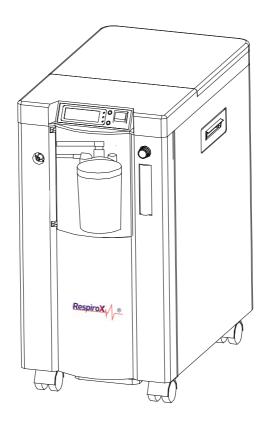




# Oxygen Concentrator SZ-T

User's manual



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

September 2019

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WARNING: For avoiding power outage or oxygen concentrator operating failure, exigent oxygen user and serious patient must equip with reserve oxygen supply (for example: oxygen cylinder, oxygen bag). This device is to be used as an oxygen supplement and is not considered life supporting or life sustaining.

#### I. BEFORE INSTALLATION

- The concentrator should always be kept in the upright to prevent cabinet damage while being transported.
- Electrical source, power voltage is instable that beyond normal power voltage range. Please add manostat.
- Use eligible, safe power set and junction box.
- Curbstone people do not open oxygen concentrator's cabinet.

### **II. PUT POSITION**

- You may select a room in your house where using your oxygen concentrator would be most convenient. Your concentrator can be easily rolled from room to room on its casters.
- Be certain to place the unit so all sides are at least 10cm (4inches) away from walls, draperies, furniture, or other obstruction. Do not place the unit in a confined area.
- Oxygen concentrator must avoid heat source, fire source, wetness, exorbitant or over-low extraventricular condition.
- Sundries and vessel do not be placed on top of the concentrator.
- NEVER block the air openings of the unit or place it on a soft surface, such as a bed or couch, where the air opening may be

blocked. Keep the openings free from lint, hair and the like.

#### III. USING

- The use of oxygen therapy requires that special care be taken to reduce the risk of fire. Users MUST NOT SMOKE while using this device. Keep all matches, lighted cigarettes or other sources of ignition out of the room in which this product is located. NO SMOKING signs should be prominently displayed. Textiles and other materials that normally would not burn are easily ignited and burn with great intensity in oxygen enriched air. Failure to observe this warning can result in severe fire, property damage and cause physical injury or DEATH.
- For optimum performance, do not open or turn off the concentrator frequently, reset after 3 ~ 5 minutes. Shorter periods of operation may reduce maximum product life.
- A spontaneous and violent ignition may occur if oil, grease or greasy substances come in contact with oxygen under pressure. These substances MUST be kept away from the oxygen concentrator, tubing and connections, and all other oxygen equipment. DO NOT use any lubricants unless recommended by manufacturer.

### IV. MAINTENANCE

The oxygen concentrator was specifically designed to minimize routine preventive maintenance at intervals of once per year. Only professionals of the healthcare field or persons fully conversant with

this process such as authorized or factory trained personnel should perform preventive maintenance or performance adjustments on the oxygen concentrator.

### V. RADIO FREQUENCY INTERFERENCE

 Most electronic equipment is influenced by Radio Frequency Interference (RFI). CAUTION should be exercised with regard to the use of portable communications equipment in the area around such equipment.

# VI. TO REDUCE THE RISK OF BURNS, ELECTROCUTION, FIRE OR INJURY TO PERSONS.

 Avoid using while bathing. If continuous usage is required by the physician's prescription:

The concentrator must be located in another room at least 2.5m from the bath.

- DO NOT come in contact with the concentrator while wet.
- DO NOT place or store product where it can drop into water or other liquid.
- DO NOT reach for product that has fallen into water. UNPLUG IMMEDIATELY.
- A product should NEVER be left unattended when plugged in.
- This device is to be used only in accordance with the prescription of a physician and this User's Manual. If at any time the patient or attendant conclude that the patient is receiving an insufficient

amount of oxygen, the supplier and/or physician should be contacted immediately. No adjustments should be made to the flow rate unless prescribed by a physician.

- Close supervision is necessary when this product is used near children or physically-challenged individuals.
- Use this product for only intended use as described in this manual.
- DO NOT use parts, accessories or adapters other than those authorized by manufacturer.
- DO NOT connect the concentrator in parallel or series with other oxygen concentrators or oxygen therapy devices.
- Use of some administration accessories or certain humidifiers not specified for use with oxygen concentrator may impair the performance.
- In certain circumstances oxygen therapy can be hazardous.
   Manufacturer recommends that you seek medical advice before using this product.
- Avoid creation of any spark near medical oxygen equipment. This
  includes sparks from static electricity created by any type of
  friction.

