Flowmeter

a Flow control valve: The switch knob of the oxygen flow meter, adjusts and controls the output oxygen flow.

b The position of the flow knot in the oxygen flow meter indicates the size of the flow (L/min)

 **Notice:** Test the oxygen flow meter and make sure the knot is in the regular tick mark. (SPIRIT

max flow 5L/ min, do not let the knot over 5L/ min;)

The flow rate in the oxygen prescription is very important, do not increase or decrease the reference flow rate of oxygen provided by your doctor. If the regulator valve of the flow meter is turned clockwise, the flow will decrease (eventually shutting off the flow of oxygen). If turned anticlockwise, the flow will increase.

3 Universal casters (four units): the machine can move flexibly.

4 Intake filter sponge: prevent dirt, dust, and fibers from entering the machine (only one piece can be used for the machine).

5 Air intake filter cover: remove the intake filter cover to replace the intake filter or remove the intake filter cotton for cleaning.

6 Product nameplate/factory number label: product performance label, labeling the product factory number.

7 Winder: (part of back housing) for power cord.

8 Straight out AC power cable (with plug).

9 Oxygen outlet: Connect to the humidified bottle by connecting tube or nasal oxygen tube.

10 Humidification bottle connection tube.

11 Humidifier bottle.

12 Heat sink: On the bottom of the machine, do not block during machine operation.

13 Alarm voice button: "Control" alarm voice prompt off/alarm voice prompt on (power failure time does not exceed 30 seconds, automatically restore the settings before power failure; If more than 13 minutes, the alarm voice prompt is enabled by default).

14 Alarm voice indicator light.

* The following parts description refers to the instructions in Figure 7 *

5 Display

a. Green power indicator light—Start operating.

b. Green indicator light—Oxygen output normally.

c. Yellow indicator light—Low oxygen purity.

d. Yellow service indicator light - please contact for maintenance service.

e. Digital display

◆ Oxygen concentration display: two digits below the oxygen concentration indicator (Example: Two digits is "93" means the oxygen concentration is "93%"), indicating the current oxygen concentration at the oxygen outlet.

◆ Cumulative timing: Digital show,5 seconds before starting up, it will display the cumulative running time of the machine; 5 seconds after starting up, it will display the cumulative time of the current operation of the machine. When the current running time reaches 600 minutes, the current cumulative time will be displayed in hours.

◆ Fault code description

◇ Show Lo-o₂ — Cycle fault alarm or purity $\leq 72\%$ ($\pm 3\%$).

◇ Show Lo-P — Low pressure alarm(Pressure $< 40\text{kPa}$, or the compressor is overheated and shut down);

◇Show Lo-Po2 — Cycle fault and low pressure alarm (Pressure <40kPa and purity≤72%(±3%).

◇Show Hi-P — High pressure alarm (Pressure >250kPa).

◇Show Hi-Po2 — Cycle fault and high pressure alarm (Pressure >250kPa and purity <72%).

◇Show Hi-t — High temperature alarm (MOS over heated).

◇Show E08— Humidifier bottle or oxygen pipe blockage prompt (The oxygen outlet port is blocked or the flow rate is less than 0.3L/min, and the duration is 15 seconds, the E08 prompt will be displayed.

Note: The machine have the following self-test functions: Low oxygen purity, Cycle fault or oxygen purity≤72%(±3%) alarm, Low pressure alarm(or the compressor is overheated and shut down),Cycle fault and low pressure alarm, High pressure alarm, Cycle fault and high pressure alarm, Low oxygen flow alarm.

When working normally, the fault monitoring function will monitor the working state of oxygen concentrator. When $72\%(\pm 3\%) \leq \text{oxygen purity} \leq 82\%(\pm 3\%)$, yellow low-oxygen indicator light shining; If oxygen purity $\leq 72\%(\pm 3\%)$, yellow alarm light shining with continuous alarm sound, display screen show Lo-o2, the machine will stop within 1min, please turn off the machine immediately; When the oxygen concentrator has a low pressure fault (or the compressor is overheated and shut down), the yellow service indicator light is on, accompanied by a continuous prompt sound, and the display shows Lo-P. After one minute, the whole machine will stop running, please shut down immediately; When the oxygen concentrator has cycle fault and low-pressure fault at the same time, the yellow service indicator light is on, accompanied by a continuous prompt sound, and the display shows Lo-Po2. After one minute, the whole machine will stop running, please shut down immediately; When the oxygen concentrator has a high pressure fault, the yellow service indicator light is on, accompanied by a continuous prompt sound, and the display screen shows Hi-P, and the whole machine stops running after one minute, please shut down immediately; When the oxygen concentrator has a cycle failure and a high pressure failure at the same time, the yellow service indicator light is on, accompanied by a continuous prompt sound, and the display shows Hi-Po2. After one minute, the whole machine will stop running, please shut down immediately; When the oxygen flow rate of the oxygen output port is less, and the humidification bottle or oxygen pipe is blocked, there will be a continuous prompt sound and the display will display E08.

