PrecisionMedical

liveACTIVEFive®

# Portable Oxygen Concentrator

# Service Manual

**Model PM4155**

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# Contents

# Preface

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This manual is intended to guide and help a qualified service technician in the safe handling, service, and repair and performance verification of the PM4155 “Live Active Five” Portable Oxygen Concentrator. A qualified service technician should be trained in the safe handling of oxygen equipment and understand its inherent dangers.

DO NOT attempt to use or perform any service function on the PM4155 “Live Active Five” Portable Oxygen Concentrator unless you have read and understand this manual as well as the User Manual.

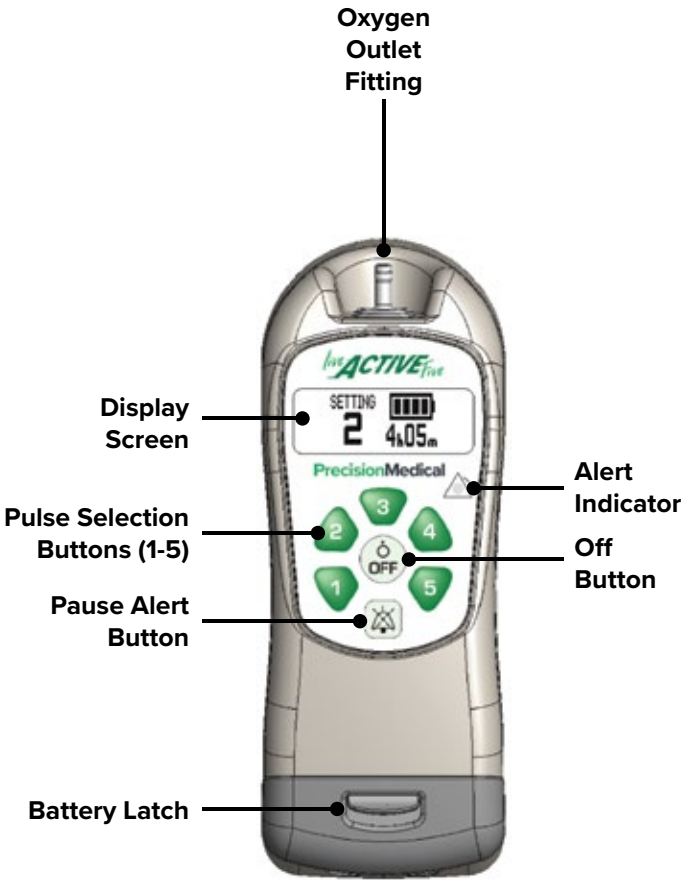
## Definition of terms

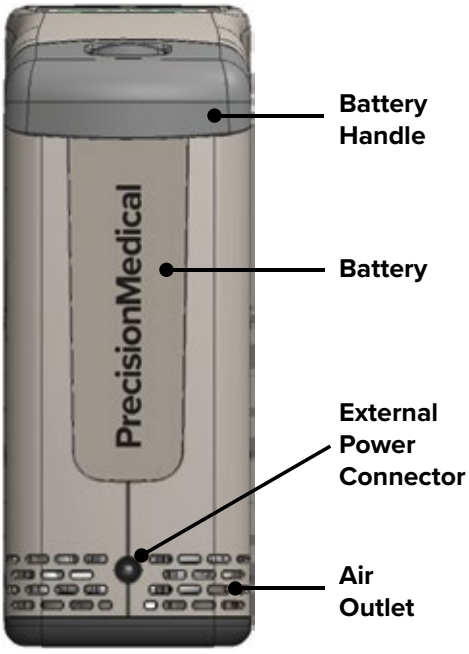
PM4155 “Live Active Five” Portable Oxygen Concentrator