### **FEATURES**

### I. SUMMARY

The oxygen concentrator is intended for individual use in the home. It is an electronically operated device that separates oxygen from room air. It provides high concentration of oxygen directly to you through a nasal cannula. Clinical studies have documented that oxygen concentrators are therapeutically equivalent to other types of oxygen delivery systems.

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

### II. CHARACTERS

- Complete plastic out shell, safe and reliable.
- Timing accumulates function, show total working hours through the display screen.
- Timing turns off function using convenience.
- Exceed press safety valve helping safe ensure.
- Power loss alarm function, pressure and cycle failure alarm function, compressor failure alarm function.
- Low oxygen concentration alarm function.
- Compressor with hot protection which ensure safe of the compressor and concentrator.
- Manual and nasal oxygen cannula etc accessories can be put in the store box of concentrator.

### **FEATURES**

### **III. SPECIFICATIONS**

- 1. Flow Range:  $1 \sim 10$ L/min 2. Oxygen Concentration:  $\%87 \sim \%95,5$
- 3. Maximum Outlet Pressure: 20kPa~50kPa (2.9psi~7.25psi)
- 4. Pressure Relief Mechanism Operational at:

- 5. Altitude: Up to 1828 meters (6000 ft) above sea level without degradation of concentration levels. From 1828 meters (6000 ft) to 4000meters (13129 ft) below 87% efficiency.
- 6. Sound Level: ≤59dB (A)
- 7. Power Supply: AC220V 50Hz
- 8. Dimension: H55.6cm (21.9")×W28.5cm (11.23")×D47cm(18.52")
- 9. Minimum Operating Time: 30minutes
- 10. Input Power: ≤700VA 11. Weight: 27kg (60 lbs)
- Electric classification: class II equipment, type B applied part
- Work system: work continuously.
- Keep it far from flammable and explosive gas area.

### IV. NORMAL OPERATION CONDITIONS

- Temperature range:  $10^{\circ}\text{C} \sim 35^{\circ}\text{C} (50^{\circ}\text{F} \sim 95^{\circ}\text{F})$
- Relative humidity: 20%~60%
- Atmosphere pressure: 86kPa~106kPa (12.47psi~15.37psi)

### **HANDLING**

### I. UNPACKING

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

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

### II. INSPECTION

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

### III. STORAGE

- Store the repackaged oxygen concentrator in a dry area.
- DO NOT place other objects on top of the repackaged concentrator.

## I . FEATURE VIEW

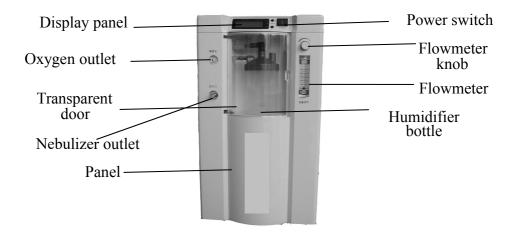


Figure 1

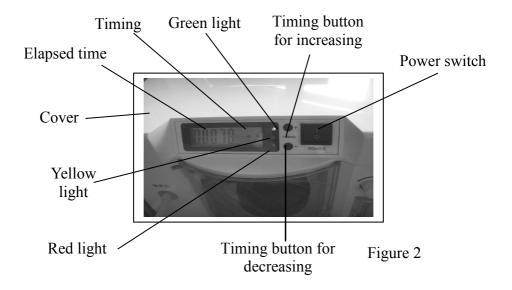




Figure 3: View of the humidifier

### II. PREPARE WORK

 Open the transparent door; unscrew the bottle from the humidifier clockwise. Fill the bottle with pure water (or distilled water) to the level indicated by the manufacturer.

DO NOT OVERFILL humidifier bottle. (Figure 4)

- 2. Screw securely the bottle back counterclockwise.
- 3. Close the transparent door.
- 4. Connect the power supply. WARNING:
  - If the concentrator has a damaged cord or plug, if it is not working

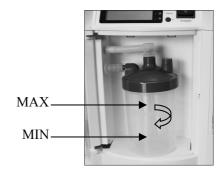


Figure 4

properly, if it has been dropped or damaged, or dropped into liquid, call Qualified Service Personnel for examination and repair.

- 2) Keep the cord away from HEATED or HOT surfaces.
- 3)Do not move or relocate concentrator by pulling on the cord.
- 4) Do not use extension cords with this unit.
- 5. Press down the power switch while the display shows "Elapsed time —— " . After about four seconds, the concentrator will work.

