

Zen-O™

Portable Oxygen Concentrator
Models: RS-00500 & RS-00500C

User Manual



6. GENERAL INSTRUCTIONS BEFORE USE

A variety of accessories can enhance the portability and use of the Zen-O™ Portable Oxygen Concentrator. In addition to the device, the package contains accessories to get started and a user manual. Contact your home oxygen provider for a complete list of available accessories.

Always inspect the device and its accessories for any sign of damage before use.

Important: While the box or packaging may exhibit some damage, e.g., tears or dents, the device may still be in a usable condition. If the device or any accessory shows any sign of damage, contact your home oxygen provider.

Before you get started, check to make sure you have the following:

- Concentrator
- Battery
- Carry bag
- Accessory bag
- AC power supply
- DC power supply
- Pull Cart

6.1. ACCESSORIES LIST

Only use power supplies/adapters or accessories specified in this manual. Using accessories that are not specified may create a hazard and/or negatively affect the performance of the device.

- Rechargeable battery (RS-00501)
- AC power supply – European cord (RS-00520)
- AC power supply – United Kingdom cord (RS-00521)
- AC power supply – North America cord (RS-00522)
- AC power supply without cord (RS-00510)
- DC power supply (RS-00508)
- Carry bag (RS-00509)
- Pull cart (RS-00507)
- European power cord (RS-00504)



Fig. 2

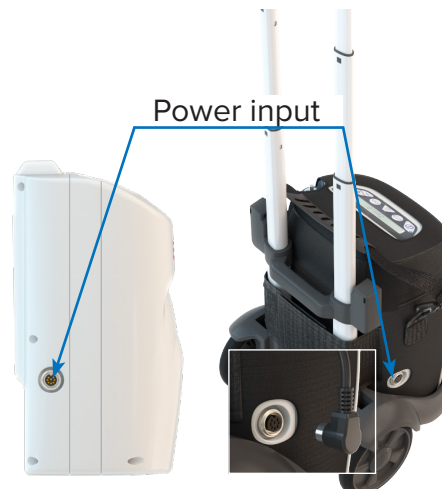


Fig. 3

- United Kingdom cord (RS- 00506)
- North America cord (RS-00503)
- External battery charger - European (RS-00516)
- External battery charger - North America (RS-00515)
- External battery charger - United Kingdom (RS-00517)
- RS-00534 – Humidifier kit

Note: Contact your provider or retailer if your specific power supply connection is not listed.

 **WARNING: Do not use the device or any accessory that shows any sign of damage.**


6.2. BATTERY


Zen-O™ Portable Oxygen Concentrator can always be used when directly connected to a power source. However, to enhance its portability, the concentrator is equipped with a rechargeable lithium-ion internal battery. Two batteries can be placed in the concentrator battery slots or one battery can be placed in either slot.

 **WARNING: Always ensure that at least one battery is inserted before using this device.**

IMPORTANT: Optional power cords are available for various global use and travel (see Section 6.1. Accessories List).

6.2.1. Charging the Battery / Batteries

 **CAUTION:** Only charge the battery in this device or in an approved charger. (See Section 6.1. Accessories List.)

- Prior to using the device for the first time, install one or two batteries as shown in Fig. 2. each battery will latch when fully seated.
- Connect the AC/DC power supply by plugging the round connector into the power input on the side of the concentrator Fig. 3.
- Plug the other end of the AC/DC power supply into a power outlet. Always use caution when inserting the power supply to a wall outlet.
- The display shows **Charging NN%** .

The charger is universal and supports a wide variety of international markets, so it can be plugged into an outlet with 100-240V AC, 50-60 Hz.

Allow the battery/batteries to fully charge before first time use. Once completely charged, the device can run for up to 4 hours with one battery or 8 hours with two batteries at setting 2 in pulse mode, at 18 breaths per minute. In continuous mode at setting 2 the device can run for up to 0.75 hours on one battery and 1.5 hours on two batteries.

IMPORTANT: Battery run time may vary based on breathing rate, age of battery, and environmental conditions. See displayed text on device for battery charge status.

IMPORTANT: Ensure power status icon (see Fig. 7) indicates power is connected. If not, check that cord is plugged in completely. (See Chapter 10 - Troubleshooting for more information.)

