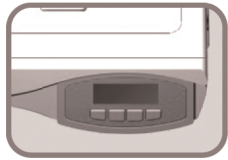
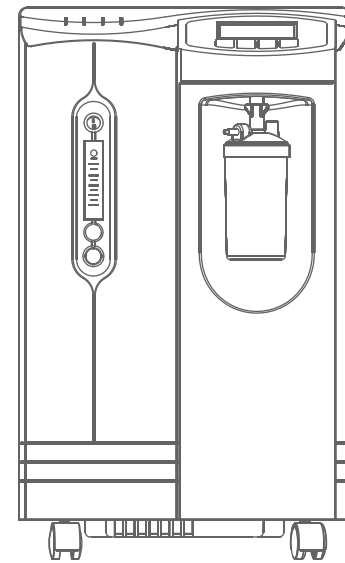




User Manual of Oxygen Concentrator



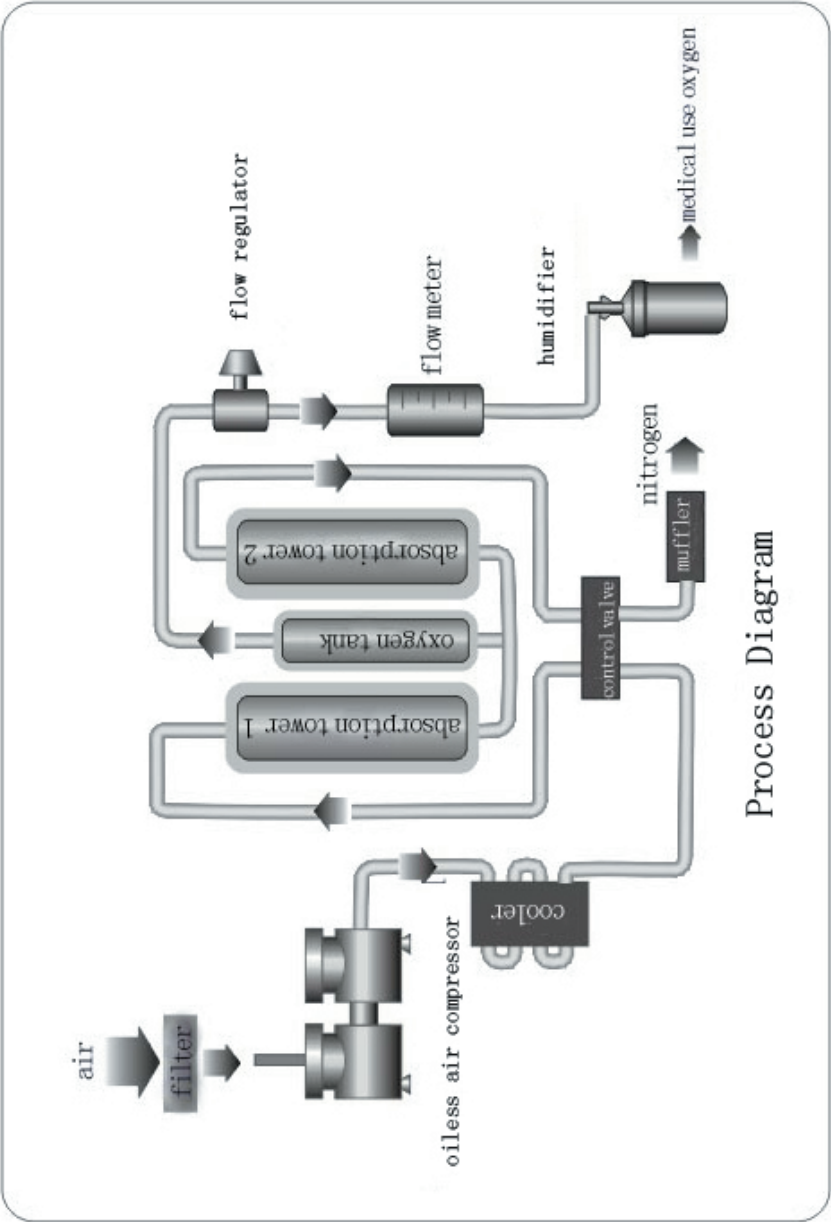
**Professional Quality
with Stable Performance**



Do have a close read of this operation manual before first using.

