# LG501 Oxygen concentrator Service Manual

## Working Principle



# The Electric Circuit Diagram



# Structure Chart



- 1. Front shell 1
- 2. Back shell
- 3. Base
- 4. Lid for inlet air
- 5. Display panel
- 6. base board
- 7. left side plate
- 8. Right side plate

- 9. Case
- 11. Compressor
- 12. Inlet filter cotton
- 13. Case foam-1
- 14. Case foam-2
- 15. Case foam-3
- 16. EVA-1
- 17. Right side case foam
- 18. Left side case foam
- 19. Base foam
- 20. Aerofoil fan
- 21. Silencer
- 22. Silica gel connector
- 23. Air intake filter
- 24. Oxygen generation system
- 25. The compressor outlet pipe
- 26. Pipe clamp
- 27. EVA-2
- 28. PCB board
- 29. LED Liquid Crystal Display
- 30. Flow meter
- 31. Power switch
- 32. Trundle
- 33. Outlet connector
- 34. Overload protector
- 35. Humidifier Cup
- 36. AC power cord
- 37. Bacteria filter
- 38. Check valve
- 39. Capacitance
- 40. Tieline buckle
- 41. Panel stickers

# Common trouble shooting

a) Remove the shell

- b) The oxygen flow of nasal cannula is weak
- c) Switch light
- d) Noisy
- e) Compressor
- f) Cooling fan
- g) Circuit board
- h) Solenoid valve

# **Trouble found and repair**

The following chart will help you analyze and fix the trouble of LG501. If the following suggestions can't help you fix the unit, please connect GBA oxy-tech.



Warning In case electric shock, only technician could

move the shell.

## a) Remove the shell

- 1. Firstly, lying down the machine to the platform with protective pads, than take off the screws on the handle between the front and back shell as well as the screws on the middle of the shell, by using screwdriver. See picture 1-1
- 2. Upright the machine, open the inlet lid on the back, then take out the air inlet filer, push away the Silica gel connector and then take away the back shell. The inner version of the machine can be saw.





P 1-1 b) The oxygen flow of nasal cannula is weak

### Firstly, take off the humidifier cup, block off the oxygen outlet with hands, watch if the floating ball of flow gauge could be back to bottom or not.

- I If the ball could, the points should be humidifier cup. Re:
  - a. Check the humidifier cup, tighten the cap of humidifier cup.
  - b. Check the tubes of nasal cannula in case of bending

### II Turn on the machine and turn up the flow gauge, taking off the humidifier cup, the ball couldn't down to the bottom when you block off the oxygen outlet.

Re: the flow gauge leak. Open the shell and check the flow meter and inner pipes(See P 2-1). If the flow meter is broken, pls replace it(First, disconnect the tube with the joint of flow meter, then screw the joint anti-clockwise direction. Next, take out the oxygen gauge and change new).

Check the inner pipes, see whether bending or fracture are existed.



Picturer2-1

### c) Switch light

#### I turn on the machine, the unit doesn't work and LED display doesn't on

Re: check the power strip first and then check the joint of electric cord power with the circuit board. Check whether it's well connected.

#### II turn on the machine, the unit work but the show on LED display is disordered

Re: the program of circuit board error. Change the circuit board.

#### III The alarm doesn't work when the power is off.

Re: 1.the alarm switch is broken, change it

2. Operating the machine for a while till the alarm battery is full charged

#### IV. The alarm is continuously

Re: check whether the vent is blocked or not. Keeping above 20cm away from other objects.

### d) Noisy

Turn on the machine, the unit works. But it is noisy inside the machine, especially unnormal.

Re:

a. If you can feel the shaking from the machine, adjust the outlet tube of the compressor by swing. See P 4-1

b. For other phenomenons, open the machine and check inner parts and see which happen problems



Compressor outlet tube

P 4-1



Foot shock absorber spring component

# e) Compressor

#### Turn on the machine, the compressor screamy.

Re:

1. Check the stability of the voltage, if stable, check the capacitance.

- 2. Open the machine and check compressor
- 3. The compressor is aged. Change it

## f) Cooling fan

I The noise doesn't happen until the machine run 15 minutes, the outlet oxygen is normal

Re: Check the fan. Turn the fan blade, if the resistance is large, change the fan.

Install the fan with the arrow direction down as follow (P 6-1)

II The machine is over temperature alarm after run 1- 2 hours continuously. And the cover of machine is very hot

Re: Check if there is something block the ventilation at the bottom of rear cover. Move the block.

III The over temperature alarm works when the machine runs 20 minutes continuously at least.

Re: The problems may be the self-hold because of the over-heat. Pls check the fan and air outlet to see whether air exhaust is normal or not; Open the machine to see whether the fan runs or not. If all these are ok, change the fan



P 6-1

# g) Circuit board

I Turn on machine, the LCD display work normally, machine doesn't run. Re: Check if the joints of circuit board with other parts are closely.

II Turn on machine, there is a burst of smoke out. Then the machine stops work. Re: Move the shell, change the circuit board and connect the joints. (P 7-1)

**III** Plug into the power, the panel switch doesn't work. Re: Move the front shell, and check membrane switch.

Below is the instroduction of the terminals



P 7-1

# h)Solenoid valve

#### I Turn on the machine, no oxygen and it doesn't exhaust N2

Re: Open the machine and check the amphenol connector of Solenoid valve first, to see whether it is fallen off or not. If not, change the valve.

II Turn on the machine, the flow bounce a lot, and no air outlet.

Re: Open the machine, check the valve to see whether there is leaking or not. If so, tighten the screws, or change the valve.