IMPORTANT: While the concentrator is powered from the DC power supply and operating in continuous mode at setting 2, the battery will not charge.

IMPORTANT: The DC power supply should be utilised on vehicles with the proper power output rating.


IMPORTANT: The vehicle should be running while utilising the DC adapter to power the Zen-O Portable Oxygen Concentrator.


To maximise battery life and run time, avoid letting the battery deplete and use while connected to a power source whenever possible. The battery will automatically charge whenever the concentrator is connected to a power source. You can use the device while the battery is charging. The LCD display will indicate whether the device is operating on battery or external AC power.

The fully charged battery will retain some level of charge for up to thirty days in this device when not in use - see Caution below for battery removal/storage recommendation.

IMPORTANT: Battery damage may result if the concentrator's battery is allowed to discharge completely.

IMPORTANT: After 300 charge/discharge cycles, the battery capacity will be at least 80% of its original capacity. Replace the battery when the reduced battery life is affecting your mobility.

 **CAUTION:** Remove battery if this device is not going to be used for more than seven days. Store battery in a cool, dry place.

 **CAUTION:** Check that this device operates on battery after disconnecting from the power source.

IMPORTANT: When not using the battery inside the unit, be sure to store it in the protective sleeve that was provided with the original package.

6.3. NASAL CANNULA

Only use a nasal cannula with the following specifications:

- Length: 1.2m (4ft), 2.1m(7ft), 7.6m(25ft) or 15.2m (50ft)
- High flow
- Crush resistant
- Large internal diameter bore
- Suitable for up to 15 litres per minute (lpm) at a max. pressure of 3.6 psi
- Meets substance compatibility of IEC/EN 60601-1

! A 15.2m (50ft) cannula must only be used when device is operating at a continuous mode setting.

! **CAUTION:** Only use approved accessories with this device. Refer to the approved accessories guide for a complete list of accessories and cannula approved for use with this device. Using unapproved accessories or cannula may impair the performance of this device, including flow rate or oxygen purity. Contact your distributor for updated information and accessories or if additional, optional, or replacement accessories are needed.

6.4. PULL CART

When using the device with a pull cart, attach and secure the concentrator with the straps as shown in Fig. 4.

IMPORTANT: It is recommended that patients use the pull cart to transport the device whenever possible.

6.5. CONNECTING A HUMIDIFIER

WARNING: A humidifier may only be used in continuous mode!

Do not use a humidifier while the POC is in pulse mode or eco mode!

Do not overfill the humidifier!

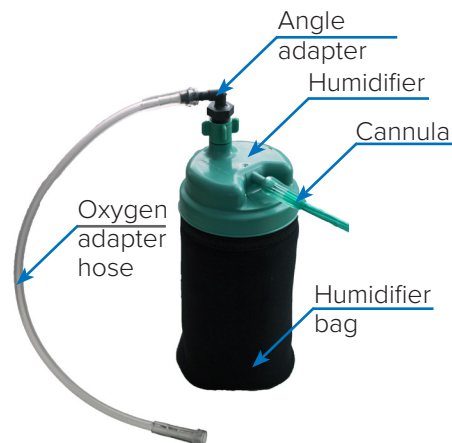
Use humidifier only if prescribed by a clinician!

To attach the humidifier:

- Remove the cover on the humidifier bottle
- Fill the humidifier with distilled water
- Fill the humidifier bottle to the level specified by the humidifier bottle manufacturer mark then replace the cover.
- Attach the angle adapter directly to the humidifier bottle and - Place the assembled humidifier bottle into humidifier bag and attach the humidifier bag to the pull cart.



Fig. 4



- Connect the oxygen adapter hose (max 50 cm) to the angle adapter and fit the other end to the oxygen outlet on the concentrator. Make sure all connections are secure.
- Connect the nasal cannula to the humidifier bottle outlet and ensure oxygen is flowing through the cannula.
- The concentrator and the humidifier should always be used in an upright position to prevent water from entering the nasal cannula.

NOTE: Using only specified cannula.

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7. OPERATING ZEN-O™

IMPORTANT: Read Chapter 3 - Safety Instructions before using this device.

Zen-O™ Portable Oxygen Concentrator is designed for ease of use, with all functions accessed through just a few buttons on the control panel.

