## Pulse Flow Oxygen Concentrator

## User Manual

## VARON



## Foreword

## Dear users

This manual introduces the functional features, operation steps, precautions and maintenance of the product in detail.

In order to ensure that you can use this product more effectively, please read this manual carefully before use; Please keep it carefully for unexpected needs.

Please don' t open the package before you use it, otherwise it will lose the qualification of warranty.

Please note that our company reserves the right to update the products and technologies. Some illustrations in the manual may be different from what you see in this product. Therefore, please refer to the actual products you have received.

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- In order to prevent power failure or equipment failure, the oxygen users who in urgent need please assist with other standby oxygen supply devices (such as Oxygen cylinder. This product can not be used for life support or life extension! Not suitable for newborns or infants!
- Oxygen can support combustion, Do not smoke when the equipment works!
- Do not use the equipment when there are high temperature, sparks and fire in the air!
- To avoid accidents, children are not allowed to operate the equipment alone. When breathing oxygen, do not wrap the hose around the neck;:The elderly who can't act easily need to be accompanied by a guardian.
- It is forbidden to move the equipment by pulling the power cord or hose;
- When the product works, oxygen is directly separated from the air. Please do not use it in the environment of lampblack and poisonous gas;
- The product cannot be connected with other equipment which from another manufacturer;
- If any accessories are damaged or lost, please contact the supplier first;
- It is forbidden to use the adapter that is not equipped with the product or does not meet the safety requirements of GB9706 and 1-2007 standards.
- It is forbidden to use lithium batteries that are not equipped with the product.
- When the battery is not in use, please pay attention to protect the battery interface and the battery interface on the device. Do not touch the conductor or touch it directly by hand.
- Remove the battery before the equipment is discarded, and contact the relevant departments for proper disposal of the equipment and accessories according to the relevant regulations of the local government.


## 1. Product Principle

This product uses air as raw material, DC12V power supply or battery as power source, adopts high-quality French imported molecular sieve and small oil-free air compressor, and uses advanced pressure swing adsorption separation method (PSA method) at room temperature to extract high Purity oxygen; this method is a pure physical method which is stable, safe and reliable.

## 2. Scope of product application

It is only used for health and beauty, not for medical treatment.

## 3. Structural characteristics

- Full plastic shell, safe and reliable;
- With built-in battery, it can achieve outdoor oxygen absorption;
- Small mini size, light weight, can be carried around;
- It has the function of accumulating time which can understand the total time of machine use in real time;
- It has an oxygen concentration alarm function, which can prompt the user of the oxygen production status of the machine in real time;

1. Model: VP-01
2. Power supply: AC $100 \sim 240 \mathrm{~V} 50 / 60 \mathrm{HZ}$
DC 12~16.8V
3. Power: 75 W
4. Built-in battery capacity: 92 WH 6.4 AH
5. Flow gear: $1 \sim 5$ gear ( 5 gears have the highest flow)
6. Oxygen concentration: $93 \% \pm 3$
7. Noise level: $\leqslant 58 \mathrm{~dB}(\mathrm{~A})$ (the highest grade)
8. Dimensions: 7.09"*4.92"*10.63"
9. Net weight: 2.95 kg
10. Electrical classification: Class II
11. Oxygen supply mode: pulse oxygen supply
12. Machine working mode: continuous operation
13. Normal working environment:

Ambient temperature range: $50^{\circ} \mathrm{F} \sim 95^{\circ} \mathrm{F}$;
Relative humidity range: $30 \% \sim 75 \%$;
Atmospheric pressure range: $860 \mathrm{hPa} \sim 1060 \mathrm{hPa}$,
Note: When the storage and transportation temperature is lower than $5^{\circ} \mathrm{C}$, the equipment should be stored at normal operating temperature for more than 4 hours before using.

## 14. Storage and transportation environment:

Ambient temperature range: $-20^{\circ} \mathrm{C} \sim 60^{\circ} \mathrm{C}$;
Relative humidity range: $10 \% \sim 93 \%$, and there is no frost phenomenon in the environment;
Atmospheric pressure range: $700 \mathrm{hPa} \sim 1060 \mathrm{hPa}$
Note: The oxygen generator should be stored in a wellventilated room without strong sunlight, corrosive gas Inside, avoid sudden shock and upside-down during transportation.

## Installation and use

## 1. Please Check The Package When Receiving The Package

Before installing and using the product, please firstly check whether the appearance of the product is intact and whether the variety and quantity of accessories are consistent with the packing list in the user manual. If there is any defect, please contact the seller or manufacturer in time.

## 2. Outline Diagram



Figure 1-Right side view


Note: It is normal for hot air to be discharged from the heat dissipation vent. Make sure that the air space at the air inlet and outlet is smooth.


