CONCENTRADOR DE OXÍGENO MODELO OLV-10S
CONCENTRATOR OF OXYGEN MODEL OLV-10S
CONCENTRATEUR DE OXYGÈNE MODÈLE OLV-10S

REF. - CODE - RÉF. - ZMC024

Este manual es parte inseparable del aparato por lo que debe estar disponible a todos los usuarios del equipo. Le recomendamos leer atentamente el presente manual y seguir rigurosamente los procedimientos de uso para obtener las máximas prestaciones y una mayor duración del mismo.

This manual should be available for all users of these equipments. To get the best results and a higher duration of this equipment it is advisable to read carefully this manual and follow the processes of use.

Ce manuel est une partie indissociable de l'appareil et doit être mis à la disposition de tous les utilisateurs de l'équipement. Nous vous recommandons de lire attentivement ce manuel et de suivre scrupuleusement les procédures d'utilisation afin d'obtenir des performances maximales et une plus longue durée de vie de l'appareil.

LANGUAGE INDEX

TABLE OF CONTENTS

1 PRODUCT OVERVIEW

The AXAVET OLV-10S oxygen concentrator uses air as raw material and high-quality molecular sieve as adsorbent, it adopts the principle of pressure swing adsorption (PSA) to directly separate oxygen from nitrogen at normal temperature, thus producing high purity oxygen.

To ensure the safety and efficiency of the equipment read this manual carefully before use, to have a thorough understanding and knowledge of the product's performance, as well as the correct methods of operation and maintenance. Strictly observe the relevant safety precautions during installation, use and maintenance.

1.1 Characteristics

- Plastic housing, novel design, simple and stable operation, easy maintenance.
- It generates oxygen by adopting physical methods, with air as raw material, without the use of additives, only needing an electrical power supply, at low cost.
- It adopts efficient molecular sieve pressure swing adsorption (PSA) technology, with simple process flow and low energy consumption.

2 SECURITY OVERVIEW

2.1 Safety precautions

- This product cannot be used as life support for critically ill patients who require additional care.
- Oxygen therapy can be harmful under certain conditions. The healthcare professional must monitor oxygen flow and absorption time.
- Patients with severe carbon monoxide poisoning should not use this product.
- In anticipation of possible power outages or malfunctions of the oxygen concentrator, other backup oxy-
- gen supply devices (e.g. oxygen cylinder, oxygen bag, etc.) should be available.

If the oxygen concentrator is not working properly, stop using it immediately and request technical assistance from the supplier to solve the problem.

- Oxygen is a gas involved in combustion; therefore, this equipment cannot be used where open flames or flammable substances are present.
- The power supply must comply with electrical safety regulations. The oxygen concentrator shall not be used when the protective earth terminal of the power supply does not comply with the relevant regulations, otherwise personal injury may occur.
- Turn off the power and unplug the power cord before cleaning and maintaining the oxygen concentrator.
- Unauthorised persons shall not open the equipment for maintenance.