The device should be carried in its carry bag, placed on a cart and used when positioned upright on a table or on the floor while in the carry bag. The patient should be within the recommended cannula length during use.

IMPORTANT: Except during startup and shutdown sequences, the backlight on the display screen will remain off. Pressing any button will turn the backlight on briefly. The backlight will also remain activated during an unmuted alarm condition.

7.1. CONNECTING NASAL CANNULA

CAUTION: Replace the cannula on a regular basis. Check with your home oxygen provider or clinician to determine how often the cannula should be replaced.

CAUTION: Always follow cannula manufacturer's instructions for proper use.

Connect the tubing to the cannula port as shown in Fig. 5.

To connect the cannula to the patient, position the cannula tips in patient's nostrils and pass tubing over both ears and under chin. Follow manufacturer's instructions.

Slide adapter up tubing to adjust for comfort and fit.

Once the cannula is secured, breathe normally through the nose. Zen-O™ will detect a breath and deliver the oxygen during inhalation.

IMPORTANT: Improper cannula placement may result in the device being unable to detect all respiratory efforts of the patient. Ensure cannula is connected securely and it has been fully inserted.



Fig. 5

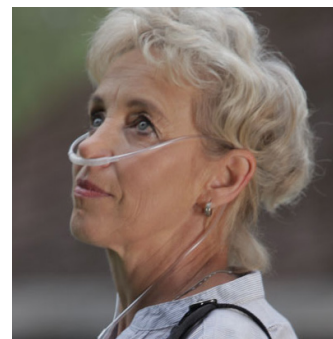



Fig. 6

7.2. TURNING ON

- To turn the device on, press the power button .
- The concentrator will chirp and the green, yellow, and red LEDs will flash once, while the screen displays the device name.



Red LED - indicates a warning danger and/or a need for urgent action








Yellow LED - indicates caution or attention required



Green LED - indicates device is on. The green LED will then stay lit.

IMPORTANT: No adjustments can be made until the startup sequence is completed.


7.3. CHOOSING A PREFERRED LANGUAGE

- While the device is on, hold down the plus  and mute  buttons together for about four seconds until it says “Language:”.
- Next cycle through the available languages using the plus  or minus  buttons.
- When the desired language is shown, press the mode button  to select. The device will change the language and go back to the normal flow screen.

7.4. ADJUSTING SETTING





IMPORTANT: After powering on Zen-O™, the startup sequence will take approximately 35 seconds. Specified oxygen level will be reached within 2 minutes of use.

- The device starts working in the previous setting.

Use the mode button  to alternate between pulse mode **Pulse X.X**  and continuous flow mode **Cont. LPM X.X** .

- In pulse mode, the device will deliver a pulse of oxygen at the beginning of each of your inhalation.
- **Auto Mode:** If no inhalation is detected for 60 seconds when in pulse mode, the “Check Cannula” alarm will be activated and the device will automatically enter Auto-Mode and continue to deliver oxygen at a rate of 18 breaths per minute. When an inhalation is detected, the device will clear the “Check Cannula” alarm and exit Auto-Mode.
- In continuous flow mode, the device will provide a continuous flow of oxygen, but will consume more power and have a shorter battery life.

Setting the mode can be done as follows:

- Pulse mode of operation can be adjusted from 1.0 to 6.0 in 0.5 increments with the  and  buttons.
- Continuous mode of operation can be adjusted from 0.5 to 2.0 in 0.5 increments with the  and  buttons.

IMPORTANT: If an air leak is suspected, leaks can be detected with a solution of soap and water applied to the cannula-concentrator connection point and looking for bubbles.

IMPORTANT: Flow can be verified by putting the oxygen concentrator in continuous mode and placing the end of the nasal cannula under the surface of a half full cup of water and looking for bubbles.

The current setting and power source (external power or battery; battery icon also shows approximate level of charge remaining) are shown on the display screen as shown in Fig. 7.