Version: A/3





Process Diagram

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Foreword

Thank you for purchasing our products, hope you will be satisfied with our products.

This operation manual contains functions, operation steps, attention, basic trouble solution and so on.

To ensure your efficient use of the machine, please have a close read of this operation manual before operating it.

Maybe there are some pictures in this manual which are different from what you have seen in the real model.

Safety notice Warning

- This product cannot be used for life maintaining, it is suggested that if any patient who needs oxygen treatment, please follow doctor's advice to choose the right flow and period for oxygen before using the machine.
- If any adverse reaction appeared or revealed during taking oxygen, please contact with equipment supplier or doctor as soon as possible.
- For serious patients who set an indicating device additional, any adverse reaction appeared, please contact with equipment supplier or doctor as soon as possible.
- Do not put nasal pipe under bed cover or cushion, the oxygen that caused by machine turning on without breathing may be combustion-supporting.
- Turn off the switch if no body takes oxygen.
- For oxygen can be combustion-supporting, keep oxygen concentrator far away from naked light or fire resource, no smoking or naked light around the patient.
- Before cleaning the dust on the net of oxygen concentrator, the plug must be pulled out in case of electric attack.
- When using the machine, do not open the front and back cover at all. In case there are quality problems, do not dismantle it secretly. Any alarm or other abnormal phenomenon has been found, contact with equipment supplier or manufacturer.
- Do not modify this equipment without authorization of the manufacturer.
- The breathing system hoses may cause strangulation due to excessive length.
- Keep the equipment away from the child and pet.
- Be careful of the small parts of accessories, don't swallow.
- Contact the doctor if you got allergic reactions.
- Please use Accessories and detachable parts specified/authorized by manufacturer. Otherwise, it may cause damage to the unit or danger to the user/patient.

Attention  **Notice**

- The oxygen concentrator should be set to use in an environment without dust, corruption and toxicological harm gas.
- Air intake of the oxygen concentrator should be located in well-ventilated space, in case there are polluted air or smog in the oxygen.
- Ensure the bottom exhaustion smooth during operating, or else the machine will be over-heated.
- There is intermitted exhaustion sound during operating (10 seconds in intermission).
- 5 minutes are needed for oxygen concentrator from warming up to reach regular function.
- The machine is only for medical oxygen supply, and the oxygen concentration will be up to 90% when air outlet reaches its rated flow.
- Humidifier shall adopt distilled water or cold boiled water, added shall be kept under the scale line.
- Use the humidifier bottle with the machine, do not replace it at will, or else may cause patient uncomfortable or other harms.
- In case state indicator shows abnormal oxygen operator should declare to dealer or factory in favor of maintain.
- The humidifier, filter cotton and filter are the items needed to clean, among which humidifier should be cleared every 3 days, and external filter cotton should be cleared every 100 hours, and internal filter should be cleared every 3000 hours.
- Once open the adjust knob for flow in full, but flow meter shows zero, turn off the machine immediately and have a check for trouble.
- Do not turn on and off frequently. To restart the machine after turning off should have an interval no less than 5 minutes (exhaust internal gas of the machine completely, avoid air compressor turns on with pressure will shorten its life)
- Do not turn on the power with flow switch adjusting shut up.

- Refresh the water in the humidifier bottle every 2-3 days, especially in summer. If do not use it in several days, please pour out the water completely, and wipe dry the bottle
- Use the oxygen tube and humidifier bottle with the machine or those of the same model, if change to use other model devices, please ensure close connection with the oxygen concentrator. The oxygen tube is only for the patient, and do not throw it at will.
- The oxygen tube, oxygen mask and nebulizer that have touched with the patient should keep clean, disinfected and sterilized.
- The oxygen tube that have touched with the patient after each operation should be disinfected by wiping it with 75% medical use alcohol or other disinfecting methods. To prevent cross infection, do not share oxygen tube.
- Use only water-based lotions or salves that are oxygen-compatible before and during oxygen therapy. Never use petroleum or oil-based lotions or salves to avoid the risk of fire and burns.
- Do not remove the cover by unauthorized persons.

Notes for nebulization operation.

- Use the same model atomizer with the one brought with the machine
- If there is not atomization treatment, do loosen the nut of atomization joint to ensure no gas leaking.
- When atomizing stuck, check the atomization joint first, in case there is a clog, use No. 7 needle to clean it up.
- Using distilled water to do the atomization for several seconds after each operation may lighten the crystallization caused by medical solution.
- If atomizing still cannot work then open the cover of the bottle and add clean water in small amount. Rotate the white ball which lies in the bottle with the gas resource connected and select the proper angle to gain a better atomization.