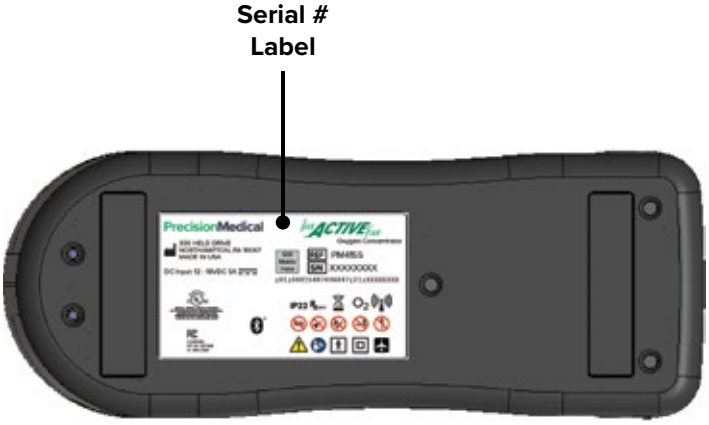
## Safety information - Warnings and Cautions

| | |
|---|---|
| WARNING | Indicates that personal safety of the patient may be involved. Disregarding a warning could result in significant injury. |
| CAUTION | Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. |

# Component Description

# General Disassembly

**Tools and equipment required:**

- #1 Phillips screwdriver

1. Remove battery (508561) from unit
2. Place unit upside down on a level surface
3. Using screwdriver, take out 5 bottom screws (507128) and place to the side
4. Take bottom case (508535) off of unit and place to the side
5. On back of unit, gently pry open the two side case pieces. Only pry open the back of the case.
6. Slide side panels off of unit and place to the side.
7. Flip unit right side up.

# Sieve Bed Assembly Replacement (508697)

**Tools and equipment required:**

- #1 Phillips screwdriver

## Disassembly

1. Turn concentrator off, and remove the battery and external power from unit.

2. Turn unit upside down, and place on soft surface. Remove screws and bottom cover.

3. Pull upward on the Pull String Loop while holding the device down to remove sieve bed assembly.

## Reassembly

1. Remove 4 plugs from new sieve bed assembly and slide it into the concentrator.

2. Gently push until sieve bed replacement is fully seated, flush with bottom surface. Replace bottom cover and secure screws.

3. Turn unit upright and insert battery. Gently push until battery is locked in place.

## Registration

1. Press and hold the Audio Pause button to enter the menu.
2. Press the 5 button to navigate to the Sieve Beds option.
3. Press the 3 button to select the Sieve Beds option.
4. Press the 3 button again to register the sieve bed assembly.
5. “Done” will appear on the screen once completed.
6. Press the Audio Pause button to exit the menu.

# Air Outlet Filter Replacement (508583):

**Tools and equipment required:**

- Hex (Allen) wrench

## Disassembly

1. Remove cannula.
2. Using a clean hex (Allen) wrench, carefully remove the outlet by unscrewing it counter-clockwise.
3. The filter will be visible in the rear of the outlet once it is removed.
4. Remove the filter and inspect the outlet to make sure it is free of debris.

## Reassembly

1. Install a replacement filter.
2. Carefully screw the outlet fitting back into the recess clockwise. Take care to squarely screw the nozzle fitting into the threads. Do not over tighten.

# PC Board Replacement (508552):

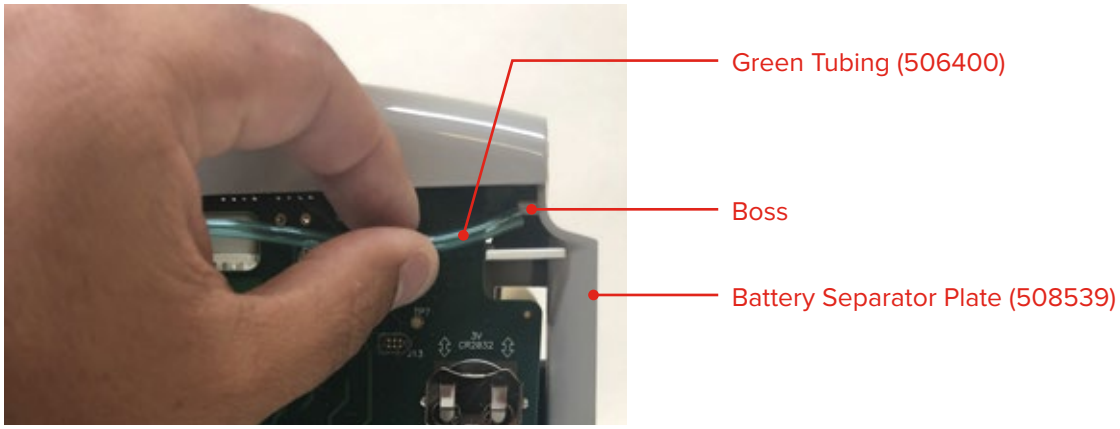
***Ensure to follow Electrostatic Discharge procedures to avoid damage to electronic components**