Status	Screen display light	Alarm	Alarm status	Machine Status
$72\%(\pm 3\%) \leq O_2 \leq 82\%(\pm 3\%)$	yellow low oxygen indicator light	Yes	Low priority	Keep running
Power outage	yellow low oxygen indicator light	Yes	Low priority	Stop running

Note: All the alarm state of the oxygen making machine belongs to the low priority. The alarm system has been set up in the factory, the user cannot change the alarm system settings.

PRECAUTIONS

1 Transport and storage conditions, transport and storage environment between uses after removal of packaging.

1 Range of Environmental Temperature: $-20^{\circ}\text{C} \sim +55^{\circ}\text{C}$.

2 Range of Relative Humidity: $\leq 93\%$; without condensation phenomenon.

3 Range of atmospheric Pressure: 50 kPa~106 kPa.

 **Notice:** When the storage temperature is lower than 41 ° F, the device should be placed in the normal working temperature environment for more than four hours before use.

2 PRODUCT OPERATION ENVIRONMENT (Including oxygen purity status indicator)

-  Environmental Temperature: 41 F~104 F
-  Relative Humidity: ≤ 80%.
-  Atmospheric Pressure: 86 kPa~106 kPa.
-  No corrosive gas and strong magnetic field in the surrounding environment.

3 EXPIRY DATE/PRODUCTION DATE

- 1 Oxygen concentrator life span: Five years.
- 2 Oxygen concentrator production date: Refer to the specification label.

4 CLEANING AND MAINTENANCE INSTRUCTIONS

- a. Clean the shell of the whole machine: 1-2 times a month, please wipe the outside of the machine with a clean and soft wet towel dipped in a little detergent when the power is cut off, and then dry it with a dry towel.
- b. Clean the humidification bottle: can use detergent and hot water to clean the humidifier bottle separately, or use a solution mixed with white vinegar and water at a ratio of 1:3 as a fungicide, and soak the separated humidifier bottle in this solution for 30 minutes, then dry the humidification bottle.
- c. Clean the air intake filter cotton: remove the filter cotton inside the air intake filter cover, clean it with detergent, rinse it thoroughly with clean water, remove excess water, dry it naturally in the air, and put it back into the original continue to use. If the filter cotton is not completely dry, please do not put it back into the machine for use. Cleaning the intake filter cotton is an important part of the daily maintenance of the oxygen concentrator. It is recommended at least twice a month.

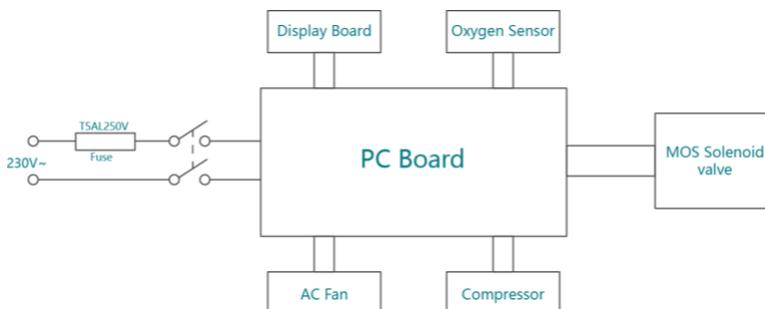
5 CHECK PACKAGE AND PACKING LIST

When you receive the product, please open the package carefully. This product is equipped with upper and lower foam protection covers. If the protective cover is damaged, please immediately check whether the product is damaged or not. Then, check if there are any missing parts or accessories in the inspection of the packing list of the products.

Packing List			
No.	Description	Quantity	Unit
1	Oxygen Concentrator	1	Piece
2	Humidifier bottle tube	1	Piece
2	Humidifier Bottle	1	Piece
3	Nasal cannula	1	Piece
4	Air intake sponge	1	Piece
5	User Manual(With guarantee card, COC)	1	Piece

6 ELECTRICITY SCHEMATIC DIAGRAM

 **Notice:** If there is a need for maintenance, the circuit diagram and necessary information for maintenance can be provided. Contact the manufacturer If you have any questions about circuit servicing. Fuse type: T5AL250V, Size: 8.35mm x 4.3mm x 7.7 mm.



7 ENVIRONMENT PROTECTION

1 Disposal of waste and residue.

Please do not dispose of the oxygen tube, the humidification bottle, and the accessories parts when you are finished using them. It can be sent to a nearby medical waste disposal facility for disposal.