NOTE: Concentrator may be used during the initial start warm-up time (approximately 30 min) while waiting for the O<sub>2</sub> purity to reach maximum

### **III. OXYGEN ABSORBING OPERATION**

- 1. FLOWRATE (Figure 5)
  - Turn the flowrate knob to the prescribed by your physician or therapist.

NOTE: To properly read the flowmeter, locate the prescribed flowrate line on the flowmeter.

Next, turn the flow knob until the ball rises to the line. Now,

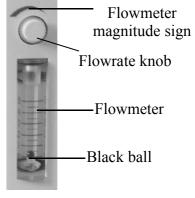


Figure 5

center the ball on the L/min line prescribed.

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

- Meanwhile, humidifier bottle will have air bubble around the sieve core. Then, oxygen comes from the oxygen outlet.
- 2. Connect nasal oxygen cannula to oxygen outlet, the other end match the patient.

Note: The time of absorbing oxygen and the flowrate range according to the doctor's advices.

#### W.ALARM SIGNAL

### • Initial startup of the concentrator

NOTE: Concentrator may be used during the initial start warm-up time (approximately 30 minutes) while waiting for the O<sub>2</sub> concentration to reach maximum.

When the unit is turned on, the green light will come on (O<sub>2</sub> concentration greater than 82%). After 5 minutes, the oxygen sensor will be operating normally and will control the indicator lights depending on oxygen concentration values. The explanations of the indicator light functions are as follows.

# • Explanation of the indicator light

Symbol	Status	Indicator lights
I/O	SYSTEM OKAY (O <sub>2</sub> concentration is greater than 82%.)	Green
$\triangle$	$O_2$ concentration is greater than 50% and less than 82%.	Green Yellow
	SYSTEM FAILURE  (O2 concentration is less than 50%; Or,  High/Low cycle pressure failure alarm;  Or, Compressor circuit failure alarm)	Red

### • Alarm signal register

1. O<sub>2</sub> concentration is greater than 82%. -- Green light illuminates, and panel shows "elapsed time --". Normal Operation.

- 2. O<sub>2</sub> concentration is greater than 50% and less than 82%. -- Green with yellow light illuminate, and panel shows elapsed time. Call Supplier Immediately. You may continue to use the concentrator unless instructed otherwise by your supplier. Be certain that BACKUP OXYGEN is nearby.
- O<sub>2</sub> concentration is less than 50%. -- Red light illuminates, continuous audible alarm sounds, and panel shows word "LO".
   Total unit shutdown. Switch immediately to backup oxygen supply. Call supplier immediately.
- 4. Low/ High cycle pressure failure alarm -- Red light illuminates, continuous audible alarm sounds, and panel shows word "E1 or E2". Total unit shutdown. Switch immediately to backup oxygen supply. Call supplier immediately.
- 5. Compressor's open/short circuit failure alarm -- Red light illuminates, continuous audible alarm sounds, and panel shows word "E3 or E4". Total unit shutdown. Switch immediately to backup oxygen supply. Call supplier immediately.

### V. SETTING TIMING UP

User can press the timing button in 00-99 minutes.

- When it start working, elapsed time and "--"shows on display, it says timing function not open. It will work continually until power supply cuts off.
- Press the "+"button once, operation time increases one minute, holding the button more than 1.5 seconds it will increase continually.
- Press the "-"button once, operation time decrease one minute, holding the button more than 1.5 seconds it will decrease continually.
- It will auto turn off when finishing timing meanwhile "00" show on display. Reset timing function.

### VI. TURNNING OFF

Take off nasal oxygen cannula from oxygen outlet first, close power switch, and then cut off power source.

# **WI. SYMBOLS**

Symbol	Description	Symbol	Description
$\sim$	Alternating current	À	Consult the manual
	Class II Equipment	∱	Type B applied part
	OFF(power. disconnection from the mains)		ON(power. connection to the mains)
	NO SMOKING	<u> </u>	KEEP UP
<u> </u>	FRAGILE	<u> </u>	KEEP DRY

NOTE: Power should be disconnected before beginning preventive maintenance on the concentrator. The concentrator is specifically designed to minimize routine preventive maintenance at intervals of once per year. In places with high dust or soot levels, maintenance may need to be performed more often. The following must be performed at a minimum of one year in service to assure years of additional reliability.

#### I. CLEANING CABINET

WARNING: CUT OFF the power supply first. To avoid electrical shock, DO NOT removes cabinet.