**Tools and equipment required:**

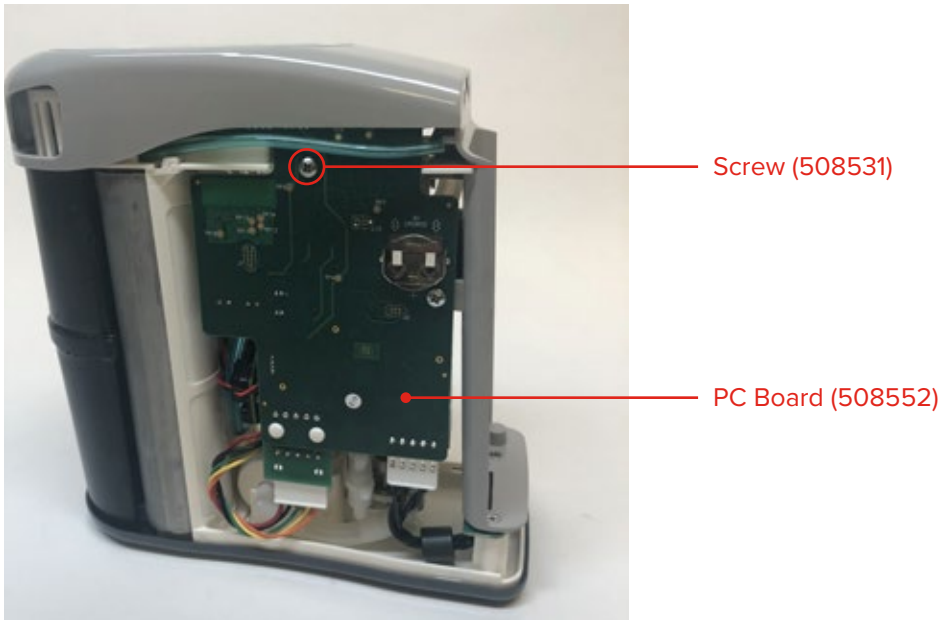
- #1 Phillips screwdriver
- Needle nose pliers

## Disassembly

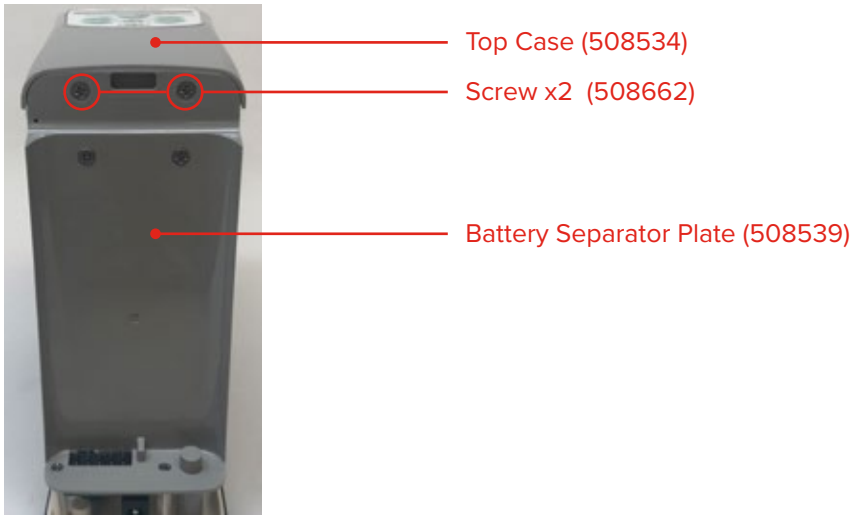
1. Follow steps 1 thru 7 of the “General Disassembly” section in this manual.
2. Pull green tubing (506400) off of the boss on the battery separator plate (508539).