Note: The user cannot disassemble withou permission, if necessary, It needs to be returned to the dealer or professional for processing.

Attention:User is not allowed to open this part.

Figure 3-Schematic diagram of internal battery placement

## 3. Introduction To Operation Panel Function



Figure 4-Operation panel diagram

## 1. Button function introduction

- Power Button: Start or stop, Press the button for a short time and the machine will start to work, While the machine is working, press and hold the button for 3 seconds, the machine will stop working.Level: Adjust the output oxygen flow;Time: Adjustable between 0~240 minutes
- Grade: Adjust output oxygenflow;
- Time: Setting device using time, adjustable from 0~240 minutes


## 2.Display content introduction

- Accumulated hours: display how long the device has been working (unit: hour)
- Timing/Min: display the device how many minutes the device are working.

Remark: One screen showing Timing min \& Accumulated hours. The default display is accumulated hours. When pushing Timing/Min button, it is shift to Timing minutes. If there is no new instruction, it is automatically switched back to the accumulative hours display after 10 seconds.

- Gear: Output oxygen flow gear, a total of five gears (the five gears have the largest flow)

| Gear setting | 1 | 2 | 3 | 4 | 5 |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Single pulse oxygen <br> flow rate (ML) | 20 | 25 | 30 | 40 | 50 |
| Allowable error is $\pm 20 \%$ |  |  |  |  |  |

- Power indicator: Indicates the current built-in battery power, calculated using voltage value, considering the actual usage, this item is for reference only;
There are a total of four battery indicator lights on the operation panel:
$100 \%$ indicator light is on----battery power $\geqslant 90 \%$;
$75 \%$ indicator light is on----90\% > battery power $\geqq 75 \%$;
$50 \%$ indicator light is on----75\% > battery power $\geqq 50 \%$;
$25 \%$ indicator light is on----50\% > battery power $\geqq 25 \%$;
The 25\% indicator flashes ---- battery power <25\%.
- Indicator light and Alarm light :

Alarm light: The light is on when the device is operated abnormally, meanwhile will display the alarm code.

F0001--- Low Battery Warning ;
F0002- No Breath Detected ;
F0011--- High Temperature with Alarm ;
F0012--- Oxygen Sensor Abnormal Alarm ;

Low Concentration : When the oxygen concentration is lower than $82 \%$,the light is on. When the oxygen concentration is lower than $50 \%$, the light is on with alarm.

Breath Signal : When the respiratory signal of the user is detected during the operation of the equipment, the light is on. Meanwhile, the device will automatically pulse oxygen supply.

## 4.Use Guidance


cigar lighter graphic

### 4.1 Connect power

Select the appropriate power connection according to the use environment.

- Use built-in battery only

The device has a built-in battery installed by default. If the battery is sufficient, it can be turned on.

- Use AC adapter

Connect the AC adapter and the AC power cord firmly, then connect the input end plug of the AC power cord to the indoor power strip, and finally connect the output end of the AC adapter to the charging port of the device.
Connected, the power indicator on the AC adapter lights up red at this time, indicating that the power connection is normal and the built-in battery is charging; if the power indicator on the AC adapter lights up green, it indicates that the power supply is connected properly and the built-in battery is fully charged.

Requirement input terminal: AC voltage is 100~240V, frequency $50 / 60 \mathrm{~Hz}$.

- Use the car power cord in the car

Connect the input end of the car power cord to the car cigarette lighter, and then connect the output end of the car power cord to the charging port of the device. At this time, the red light of the car power cord lights up, indicating that the power supply is connected normally.

Requirement input terminal: DC voltage is DC 12~ 16.8 V , current is 6A.

### 4.2.Connect disposable oxygen inhaler

Connect the flared end of the disposable oxygen inhaler tube firmly to the oxygen outlet of the device, and wear the other end with reference to the figure below.


1. Put on the disposable oxygen inhaler tube as shown in the figure, adjust the vent to a suitable position, and push the fixing ring upward after putting it on for fixation.
2. Note that the tube of the disposable oxygen inhaler should not be kinked or blocked, so as not to cause equipment related alarms and affect normal use.
3. If you need to buy an oxygen inhaler yourself, please contact the equipment provider
4. Selection under guidance.

### 4.3. Get started

Press the power button to start the machine, use the gear button to select the gear that suits you, and you can start to inhale oxygen after wearing the disposable oxygen inhaler.

This device is a pulsed oxygen supply with a built-in breathing sensor. When the user inhales, the machine will automatically release oxygen and the "breathing signal" light will flash; when the user does not inhale, the machine will not provide oxygen.

### 4.4. Shut down

If you need to stop oxygen supply during use, press and hold the "ON key" for 3 seconds to shut down.