2.2 Guidance on the electromagnetic environment

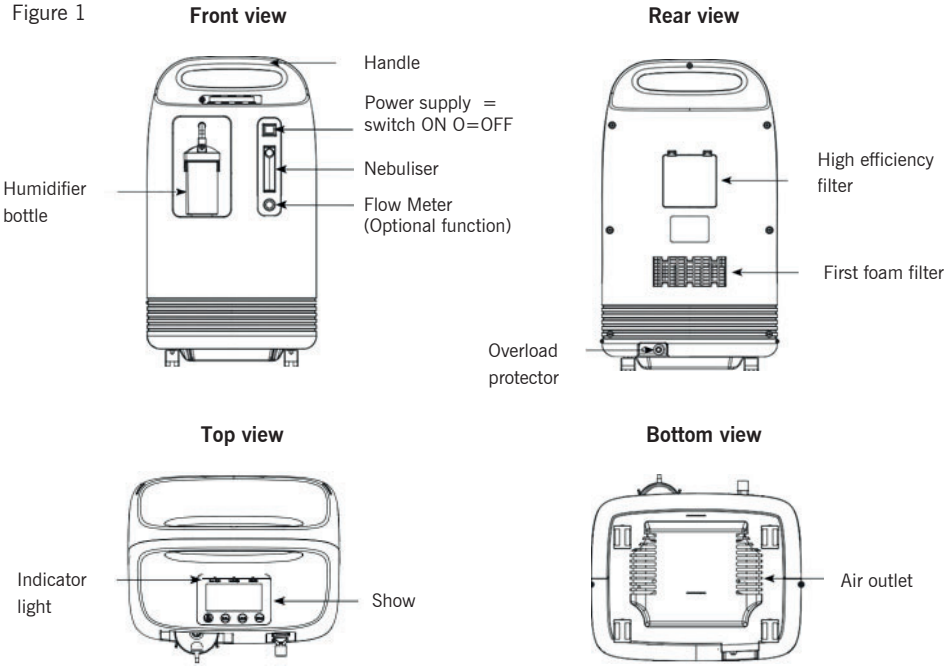
- This product is suitable for use in buildings connected to the civil low-voltage mains power supply.
- The RF energy used by this product is for internal operation only. Therefore, its RF emission is very low, with no impact on other nearby electrical equipment.
- Due to the impact of radio transmitting devices or other sources of electrical noise in health care facilities, severe interference caused by too close a distance or high transmitting power may cause disruption of this product.
- If this happens, check the places of use to find out the source of interference and take the following measures to eliminate the interference: 1) Turn off nearby devices before turning on the machine; 2) Change the direction or location of interfering devices; 3) Increase the distance between the interfering devices and this product.

2.3 Environmental protection

- Waste disposal must comply with local legal requirements.

3 STRUCTURAL FEATURES

Figure 1



Overload protector protects the machine from electrical overloads. Display: shows the operating status of the machine.
Air filter: prevents dirt, dust and lint from entering your unit, includes premium foam filter and high efficiency filter.

4 TECHNICAL INDICATORS

4.1 Environmental conditions

- Ambient temperature: 10 ºC ~ 40 ºC
- Relative humidity: 30% ~ 75%.
- Atmospheric pressure: 860 hPa ~ 1060 hPa
- Corrosive gases or strong magnetic fields must not be present in the vicinity of the equipment.

4.2 Inlet air requirements

- Impurities: ≤ 0,3 mg/cm3
- Oil content: ≤ 0,01 ppm

4.3 Product features

- Total working time: Displays the total working time across the display screen.
- Time: Adjust the oxygen uptake time as required.
- Automatic shutdown: Automatic shutdown after reaching the preset oxygen concentration time.
- Power failure alarm function.
- Low voltage alarm function
- Voice function.
- Circulation pressure failure alarm function (optional function)
- Low oxygen concentration alarm function (optional function)
- Atomisation treatment function (optional function)

5 INSTALLATION

5.1 Unpacking inspection

Open the cardboard box from the top; then open the plastic bag and lift the oxygen concentrator by grasping the front and rear handles. Carefully check for any damage caused during transport and the accessories and documents according to the packing list.

5.2 Installation precautions

- The oxygen concentrator shall be installed in ventilated indoor locations, free of dust, corrosive, toxic or harmful gases or fumes. Avoid direct sunlight. The distance from walls and other objects must be greater than 10 cm.
- The oxygen concentrator must not be installed where there is an open flame, source of fire, danger of explosion, high humidity, too high or too low temperatures. Furthermore, it must not be used in an enclosed space.
- Containers of sundries, water or oil shall not be placed on top of the equipment.
- The concentrator must not be placed on soft surfaces (e.g. beds, sofas) that may cause tilting or sagging. Avoid shutdown or decrease in oxygen concentration caused by too high a temperature due to blockage of the air inlet or outlet.
- The oxygen concentrator must be positioned carefully, otherwise it will increase the noise during operation.

■ If the mains voltage is unstable and outside the range of 220±22V, install a voltage stabiliser before using the equipment.
■ Be sure to install the battery before use, otherwise some alarm functions will be lost.
■ Connect the concentrator to a safe and qualified outlet.