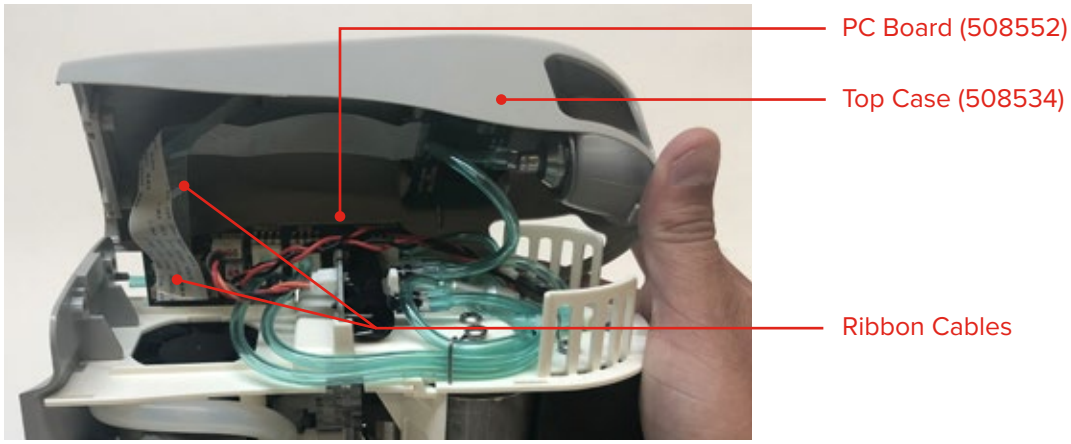

3. Remove the 2 screws (508531 & 503956) holding the PC board (508552) onto the top separator plate (508538) and the battery separator plate (508539).



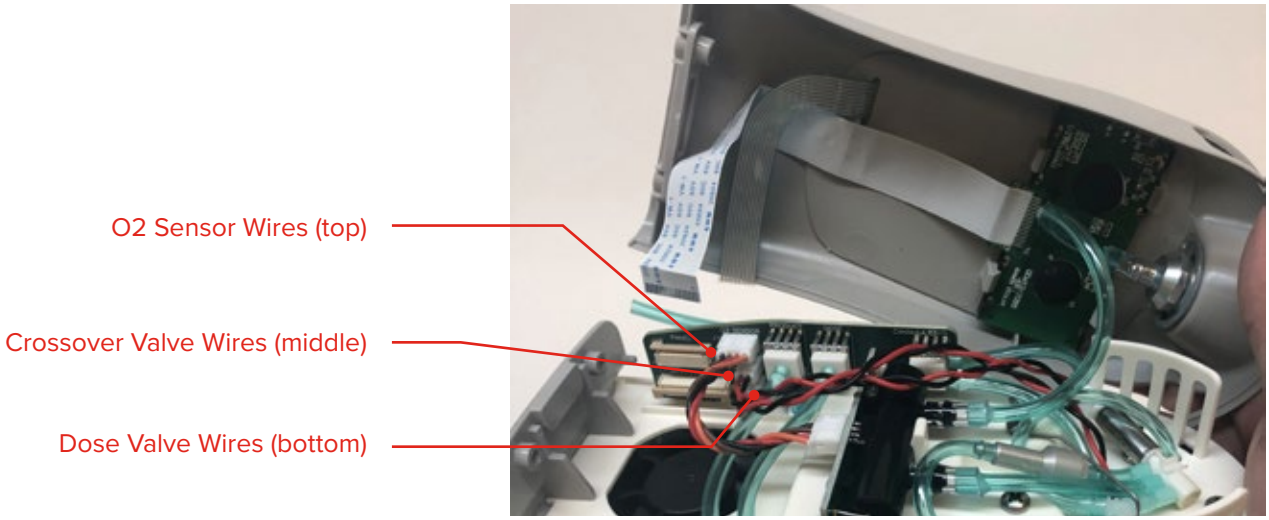
4. On back of battery separator plate (508539), remove the 2 top screws (508662) that attach the battery separator plate (508539) to the top case (508534).