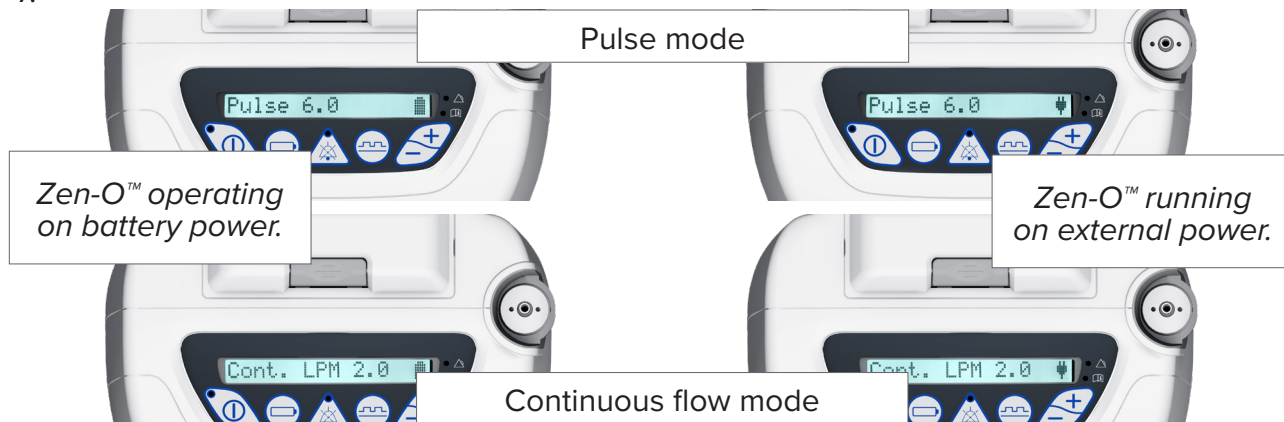



Fig. 7






7.5. ECO MODE

While the Setting screen is shown, press and hold the Battery button for approximately four seconds until it changes from “Pulse XX” to “Eco Mode”. Press and hold the Battery button again to return to Pulse Mode. At startup, the device will always default to standard Pulse Mode.

In standard Pulse Mode, the device will give you the same amount of oxygen every breath, regardless of your breath rate. This can consume more battery power at higher breath rates. In Eco Mode, the device will deliver a fixed volume of oxygen per minute regardless of breath rate, and will give an extended battery duration.


7.6. BATTERY BUTTON


The battery button  allows you to check the status of the battery or batteries. Repeatedly pushing the button will cycle through all the information.

- First, the gauge information for both batteries (or one battery if only one is installed), will be shown **Charging NN%**  .
- Next, the gauge for just the battery in the first slot **Batt1: NN%** , then the number of charge cycles on the battery in the first slot **Batt.1: N cycles** .
- Finally, the gauge and charge cycles for the battery in the second slot is shown **Batt2: NN%**  **Batt.2: N cycles** .

If there is no battery in one of the slots, then a question mark will be shown instead of the fuel gauge and number of cycles. After the fifth push of the battery button, the display will alternate back to the main screen showing the current flow setting. It will also automatically exit the battery status menu and go back to the main flow setting display after approximately 15 seconds of no buttons being pushed.

7.7. RESPONDING TO ALARMS

 **CAUTION:** If you are unable to hear or see alarms, do not have normal tactile sensitivity, or cannot communicate discomfort, consult your clinician before using this device.

Pressing the alarm mute button  at any time will silence the buzzer. The length of the mute period depends on the severity of the alarm (see Chapter 9 - Alarm Indicators). During this mute period, the mute LED will remain illuminated, indicating the alarm buzzer is muted. Push the mute button again to un-mute alarms. Pressing the mute button when there is no active alarm will mute any future medium or low priority alarms for eight hours. See Chapter 9 - Alarm Indicators and Chapter 10 - Troubleshooting for additional information on alarms.

IMPORTANT: The alarm system is tested during the startup sequence. You should see all alarm lights briefly turn on and the audible alarm indicator chirp. If alarms are suspected of mis-operating, contact your distributor for verification that alarms are working correctly.

7.8. TURNING OFF

 **CAUTION:** Always turn off this device when not in use.

To turn the Zen-O™ Portable Oxygen Concentrator off, press and hold the power button. The device will chirp and the screen will display a shutdown message **Shutting off** for approximately five seconds, then go into low-power mode.

IMPORTANT: Do not disconnect the AC power supply and remove the battery at the same time while the unit is running. Always use the power button to turn the device off. Wait until the device has completely shut down before disconnecting from power and removing the battery.