6 USE OF THE PRODUCT

6.1 Precautions

■ During use, make sure that the exhaust is not obstructed at the bottom of the concentrator, otherwise internal overheating may occur.
■ When the oxygen output is less than the maximum recommended flow, the oxygen concentration reaches 90%. When the flow exceeds the maximum recommended flow, the oxygen concentration will decrease with increasing flow.
■ The concentrator shall reach the specified performance after 10 minutes of operation.
■ There will be an intermittent exhaust sound (every 6 seconds) during operation, which is normal.
■ No oil, grease or other similar substances shall be used on or near the concentrator, and no lubricants other than those recommended by the manufacturer shall be used.
■ During use, add water in a timely manner when the water level in the humidifier bottle is below the minimum level.
■ The concentrator must not be started immediately after a shutdown; wait 5 minutes to restart it.
■ When the indicated oxygen concentration is abnormal, stop using the equipment and contact the distributor for inspection and maintenance.
■ The molecular sieve will age due to use, environment, etc., causing an irrecoverable decrease in the amount of oxygen generated. When this phenomenon occurs, contact the distributor to replace the molecular sieve.
■ If the concentrator will be idle for a long period of time, be sure to unplug the power cord.
■ Before using the unit, make sure that the air inlet filter (located at the rear of the unit) is clean.
■ If liquid is spilled on the appliance, switch it off and unplug it from the mains socket before attempting to clean it.
■ If you feel discomfort or experience a medical emergency while receiving oxygen therapy, seek medical assistance immediately to avoid harm.
■ Do not share the nasal cannula or humidifier with other users to avoid cross-infection.
■ Do not leave the concentrator unattended while it is connected to the mains. Do not leave the nasal cannula or mask on surfaces such as sheets, beds or cushions; the oxygen will make the material flammable. When not in use, turn off the oxygen concentrator to prevent the oxygen concentration in the environment from increasing.
■ When the altitude, ambient temperature and relative humidity of the usage environment exceed the usage requirements specified in this manual, a decrease in oxygen concentration and shutdown of the device may occur, which will affect the quality of treatment.

6.2 Operation

The oxygen concentrator control panel is shown in Figure 2.

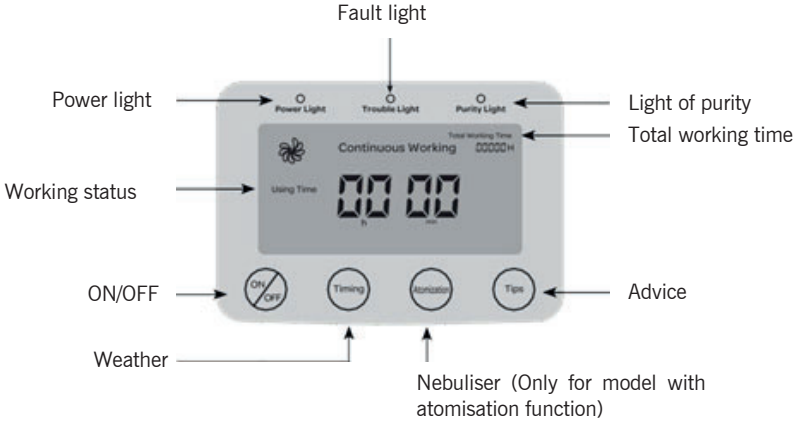


Figure 2

■Perform step 1 or step 2.

1. If not using a humidifier, connect the nasal cannula to an oxygen outlet port as shown in Figure 3.
2. If you use a humidifier, follow the steps below:

- Fill the humidifier with pure water (or distilled water), the water level should be between “Max” and “Min”.
- Lock the humidifier into the sink side, then connect the oxygen outlet port to the top of the humidifier as shown in Figure 4.
- Connect the cannula to the humidifier bottle as shown in figure 5.

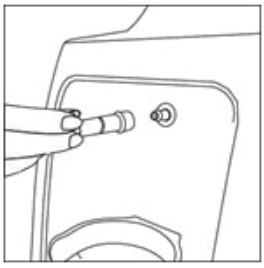


Figure 3

Figure 4

Figure 5

■Press the power switch to the ON [I] position. Initially, the LED display will illuminate.
■Press the ON/OFF button, the device will turn on and you can start breathing immediately, although it normally takes a few minutes to reach oxygen purity specifications (Figure 6). (Figure 6).
■Adjust the flow rate to the prescribed setting by turning the knob on the top of the flow meter until the ball is centred on the line marking the specific flow rate (Figure 7). (Figure 7).