After use, first unplug the horn of the disposable oxygen inhaler from the oxygen outlet of the device, then unplug the power cord port at the charging port of the device, and finally unplug the power plug to cut off the power.

## I. Battery Charging

1. Due to transportation control and other reasons, the built-in battery of the device only retains power for testing when leaving the factory, or there is no power at all, so the device needs to be charged before first use.
2. The built-in battery will only be charged automatically when the AC adapter is used; if the vehicle power cord is used, it can only supply power to the device and cannot charge the built-in battery.
3. This device currently does not support the use of non-builtin batteries.
4. The AC adapter and the car power cord will share the same power socket, so only one of them can be used at a time.
5. When the power of the built-in battery is less than $25 \%$, the power indicator will flash to remind you to connect the power adapter or charger to power the device.
6. When the device is not working, the battery in the device will fully charge for about $4-8$ hours. When the device is in operation, the charging time will be extended to 9 hours.
7. When using the vehicle power cord in a car, turn on the engine. When the engine is off, the device cannot be used to prevent the battery from losing power in the car. And only the dedicated car power cord can be used.

## II. Guidelines for Using Electromagnetic Environment

In order to prevent this machine from being interfered by strong electromagnetic environment or other electrical products, please keep this machine and other household appliances at least 30 cm apart during use.

## III. Non-Professionals are not Allowed to Disassemble the Oxygen Generator Case

If professional maintenance personnel need the electrical schematic diagram of the product, please contact the manufacturer or after-sales service.

## IV. Use and Purchase Of Disposable Oxygen Inhaler

1. This equipment is a pulse oxygen supply mode. To use this equipment, it must be connected to an oxygen inhaler.
2. In order for the oxygen concentrator to correctly detect breathing and deliver pulsed oxygen, please ensure that the disposable oxygen inhaler is correctly installed and that the tube of the oxygen inhaler is not kinked or blocked.
3. Do not use oxygen inhalers that are not compatible with this device. You need to purchase a suitable oxygen inhaler under the guidance of the equipment provider or professional medical staff to ensure the normal operation of the device and the normal use of the user.

## I. Clean the Shell

Wipe and clean the outside of the machine at least once a month: first cut off the power, and then wipe with a slightly damp cotton cloth or sponge. Be careful not to let liquid penetrate into the cracks of the chassis.
After cleaning, place the machine in a ventilated place for 2 hours, and wait until the surface is completely dry before using it.

## II. Cleaning the Disposable Oxygen Inhaler

The oxygen inhaler is cleaned once a week, and the nasal suction tip on the oxygen inhaler should be cleaned after each use.

It can be soaked in white vinegar for about 5 minutes and then rinsed with water, or wiped with medical alcohol. It is recommended that the oxygen inhaler be replaced every 2 months of use. (Note: The inside of the oxygen inhaler tube should be kept dry)

## III. Battery Maintenance

If you do not use the machine for a long time, you need to charge the device once every three months to avoid the battery's long-term low power and non-use which may cause a decrease in battery life. Each time the battery is charged to $25 \%$ to $50 \%$.

| Malfunction | Problems | Solutions |
| :---: | :---: | :---: |
| Unable to Turn on | Battery is exhausted | Connect the adapter to charge the battery |
|  | Poor power cord connection | Check the power connection |
|  | Battery is not installed correctly | Reinstall the battery correctly |
|  | Machine malfunction | Contact the seller |
| No Oxygen Output | The tube of the oxygen inhaler is knotted or blocked | Replace with a new oxygen inhaler |
|  | The oxygen inhaler is not tightly connected to the equipment, causing air leakage | Reinstall the oxygen inhaler correctly |
|  | Machine malfunction | Contact the seller |
| Smell in Oxygen | The oxygen inhaler has not been cleaned for a long time, resulting in dirt in the tube | Clean or replace in time oxygen tube |
|  | The new oxygen inhaler will have a slight disinfection smell at the beginning of use, this is normal | The smell will disappear automatically after a few days of use |
|  | Machine malfunction | Contact the seller |
| Regular and Slight Exhaust Sound | The sound of nitrogen exhaust when the machine is producing oxygen | This is the normal action of the machine to produce oxygen and discharge nitrogen, which is a normal phenomenon |


| No. | Item | Amount |
| :---: | :---: | :---: |
| 1 | Oxygen Concentrator | 1 |
| 2 | AC Adapter | 1 |
| 3 | AC Power Cord | 1 |
| 4 | Car Power Cord | 1 |
| 6 | Disposable Oxygen Inhaler | 2 |
| 7 | Warranty Card/Certificate | 1 |
| 8 | Backpack | 1 |
| 6 |  | 1 |