Product introduction

Medical oxygen concentrator adopt pressure swing adsorption principle, which can separate oxygen, nitrogen and other gas from the air, at constant temperature, as soon as power is connected, the oxygen that meets medical use standards can be separated from air constantly. Oxygen is generated by pure physical method. The concentrator can supply 1-2 patients simultaneously, with steady oxygen flowing out, safe and reliable, low cost, adjustable flow. The key parts of the concentrator adopt anti-tiring and anti-aging design, and the planned life of the whole generator reaches up to 10,000 hours. There is no influence on indoor oxygen percent during the concentrator operating.

Using condition

- 1.Ambient temperature: 10℃ to 40℃
- 2.Relative humidity: 30%-75%
- 3.Air pressure: 700 hPa-1060 hPa
- 4.No corrosive gas and strong magnetic field around.

Packing list

Name	Quantity	Specification
Oxygen Concentrator	1PC	
User Manual	1PC	
Cannula	2PCS	2.5 meters
Power Line	1PC	1.8 meters
Plastic T Connector	1PC	
Humidifier Bottle	1PC	
Inlet Filter Net (replaceable part)	2PC	
Filter Cotton	1PC	
Nebulizer Kit (for optional nebulizer types only)	1PC	10ml for nebulizer feeder volume

Scope of application

This device is mainly used for generating medical oxygen .

Technical parameter

Model	HG3 series	HG5 series	HG8 series	HG10 series
Power Consumption (W)	390	480 / 350*	480	680
Working voltage(V/Hz)	~230/110V 50/60Hz			
Flow Rate (L/mln)	0-3	0-5	0-8	0-10
Concentration (%)	≥ 90			
Outlet pressure (Mpa)	0.04-0.08			
Sound level (dB)	≤ 45	≤ 50 / 45*	≤ 50	≤ 55
Electrical category:	Class II Type BF			
Product category:	Class II a			
Net Weight (Kg)	27	30 / 27*	30	31
Dimension (mm)	W400×D365×H650			
IP classification	IP 21			
Nebulizer Function (optional function)	≤5 μ reaches 90% only for atomization type			
Oxygen purity alarm (optional function)	When oxygen purity is less than 82%, the alarm starts up (Only for oxygen purity alarm type)			

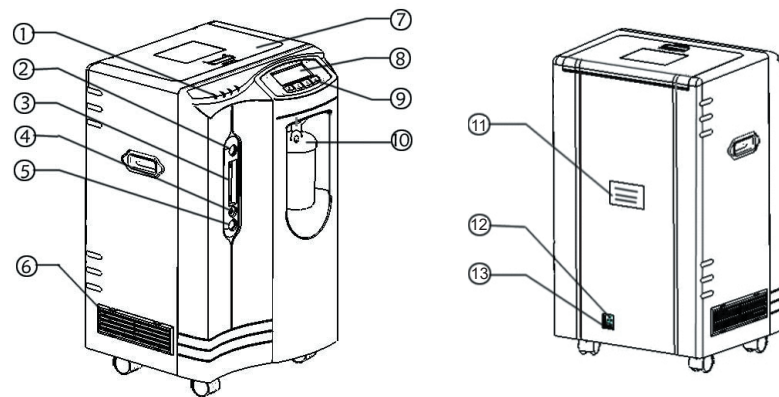
*5 Liter low noise version

Symbols

No.	Graphical symbols	Description
1		Date of manufacture
2		Authorized representative in the European Union
3		Serial number
4		Manufacturer
5		CE mark: indicates that the device complies with the EU 2017/745
6		Type BF applied part
7		Class II equipment
8		Operator's manual; operating instructions
9	IP 21	Ingress protection
10		ENVIRONMENT PROTECTION - Waste electrical products should not be disposed of with household waste. Please recycle where facilities exist. Check with your local authority or retailer for recycling advice.
11		Caution: indicates the need for the user to consult the instructions for use for important cautionary information such as warnings and precautions that cannot, for a variety of reasons, be presented on the medical device itself.
12		Medical device
13		Unique device identifier
14		Fragile, handle with care
15		Keep dry
16		This way up

Alam	Visual indicators	Audible indicators
Loss of power	Red	
Oxygen percent alarm	Red	• • •
Overheat warning	Red	• • •

Operation introduction



1) Indicator light

Total 4 indicator lights, and the code of them are 1,2,3,4 from right to left, and their indication for each model are as follow:

- 1: power indicator (green) 2: power off alarm (red)
- 3: Temperature alarm (red) 4: oxygen purity (optional function: green-normal, red alarm, the Oxygen purity is lower than 82%)

2) Power switch

3) Oxygen flow meter

The location of float in the oxygen flow meter shows the outlet oxygen flow(L/min).