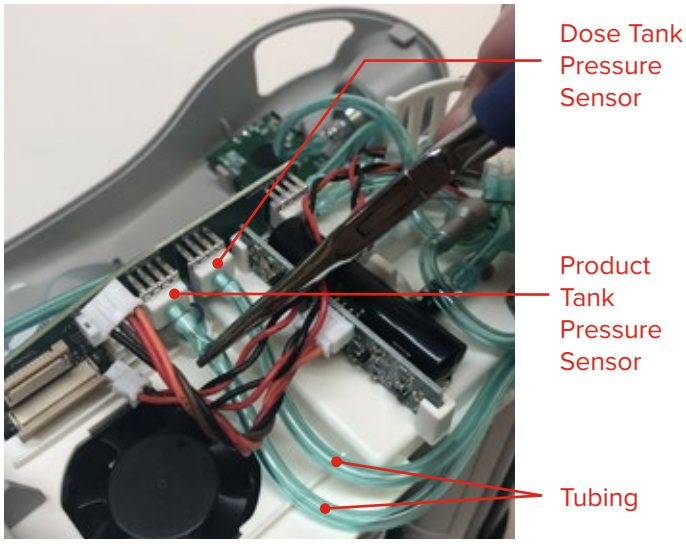

5. Carefully turn top case (508534) toward PC board (508552) and remove the 2 ribbon cables from the PC board.

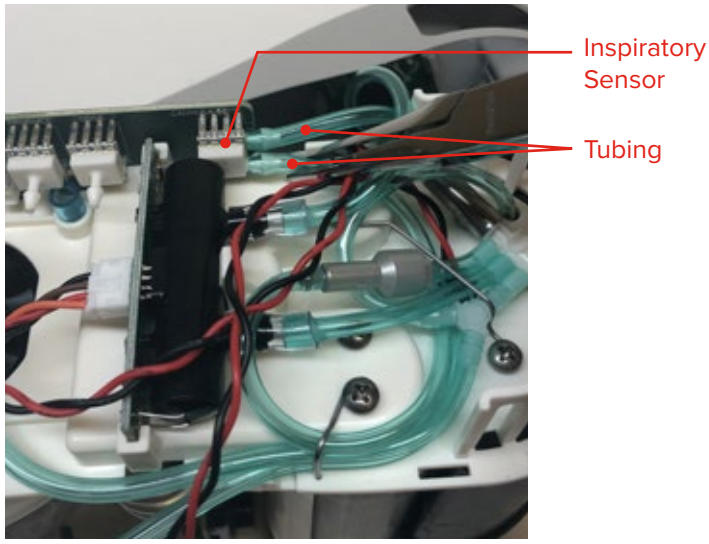



6. On the PC Board (508552), disconnect the wires that go to the O2 Sensor (508419), dose valve (518166), and crossover valve (508568).