Figure 6

Figure 7

■Insert the nasal cannula and you will be able to use the machine correctly.
■When not using the oxygen concentrator, press the power switch to the OFF [O] position.

6.3 Mode of operation:

■Continuous working mode
Press the “ON/OFF” button, the oxygen concentrator will start and enter the “Continuous” operating state. The LCD display shows the total running time.

■Timer working mode:
After turning on the oxygen concentrator, press “timing”, the oxygen concentrator will enter into timed working mode, for each press of “timing”, the preset time will be increased by 30 minutes (the minimum preset time is 1 hour, the maximum preset time is 3 hours); Users can preset the time as needed.

6.4 Functions:

■Advice:
Press the “Tips” button for more than 3 seconds to receive voice instructions.

■Atomise (atomisation model only):
Press the “Atomise” button, the machine will enter atomising working state.

■Automatic shutdown:
Once the preset time has been reached, the oxygen concentrator will automatically switch off.

6.5 Audible and visual alarms:

The oxygen concentrator will sound audible and visual alarms when alarms occur. Respond to alarms immediately.

■ Meaning of indicator lights/audio:

Symbols	Condition	Indicator light	Audio indicator	Description	Performance
	Oxygen concentration ≥ 82% (+3%)	Green	None	Normal oxygen output	Good condition, device works without problem
	Oxygen concentration ≥72% (+3%) and ≤ 82% (+3%)	Yellow	Intermittent sound	Low oxygen production	Contact the supplier. The user can use the machine temporarily, make sure that there is oxygen in reserve.
	Oxygen concentration ≤ 72% (+3%)	Red	Continuous sound	Excessively low oxygen output	Critical device failure, shut down the device immediately and use backup oxygen. Contact the supplier.

■ How to check that oxygen is working normally

The operator can check if the oxygen concentrator is working normally by the following methods:

- After turning on the oxygen concentrator for 10 minutes, the power indicator and oxygen concentration indicator should be green, and the fault indicator should not be lit.
- In the oxygen generation state, block the oxygen outlet of the concentrator by hand, and the flow meter should be able to return to the “0” position.

If the above two points are met, the oxygen concentrator is operating normally. If not, the oxygen concentrator is not working normally, you should contact your dealer for inspection or repair.

6.6 Principle of operation

The process flow of the oxygen concentrator is shown in Fig. 8:

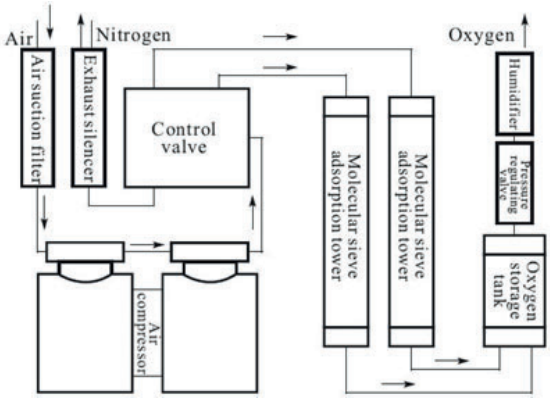


Figure 8

7 CLEANING AND MAINTENANCE

Warning: It is important to unplug the appliance before cleaning and maintenance of the oxygen concentrator.
Caution: Excessive humidity may impair the proper functioning of the appliance.

7.1 Cleaning the device

Periodically use a damp cloth to clean the outer casing of this device.

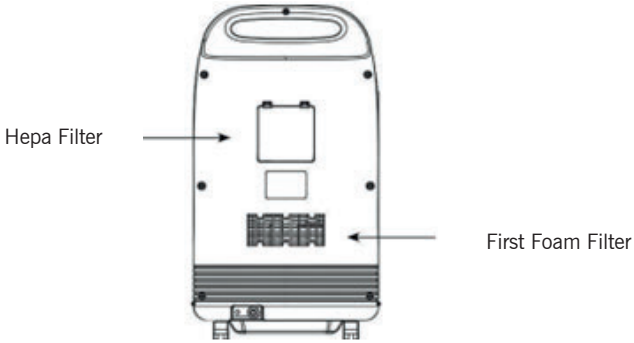
7.2. Clean or replace the filter

Cleaning and replacement of the filter is very important to protect the compressor and molecular sieve and to prolong the operating time of the oxygen concentrator. Please clean and replace it in time according to your needs.
Warning: The oxygen concentrator must not be started before installing the filter.
- Cleaning of the first foam filter.