4) Knob of oxygen flow meter switch

The other name of knob of oxygen flow meter switch is flow control valve.

It adjust and control the outlet oxygen flow.

Do not Switch it over - forced, or else it is easy to damage the valve core. Switch it counter clockwise to turn up, clockwise to turn down.

5) Atomization outlet (optional function)

6) Intake air filter

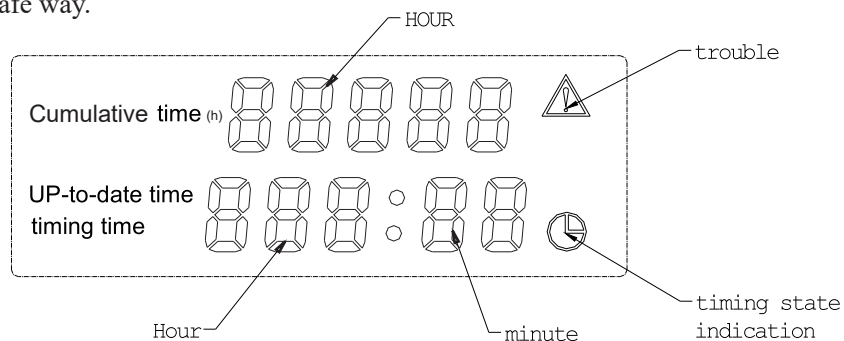
Once need to replace, replace it by special for the machine.

7) Storage case

It is used for storing absorbing tubes and other articles together with the machine.

8) Liquid crystal display

It can display total / present working hours of the machine, which may guide the user to operate the concentrator in a more scientific and safe way.



9) Key

It is used for time adjusting, switch between continue absorbing and timing absorbing.

10) Humidifier

Humidifier bottle is also called oxygen humidifier which used for humidifying oxygen and preventing throat and nasal mucosa stimulated by dry oxygen and dry hard sputum difficult to spit out.

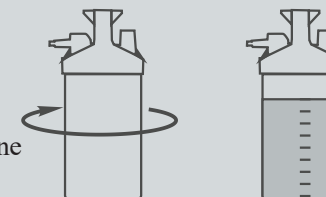
11) Data plate

12) Power socket

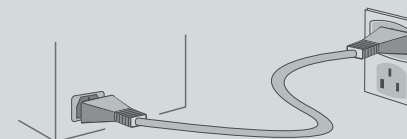
13) Fuse tube

Operation steps for first time using

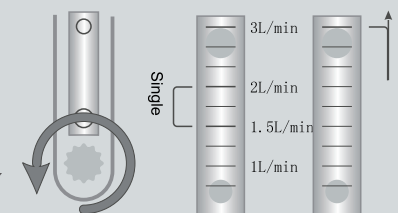
1. Take off the humidifier bottle in clockwise direction. Pour in proper distilled water or cold boiled water within the scale between the top scale line and the lowest one, then screw the bottle tied.



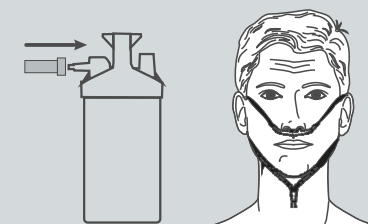
2. Connect the power, put the plug of powerline connected with the power socket of the oxygen concentrator, and the other end of the plug connects with indoor power socket, turn on the power switch.