Clean the cabinet with a mild household cleaner and non-abrasive cloth or sponge at least one time each month.

### II. CLEANING OR REPLACING FILTERS

Please clean and replace the filters in time, it's very important to protect compressor and delay machine's life.

CAUTION: DO NOT operate the concentrator without the filters installed.

- Disassembly
  - 1) I -stage air intake cleans once a month. (Figure 6)

Figure 6

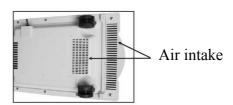
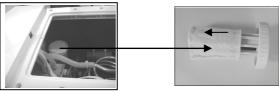


Figure 7



- 2) II -stage filter mesh in filter cleans half a month. (Figure 7)
  - 1) Open the store box cover (Not: not exceed 90 degree, avoid break), unscrew the screw, take off the store box, and pull out the filter core.
  - ② II -stage filter mesh cleaning time depends on practically using and condition. If the filter core becomes black, please replace or clean at once, whether the practice time is long or short.

## Cleaning

- 1) Clean the filters with a vacuum cleaner or wash in warm soapy water and rinse thoroughly.
- 2) DRY the filters thoroughly before reinstallation.

Damage: Do not operate the concentrator without the filters installed, or while filters are wet. These actions could permanently damage the concentrator.

### **III. CLEANING HUMIDIFIER**

- 1. Change the water in humidifier bottle every day.
- 2. Clean humidifier once a week with soapy water and rinse it with a solution of ten (10) parts water and one (1) part vinegar. Rinse thoroughly with warm water and refill with pure water (or

distilled water) to the level shown on the humidifier. (NOTE: No blobs in oxygen tubing)

- Disassembly
  - 1) Open the transparent door; and screw off the bottle (Figure 8)
  - 2) Take out of the core tube and sieve core (Figure 9)



Figure 8



Figure 9

### IV. REPLACE FUSE TUBE

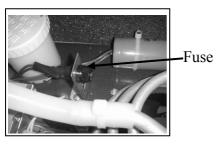
1. Fuse tube for net power (Figure 12)

Type: T5AL250V,  $\Phi$  5×20 (AC220V $\sim$ 240V)

 $T6AL250V, \Phi 5 \times 20 (AC100V \sim 120V)$ 

WARNING: CUT OFF the power supply first.

Open the store box cover, unscrew the screw, and take off the store box. Unscrew fuse box counterclockwise, replace the fuse tube.



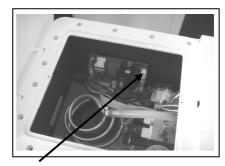


Figure 12

Fuse Figure 13

2. Fuse tube for circuit board (Figure 13)

Type: F1AL250V,  $\Phi$ 5×20

WARNING: CUT OFF the power supply first.

Disassemble the top cover, front panel and front board. Pick out the fuse tube cover, take out the fuse tube and replace it.

# VI. TROUBLESHOOTING GUIDE

Symptom	Probable cause	Solution	Remark
Press the switch, the concentrator is alarm of continuous buzzer but no display and working.	1)Power cord NOT plugged in.	1) Insert plug into outlet.	
	2) No power at outlet.	<ol><li>Use normal power.</li></ol>	
	3) The fuse tube for net power break.	3) Replace fuse tube.	Repairs by qualified
working.	4) Tripped circuit breaker.	4) Replace it.	personnel.
	1) I -stage filter blocked.	1) Clean or replace it.	
	2) II -stage filter blocked.	<ol> <li>Clean or replace it.</li> </ol>	
Concentrator is working, the turning sound of	3) Insufficient power at outlet.	3) Do not use extension cords. Move to another electrical outlet or circuit.	
assemble valve is weak and the	4) The air intake of compressor kinked.	4) Smooth them.	
flowmeter can turn down but can't turn up at a certain value.	5) Pressure relief valve of compressor leaked gas.	5) Repair or replace the valve.	Danaina haa
	6) Tube on the sieve bed leaked gas.		Repairs by qualified personnel.
	7) Insufficient air exchanging of assemble valve.	7) Replace the valve.	personner.
	8) Failure of electronic control circuit.	8) Repair or replace it.	
Concentrator is working with a sound of phut-phut, and the ball in the flowmeter located on "0" position or float unstable.	1) Failure of pilot valve.	1) Repair or replace it.	
	2) Failure of assemble valve.	2) Replace it.	Repairs by
	3) Failure of electronic control circuit board.	3) Repair or replace it.	qualified personnel.