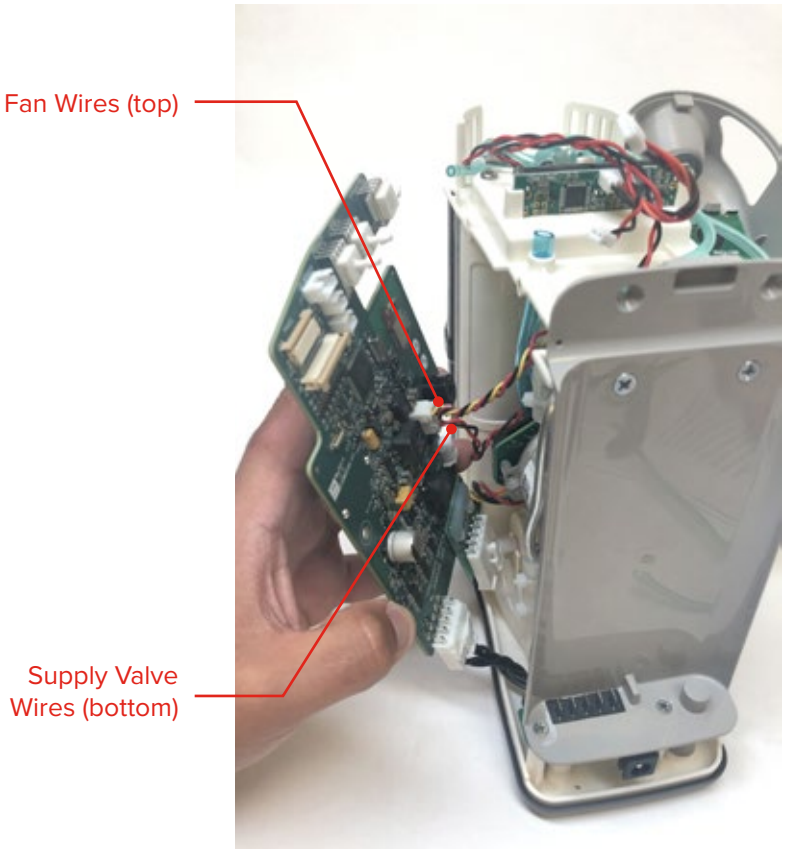


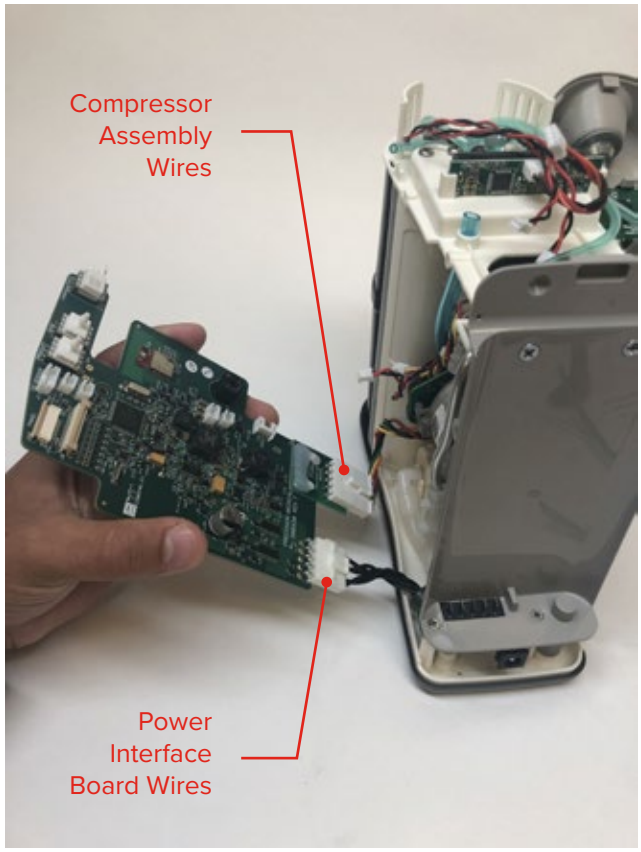
7. Using pliers, carefully remove the tubing that connects to the product tank pressure sensor and dose tank pressure sensor on the PC board (508552). Also remove both tubing pieces from the inspiratory sensor on the PC Board (508552).




8. Pull the PC board away from the unit and disconnect the wires from the fan (508575) and supply valve (508527). Disconnect the wires from the compressor assembly (508525) and power interface board (508553) on the bottom of the PC board.




9. PC board (508552) should be able to be removed from unit.

## Reassembly

1. With new PC board, connect the wires from the compressor assembly and power interface board to the bottom of the PC board.
2. Connect the wires from the fan and supply valve.
3. Attach the board to the unit by screwing in the screw (508351) that holds the PC board (508552) to the top separator plate (508538). Then screw in the 2nd screw (503956) that holds the PC board (508552) to the battery separator plate.
4. Connect the 2 tubes for the inspiratory sensor on the PC board. Connect the tube from the inspiratory sensor onto the boss located on the battery separator plate (508539). This tube should go across the outside of the PC board.
5. Connect the 2 tubes for the product tank pressure sensor and dose tank pressure sensor on the PC Board.
6. Connect the wires from the O2 Sensor (508419), dose valve (518166), and crossover valve (508568) to the PC board (508552). Make sure wires are above the tubing for the product tank pressure sensor and dose tank pressure sensor or else they may fall into fan.
7. Reconnect the ribbon cable for the control panel (508528) first; then reconnect the ribbon cable for the LCD display (508556).
8. Place top case (508534) back in place, making sure the tab in the front engages the slot on the top separator plate (508538). Reconnect the battery separator plate (508539) to the top case (508534) by screwing in the 2 top screws (508662).