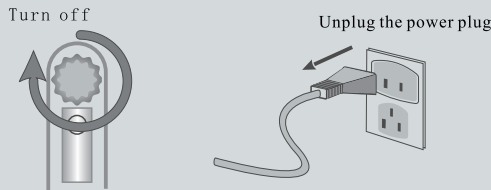
3. Adjust oxygen output flow according to your request, the green part at the bottom of the flow meter is recommended oxygen absorbing flow (counterclockwise up, clockwise down, for common single treatment, the flow may be adjusted to 1.5-2L/min, for double use, the flow may be adjusted to $\geq 3L/min$)



4. Insert the intake end of absorbing oxygen tube onto the outlet of humidifier bottle, then set the absorbing oxygen tube over patient's nostrils to absorb oxygen; absorbing time for health care should last for 40-50 minutes each time the best, absorbing time for medical treatment must follow doctor's advice.



5. When finished absorbing oxygen, turn off the power, if do not often use it, please unplug the power plug.



6. If the patient need timing function, first, press the switch key of continue / timing, then the timing clock flickers, and adjust the timing time by ▲▼ keys, finally confirm the timing state. Under the timing state, it is able to switch to continue state by pressing the switch key of continue / timing.

7. Oxygen purity alarm is a new function . after turning on the oxygen percent indicator, which is on the oxygen concentrator, shows the oxygen percent that measured before last turning off, judging by the color of the indicator, green indicate normal operation, red indicate that the machine need maintenance or servicing. After 10 minutes (the time for pre-hot of internal oxygen percent sensor) it indicates the scale of oxygen percent that produced after this turning on. Oxygen percent measurement is timing simple mode. When the machine is in the condition of oxygen generation, it measures oxygen percent at an interval of 10 minutes.

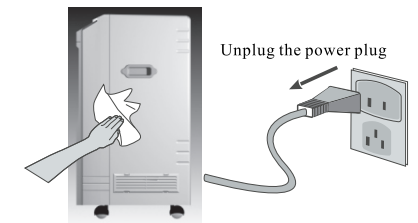
8. In case oxygen concentrator is connect with power but the whole machine is still in the state of power off with alarm sound, please check out the connection part of power whether it is in good connection, or whether there is a power off in external power supply.

Nebulization operation methods (for nebulization type only)

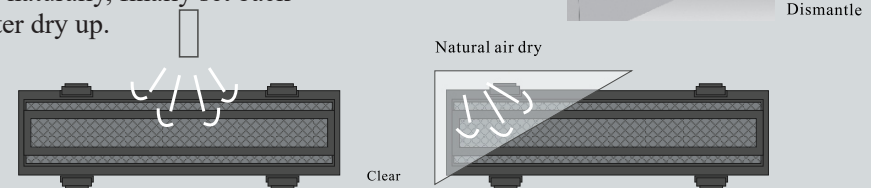
1. Open the cover of medical glass, add nebulization remedy that needed, then close the cover.
2. Connect the joint of nebulization nozzle (or mask) with the cover of medical glass, and then connect the other end of atomizer connection tube with the nebulization outlet joint of oxygen concentrator, and screw the nut tied.
3. Turn on the power of oxygen concentrator, and shut up flow meter, then it is ready for nebulization treatment.
4. Do clean the nebulization devices after treatment finished. Clean atomizer and connection tube with detergent and clean water; as to nebulization nozzle and mask use clean water to clean first, then carry on disinfecting and sterilization by dipping them into medical alcohol for five minutes or putting them under ultraviolet lamp, again wash them clean with clean water, and finally put them in the packet after dried up and keep them in storage case.

Maintenance description

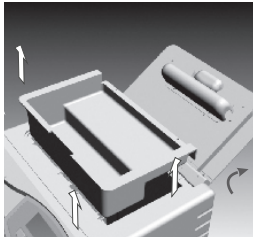
1. In the condition of power off, make a clean for the outside body by soft towel with little detergent, and then wipe it up with dry towel, once or twice per month.



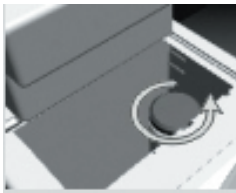
2. It is an important step for daily maintenance to clean filter net for gas intake, at least twice a month. Detail steps: take off the two filter nets on both sides of the body, clean them with detergent and wash it clearly with clean water and dry up naturally, finally set back after dry up.



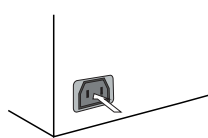
3. Clean air intake filter every 3000 hours, open the top cover and take out storage case.



Screw open the body of filter in counterclockwise direction, take off filter cotton, then clean it with detergent, and then clean it out with clean water completely, get rid of the extreme water, and dry it naturally, finally set back after dry up.