Symptom	Probable cause	Solution	Remark
Componentania	1) Humidifier leaked.	1) Reinstall and tighten it.	
	humidifiar anana	<ol><li>Safety valve restoration.</li></ol>	
outlet is little or	tubes ioosenea.		
		4) Replace it.	
		1) Smooth it.	
	humidifier bottle blocked.		
down at a certain value.	<ol><li>Tube connected with the oxygen outlet is folded or compressed.</li></ol>		Repairs by qualified personnel.
working with		1) Tighten it.	
		2) Replace it.	
display is "0" and	<ol><li>The pressure regulator ruptured or blocked.</li></ol>		
Concentrator is	1) The connect line of display's twelve cores is loose.	connecting line.	
display or appears	2) The connect line of display's twelve cores is broken.	connect line.	
disorderly code.	<ol> <li>Display circuit board has fault.</li> </ol>	3) Replace it.	
Press the switch, displaying is	makes it breakdown.	1)Operate the concentrator after turning off $3 \sim 5$ minutes.	
	<ol> <li>Fuse tube on main controlling circuit board broke.</li> </ol>		Repairs by
work.	3) The main controlling circuit board has fault	<ol> <li>Replace the main controlling circuit board.</li> </ol>	qualified personnel.

Symptom	Probable cause	Solution	Remark
	1) $50\% \le \text{oxygen}$ concentration $\le 82\%$	1)Clean or replace the filter.	
with yellow light illuminate.	2)Oxygen flowrate is more than 10L/min  3)If this state continues, yuse the concentrator. Cor	2)Compiled doctor's advice, turn the flowmeter to the given value. You may continue to ntact the supplier at	
	once. 1) Oxygen concentration<50%	1) Clean or replace the filter.	
light illuminate, the display screen shows "LO".	2)Oxygen flowrate is more than 10L/min  3)If this state continu	2)Turn off the concentrator and on it again, turn the flowmeter to the given value.  les, stop using the	
Concentrator is alarm and not	concentrator and get in supplier at once.  1) Low cycle pressure failure.		
display screen	If this state conting concentrator and get in supplier at once.	ues, stop using the	
Concentrator is alarm and not working, the red light illuminate, display screen shows "E2".	<ol> <li>High cycle pressure failure.</li> </ol>	Stop using the concentrator and get in touch with the provider at once.	
Concentrator is	Compressor circuit is open circuit.	1) Stop using the concentrator and get in touch with the supplier at once.	

Symptom	Probable cause	Solution	Remark
Concentrator is alarm and not working, the red light illuminate display screen shows "E4"	Compressor circuit is short circuit.	1) Stop using the concentrator and get in touch with the supplier at once.	
The nasal cannula has more mirage or blobs.	completely around	lmachine is at least	
	<ol> <li>Temperature of the water added in humidifier bottle is overhigh.</li> </ol>		
	1		
	4) The machine stops suddenly during breathing oxygen.	to eject the hydrosphere.	
	5) The machine stops suddenly when folding the nasal cannula.	5) Smooth the nasal cannula.	
	operating temperature	eyewinker that lock the fan.	Repairs by qualified personnel.

Symptom	Probable cause	Solution	Remark
X The nebulizer doesn't run.	1) Check nebulizer is distortional or not if it was disinfected.	1) Replace it.	
	1 2	2) Ensure that it isn't bended and airflow is flowed smoothly when it is used.	
	3) Check whether medication was used up or not.	3) Add appropriate amount medication to cup.	7F-5W
	4)Check the nebulizer is fixed properly or not.	4)Fix it according the method of nebulizer's fixing.	model only
Water drops have formed on the air hose.	The medication was over-filled or the nebulizer was washed.	Add appropriate amount medication to cup. Connect air hose to main body and turn on. Close and open repeatedly by finger in order to get out the water drops.	

If you have all other problems, TURN OFF the concentrator first, use your reserve oxygen supply (if provided), and contact dealer or manufacturer immediately.

# **DISASSEMBLY(CUT OFF the power supply first)**

### I. DISASSEMBLE THE TOP COVER

- Open the transparent door, unscrew 2 fixing screws. (Figure 1)
- Open the store box cover, unscrew 2

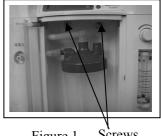


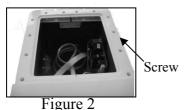
Figure 1 Screws

-line

-peg

fixing screws, and take out the store box.