2 Please contact your local supplier or manufacturer when this machine is scrapped.

3 The disposal of waste and residues should be in line with the corresponding national legal provisions.

Hazardous substances in products

Description	Harmful substances					
	Plumbum (Pb)	Hydrargyrum (Hg)	Cadmium (Cd)	Hexavalent chromium (Cr(VI))	Polybrominated biphenyls(PBB)	Polybrominated Diphenyl ethers(PBDE)
Plastic housing	○	○	○	○	○	○
Internal pipes	○	○	○	○	○	○
PCB (including	×	○	○	○	○	○

display)						
Power cord	○	○	○	○	○	○
Zeolite	○	○	○	○	○	○
Air intake filter	○	○	○	○	○	○
Bacterial filter	○	○	○	○	○	○
Package raw	○	○	○	○	○	○

This form is prepared in accordance with the provisions of SJ/T 11364.

○: It means that the content of the hazardous substance in all homogeneous materials of the component is below the limit requirement specified in GB/T 26572.

✕: Indicates that the content of the hazardous substance in at least one homogeneous material of the part exceeds the limit requirement specified in GB/T 26572.

The symbol indicates that this product contains certain harmful substances, and it can be used with confidence within the 10-year environmental protection use period. After the environmental protection use period is exceeded, it should enter the recycling system.

8 ELECTRONIC COMPONENTS

No.	Description	Qty	Unit
1	PC Board	1	Piece
2	Display Board	1	Piece
3	Oxygen sensor	1	Piece
4	MOS Solenoid Valve	1	Piece
5	Compressor	1	Piece
6	AC Fan	1	Piece
7	Power Switch	1	Piece

ELECTROMAGNETIC COMPATIBILITY

Attention

- ◆ Spirit small medical oxygen concentrators comply with YY 0505-2012 standard electromagnetic compatibility related requirements.
- ◆ Users should install and use according to the Electromagnetic Compatibility Information provided in the accompanying documentation.
- ◆ Performance of Spirit small medical oxygen concentrator may be affected by portable and mobile RF communication devices. Avoid strong electromagnetic interference during use, such as near cell phones, microwave ovens, etc.

- ◆ The guidelines and manufacturer's declaration are in the appendix.

WARNING

- ◆ Spirit should not be used close to or stacked with other equipment. If it must be used close or stacked, it should be observed to verify that it works properly in the configuration in which it is used.
- ◆ Apart from cables offered by the manufacturer of the Spirit oxygen concentrator as spare parts for internal components, the use of accessories and cables other than those specified may result in increased emission or reduced immunity of the oxygen generator.
- ◆ For accessories, transducers or cables that are not specified, use with the SPIRIT oxygen concentrator may result in reduced emission or immunity of the oxygen concentrator.

ANNEX

Guidelines and Manufacturer's Statement - Electromagnetic Emission		
SPIRIT oxygen concentrators are expected to be used in the following specified electromagnetic environment and the purchaser or user of SPIRIT small medical oxygen concentrators shall ensure that it is used in such electromagnetic environment.		
Launch test	Conformity	Electromagnetic Environment-Guide
GB4824 RF emission	1 group	SPIRIT oxygen concentrators use RF energy only for their internal functions. Therefore, its RF emission is very low and the possibility of interference to nearby electronic devices is minimal.
GB4824 RF emission	Class B	SPIRIT oxygen concentrators are suitable for use in all facilities, including domestic facilities and direct connection to the domestic residential public low voltage supply network.
GB 17625.1 Harmonic emission	Class A	
GB/T 17625.2 Voltage fluctuation /flicker emission	Conformity	

Guidelines and Manufacturer's Statement - Electromagnetic Immunity

SPIRIT small medical oxygen concentrators are intended use in the electromagnetic environment specified below and the purchaser or user of SPIRIT small medical oxygen concentrators shall that it is used in such electromagnetic environment.

Immunity test	GB9706 test electrical level	Conformity Leveling	Electromagnetic Environment-Guide
Radio Frequency Conduction GB/T 17626.6	3V (Valid values) 150kHz~80MHz	3 V (Valid values)	Portable and mobile RF communication equipment shall be used closer to any part of the SPIRIT Oxygen Concentrator than the recommended isolation distance. This distance is calculated by the formula corresponding to the frequency of the transmitter. Recommended isolation distance $d = 1.2 \sqrt{P}$
Radio Frequency Radiation GB/T 17626.3	3 V/m 80 MHz ~ 2.5 GHz	3 V/m	$d = 1.2 \sqrt{P} \quad 80 \text{ MHz} \sim 800 \text{ MHz}$ $d = 2.3 \sqrt{P} \quad 800 \text{ MHz} \sim 2.5 \text{ GHz}$ Formula: P - according to the transmitter manufacturer provide the maximum rated output power of the transmitter in watts (W). d-Recommended isolation distance in meters (m) b. The field strength of a fixed RF transmitter is determined by a site survey of the electromagnetic field in the house and should be less than the compliance level at each frequency ranged. Interference may occur in the vicinity of the equipment with the following symbols. 