The first foam filter should be cleaned once a week. During cleaning, remove the foam filter and rinse it with clean water, and let it dry naturally.
- Replace the high efficiency filter (called Hepa filter) (Figure 9).

When the total working time of the machine reaches 3000 hours. The user must replace the Hepa filter. Open the filter window, remove the Hepa filter and replace it with a new one.

Figure 8



7.3 Cleaning the humidifier bottle

Remove the humidifier bottle from the machine. Wash and clean it with lukewarm water. In case there is any water encrustation, rinse it with clean water after descaling.
After cleaning, mix white vinegar with hot water in a 1:3 ratio, soak the humidifier bottle in the mixture for 30 minutes to sterilize it.
During cleaning, pay attention to clean the small air hole at the bottom of the central tube of the cylinder to keep the oxygen unobstructed.

Warning: Do not remove the covers of this device. Only personnel authorized by the supplier may perform maintenance.

8 TECHNICAL PARAMETERS

Code	ZCM024
Model	OLV-10S
Flow range	0-10 l/min
Oxygen purity	93 % ±3 %
Output pressure	140 kPa
Noise level	50 dB(A)
Alarm signal noise level	>40 dB(A)
Atomisation quantity	≥0,15 ml/min (Only modes with atomisation function)
Pressure release of the air compressor safety relief valve	250 kPa ± 50 kPa
Flow range when nominal outlet pressure is 7kPa	0-10 l/min
Flow range when nominal outlet pressure is 0	0-10 l/min
Energy consumption	800 W
Feeding	100-240 V AC, 50/60 Hz
Dimensions (LxWxH)	350x250x670 mm
Weight	28 Kg

9 TRANSPORT AND STORAGE

9.1 Transport and storage precautions

■ Before transport or storage, discard the water in the humidifier bottle.
■ During transport and handling, the equipment must be kept in an upright position; it must not be allowed to be transported in an upright position.
inversion or horizontal positioning.
■ When the storage temperature is below 10 ºC, place the concentrator in a
normal working environment for 8 hours before use.
■ If the equipment has been stationary for a prolonged period of time, it should be switched on for inspection before being used again, to confirm that all functions are normal.

9.2 Requirements for the storage and transport environment

■ Ambient temperature: -20 ºC ~ 50 ºC
■ Relative humidity: ≤ 95%.
■ Atmospheric pressure: 500hPa ~ 1060hPa

9.3 Transport

The fully packed oxygen concentrator shall be protected against violent collisions and direct contact with rain or snow during transport.

9.4 Storage

Should be stored in well-ventilated indoor locations, away from strong sunlight and corrosive gases.

10 TROUBLESHOOTING GUIDE

Problem	Possible cause	Performance
The device does not work when switched on. (Acoustic alarm sounds continuously. All LEDs are off)	The plug of the power cord is not correctly inserted into the socket.	Make sure that the appliance is correctly plugged into the mains socket.
	The equipment is not receiving power from the mains socket.	Check the fuse or circuit in your socket.
	Failure of an internal part.	Connect to a back-up oxygen source and contact your supplier.
The device does not work when switched on. (The audible alarm sounds continuously, and the red light comes on)	Failure of an internal part.	Connect to a back-up oxygen source and contact your supplier.
Limited oxygen flow to the user without fault indication (All LEDs and audible alarm are normal)	The oxygen tube or cannula is defective.	Inspect and replace the elements if necessary.
	There is a bad connection with a device accessory.	Make sure that all connections are free of leaks.
The yellow LED or the red LED is illuminated and the audible alarm beeps periodically (only model with oxygen concentration alarm function).	The device has detected a high oxygen flow condition.	Reduce the flow rate to the prescribed level. If the problem persists, turn the unit off, connect a back-up oxygen source and call your supplier.
If any other problems occur with your oxygen concentrator.		Connect to a back-up oxygen source and contact your supplier.

11 PACKING LIST

- Main machine: 1
- Nasal cannula: 2
- Humidifier connection tube: 1
- Primary air suction filter: 1
- Hepa filter: 1
- Humidifier bottle: 1
- User manual: 1