• Unscrew 12 fixing screws (Figure 2), pull out of the connection -line of display's 12-cores and connection-peg of switch 6-cores (Figure 3).



Connection Connection Figure 3

### II.DISASSEMBLE THE FRONT PANEL

• Open the transparent door, pull the oxygen tube off the humidifier outlet

• Unscrew 2 screws in the top of panel.(Figure 4) .Make concentrator horizontal, unscrew 2 fixing screws in the bottom.(Figure 5), and take off the panel.

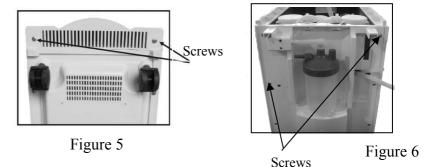
Screws

Figure 4

### III.DIASSEMBLE THE FRONT BOARD

# **DISASSEMBLY(CUT OFF the power supply first)**

Unscrew 8 fixing screws in the front board and take off it. (Figure 6)



### IV.DISASSEMBLE THE OUTSIDE CABINET

- Make concentrator horizontal; unscrew 10 fixing screws in the bottom. (Figure 7)
- Make the machine up-right, take out the cabinet parallel from the front.(Figure 8)

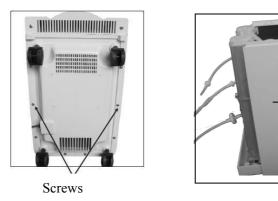


Figure 7 Figure 8

# **DISASSEMBLY (CUT OFF the power supply first)**

# V .DISASSEMBLE THE SIDE BOARD OF THE INSIDE CABINET

Unscrew the screws on both sides (9 screws each side) and take out it. (Figure 9, Figure 10)

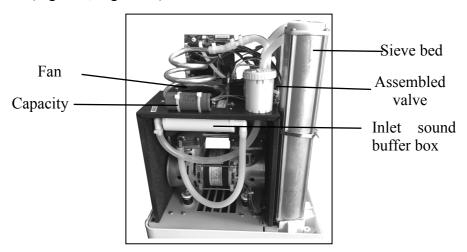


Figure 9

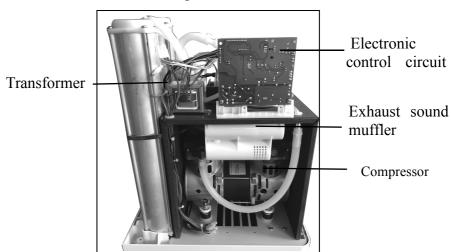


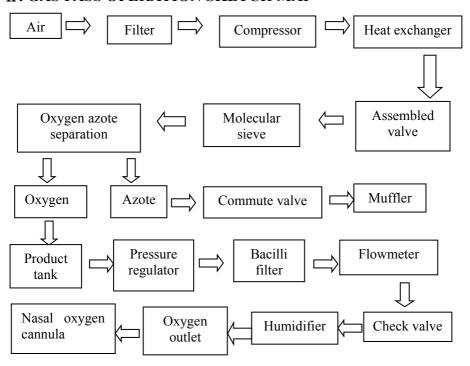
Figure 10

## **OTHER ATTENTION ITEMS**

### I. LIMITATION OF TRANSPORT AND STOCK

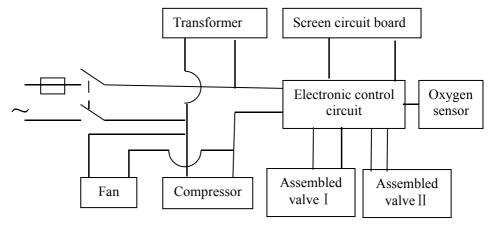
- Temperature range:  $-40^{\circ}\text{C} \sim 70^{\circ}\text{C}(-104^{\circ}\text{F} \sim 158^{\circ}\text{F})$
- Relative humidity: 10%~100%
- Atmosphere pressure range: 80kPa~106kPa (12.47psi~15.37psi)
   The concentrators must be stored in aeration without erode gas, avoided shaking and inversion in transport.

#### II. GAS PASS OPERATION SKETCH MAP



# **OTHER ATTENTION ITEMS**

### III. ELECTRICAL RATIONALE



### IV. ACCESSORIES LIST

1. Nasal oxygen cannula: 1 set 2. Filter core: 1 set

3. Fuse tube: each 2 pieces 4. User manual: 1 piece

All specifications and product configurations are subject to change without notification.

CE NO. G2 18 01 96468 004





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