Note 1: The higher band formula will be used at 80MHz and 800MHz frequencies.

Note 2: These guidelines may not be appropriate in all cases. Electromagnetic propagation is influenced by absorption and reflection from buildings, objects and the human body.

a Strong fixed transmitter field, such as: base stations for wireless (cellular/cordless) telephony and mobile radio, amateur radio, AM (Amplitude Modulation) and FM (Frequency Modulation) radio broadcasts, television broadcasts, etc. None of its field strength can be accurately predicted in theory. In order to

WARRANTY

1. Warranty

The warranty period is three years or 20,000 hours from the date of purchase of the product (with the first expiration as the time node). If the product fails to operate normally due to non-human actions, the manufacturer shall repair or replace the parts for the user free of charge.

1 During the warranty period, where the performance failure caused by the quality problem of the purchased product is under normal use and meets the warranty conditions, please send the completed warranty card back to the company together with the machine for repair or bring the completed warranty card and the purchase ticket to the point of sale of the purchased product for free warranty. Or according to the fuselage coded factory date of the 30th to fill in the date of purchase.

2 Machines that fail due to unauthorized modification or installation of other functions will not be accepted.

3 Keep the warranty card and purchase ticket as the warranty certificate of the product, please declare the customs properly, and do not make up for the loss.

The following conditions are not free of charge:

 The product exceeds the warranty period.

 No warranty certificate.

 Failure caused by failure to follow operation instructions.

 The damage was not caused by the company's maintenance personnel.

 A failure, scratch, or breakage caused by move.

 The failure caused by the user's own disassembly, repair, decomposition, and assembly of the product.

 Normal damage of wearing parts and consumable parts.

 Failure and damage caused by force majeure (e.g. fire, flood, earthquake, etc.).

2. Product return steps

Dear customer:

Hello! Thank you very much for your trust and support of the company, we will strive to provide you with satisfactory after-sales service. We sincerely apologize for the abnormal use of your product and promise to solve it for you as soon as possible. Please kindly follow the following steps to return your product to our company for repair or return.

1 Fill out the product warranty card at the end of this manual and return it with the product.

Please fill in the reason why the product should be returned to the factory for repair. If the machine received by our after-sales staff does not attach any fault instructions, it will take time to re-test and confirm the return state of the machine, which will increase the time for you to solve the problem.

2 The accompanying accessories of the product are described as follows:

For the maintenance of the machine, accessories such as oxygen tubes, humidification cups, etc. are disposable consumables and do not need to be sent back at the same time as the machine.

For the returned machine, it is necessary to ensure that the sealed package of the attached accessories is complete and does not affect the secondary sales, otherwise the price of such accessories may be deducted when returning the machine.

If you want to purchase additional product accessories, you can also fill in the warranty card (return copy).

3 Please remove the humidification cup of the product and keep water out of the bottle.

If the product is humidified and the water in the bottle is not cleaned, the water will return to the machine, resulting in secondary damage to the product.

Since such damage occurs when it is not caused by the operation guidelines, it is not a quality problem of our products, and should be implemented in accordance with the paid terms that you need to pay for maintenance.

4 Please use the corresponding packing cases of our products when returning to the factory.

The packaging of our products is reasonably designed according to the product arrangement to ensure the safety of the transportation process. If you use other packaging, there may be damage to the product during transportation. Such damage is not a quality problem of our products, and should be carried out in accordance with the paid warranty terms that you need to pay for maintenance; In order to ensure the safety of the repaired machine when it is sent back again, our company will replace the original packaging, and the cost will be listed in the list you need to pay.

5 If necessary, it is recommended that the product be disinfected before being issued.

Because some users suffer from infectious diseases, such as your machine is operated and used by such patients, please wipe the shell with alcohol before packaging the machine, or do other professional disinfection under the guidance of medical staff, in order to avoid the Courier and other relevant personnel contact the machine and infection.

Please refer to our suggestions after reading the product manual to return the machine operation, if there is something not clear, please call us! Thank you again for your support!



GUARANTEE CARD (USER PAGE)

Name: _____ Tel: _____

Address: _____

Product: Spirit-Oxygen concentrator

Model No.: 8050 Serial No:

Purchase Date: _____

Distributor: _____

Address: _____

Tel: _____ Zip Code: _____



----- Please cut this page along the dotted line and return with product -----



GUARANTEE CARD (RETURN PAGE)

Name: _____ Tel: _____

Address: _____

Product: Spirit-Oxygen concentrator

Model No.: 8050 Serial No:

Purchase Date: _____

Distributor Stamp: _____

Failure description: _____

Tel: _____ Zip Code: _____

(Fill out this page at the time of purchase, cut it out and send it back to the dealer as a warranty certificate



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