4. Replacement of fuse tube. Take off the cover of fuse which is in the power socket, dismantle the fuse tube off by small screw-driver. Close the cover of fuse after fuse tube is replaced. The other fuse tube is located at the intake of internal power line, the method of replacement is the same with that above.



5. The cover of humidifier bottle must be screwed firmly, or the leaking gas from there will decrease oxygen purity. Brush it clean once every 2 or 3 days, in order to prevent the bacteria in water.

Trouble and shooting

N0	Trouble	Causes	Solution
1	No operation after power connected	1.No connection between circuit of oxygen concentrator and power 2.Circuit of fuse protector broken 3.Capacitor of compressor broke 4.Compressor broken	1.Check out whether switch,plug, power line in good connection. 2.Replace the fuse protector and find the cause 3.Replace start capacitor 4.Have the compressor replaced
2	No oxygen out or tiny outtake flow	1.Folded inside oxygen tube, no smooth outtake 2.Filter blocked, no smooth intake 3.The cover of humidifier bottle leaking	1.Connect the oxygen tube again 2.Clean the filter . 3.Take off the cover, screw well the cover, block the outlet by thumb after turning on, and there will some sound from the humidifier bottle after 5 seconds around (the safety valve of humidifier bottle turns on)
3	No exhaust sound	1.Control valve cannot work 2.Main board can not work	Have air control valve replaced Have main control board replaced
4	Too noisy exhaustion	1.The joint of exhaustion muffler fallen off. 2.Exhaustion muffler broken	Connect the joint well Have the muffler replaced

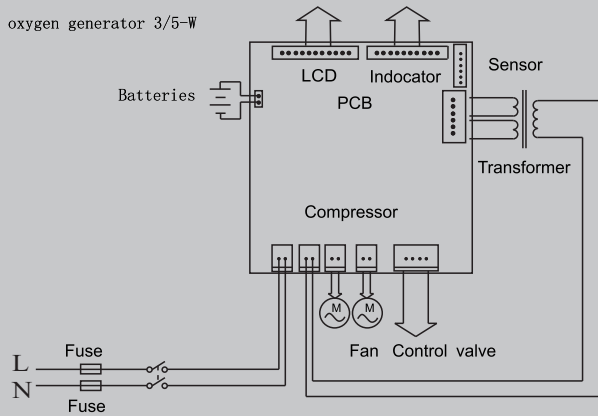
Condition for transportation and storage

Environment temperature scale : -20℃ -45℃
 Comparative humidity scale : ≤ 95%
 Air pressure scale : 500hpa~1060 hpa

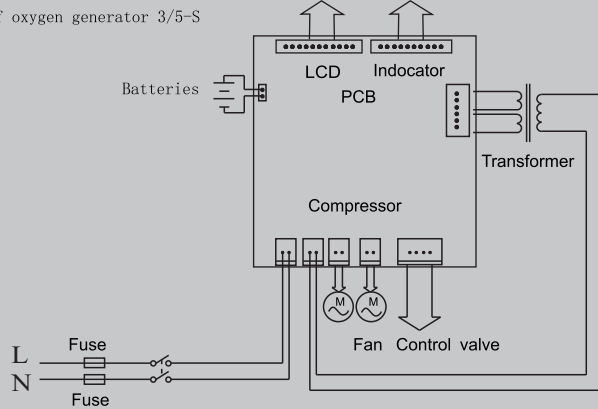
Quality Warranty

Quality Warrant: 10000 hours or 2 years whichever comes first
 Design life of the whole machine: 5 years.

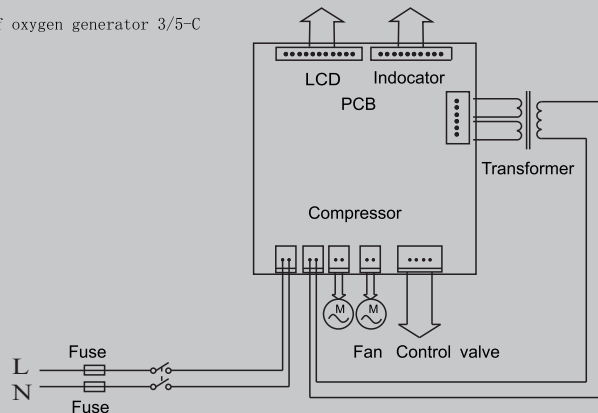
Connection diagram of oxygen generator 3/5-W



Connection diagram of oxygen generator 3/5-S



Connection diagram of oxygen generator 3/5-C



EMC INFORMATION

This equipment has been tested and found to comply with the limits for medical devices to the Electromagnetic Compatibility standard.

These limits are designed to provide reasonable protection against harmful interference in a typical medical installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed according with the instructions, may cause harmful interference to other devices in the vicinity. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to other devices, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving device.


1. Increase the separation distance between the equipment .
2. Connect the equipment into an outlet on a circuit different from that which the other device(s) are connected.
3. Consult the manufacturer or service technician for help.

Guidance and Manufacturer' s declaration - electromagnetic emissions

is intended for use in the electromagnetic environment specified below. The customer or the user of the The HG series should assure that it is used in such an environment .

Guidance and manufacturers declaration -electromagnetic emissions		
The device is intended for use in the electromagnetic environment specified below. The customer or the user of the device should assure that it is used in such an environment.		
Emissions test	Compliance	Electromagnetic environment -guidance
RF emissions CISPR 11	Group 1	The device is suitable for use in all establishments,including domestic establishments and those directly connected to the public low-voltage power supply network.
RF emissions CISPR 11	Class B	
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Complies	

Guidance and manufacturers declaration - electromagnetic immunity			
The device image intensifier is intended for use in the electromagnetic environment specified below. The user of the device image intensifier should assure that it is used in such an environment.			
IMMUNITY test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
Electrostatic discharge (ESD) IEC 61000-4-2	±6 kV contact ±8 kV air	±6 kV contact ± 8 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %.
Electrical fast transient/burst IEC 61000-4-4	±2 kV for power supply lines	±2 kV for power supply lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1 kV line(s) to line(s)	±1 kV differential mode	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	<5 % U _T (>95 % dip in U _T) for 0.5 cycle 40 % U _T (60 % dip in U _T) for 5 cycles 70 % U _T (30 % dip in U _T) for 25 cycles <5 % U _T (>95 % dip in U _T) for 5 s	<5 % U _T (>95 % dip in U _T) for 0.5 cycle 40 % U _T (60 % dip in U _T) for 5 cycles 70 % U _T (30 % dip in U _T) for 25 cycles <5 % U _T (>95 % dip in U _T) for 5 s	Mains power quality should be that of a typical commercial or hospital environment. If the user of the device image intensifier requires continued operation during power mains interruptions, it is recommended that the device image intensifier be powered from an uninterruptible power supply.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	0.3 A/m	If image distortion occurs, it may be necessary to position the device image intensifier further from sources of power frequency magnetic fields or to install magnetic shielding. The power frequency magnetic field should be measured in the intended installation location to assure that it is sufficiently low.
NOTE: U _T is the a.c. mains voltage prior to application of the test level.			

Guidance and manufacturers declaration - electromagnetic immunity			
The device is intended for use in the electromagnetic environment specified below. The customer or the user of the device should assure that it is used in such an environment.			
IMMUNITY test	IEC 60601 TEST LEVEL	Compliance level	Electromagnetic environment - guidance
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz	3 Vrms	Portable and mobile RF communications equipment should be used no closer to any part of the device, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance $d = 1.2\sqrt{P}$
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2,5 GHz	3 V/m	$d = 1.2\sqrt{P}$ 80 MHz to 800 MHz $d = 1.2\sqrt{P}$ 800 MHz to 2,5 GHz where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, ^a should be less than the compliance level in each frequency range. ^b Interference may occur in the vicinity of equipment marked with the following symbol: 
NOTE 1 At 80 MHz and 800 MHz, the higher frequency range applies.			
NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.			
^a Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the Model 006 is used exceeds the applicable RF compliance level above, the Model 006 should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the Model 006.			
^b Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.			

Recommended separation distances between portable and mobile RF communications equipment and the device				
Rated maximum output power of transmitter W	Separation distance according to frequency of transmitter m			
	150 kHz to 80 MHz $d = 1.2\sqrt{P}$	80 MHz to 800 MHz $d = 1.2\sqrt{P}$	800 MHz to 2,5 GHz $d = 2.3\sqrt{P}$	
	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 transmitters rated at a maximum output power not listed above, the recommended separation distance d in metres (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

NOTE 1. At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

NOTE 2. These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.