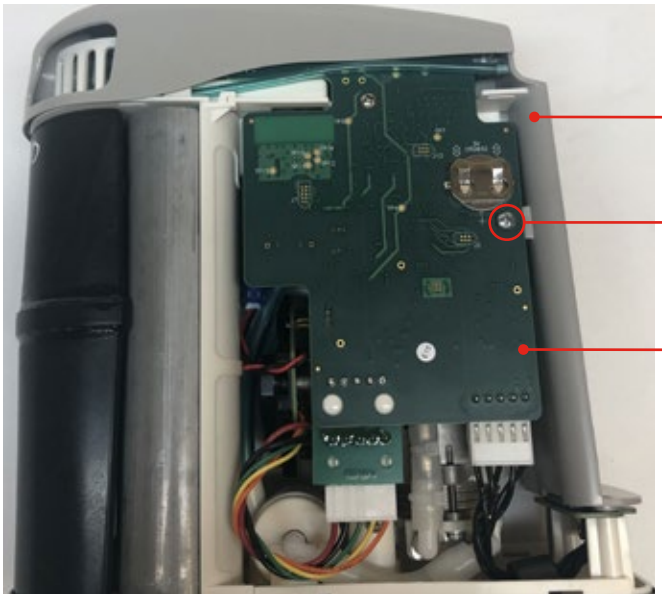
# Compressor Replacement (508525):

**Tools and equipment required:**

- #1 Phillips screwdriver
- Needle nose pliers
- Small diagonal wire cutters

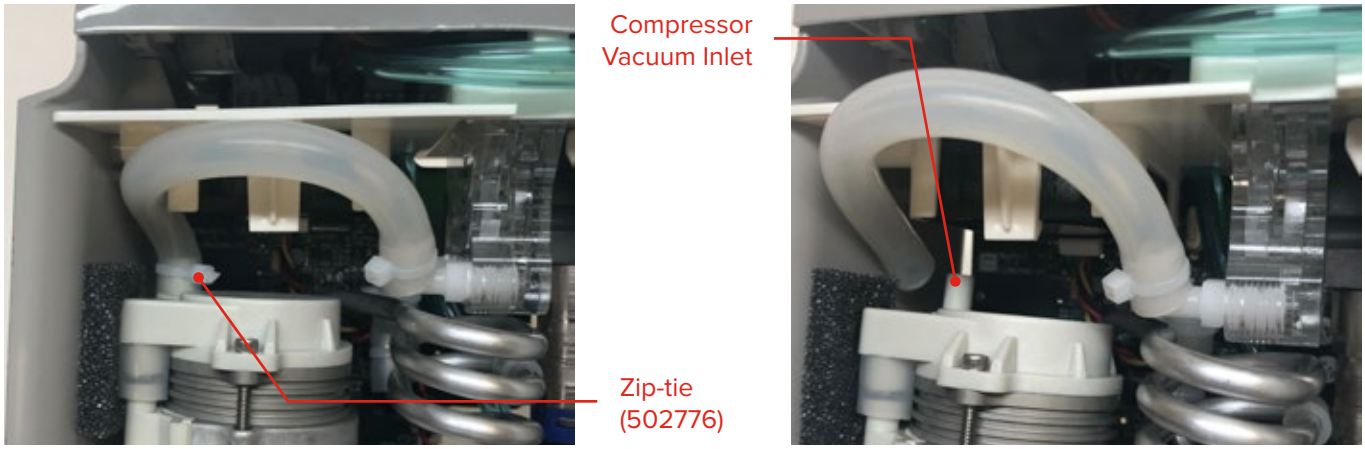
## Disassembly

1. Follow steps 1 thru 7 of the “General Disassembly” section in this manual.
2. Remove the screw (503956) holding the PC board (508552) onto the battery separator plate (508539).

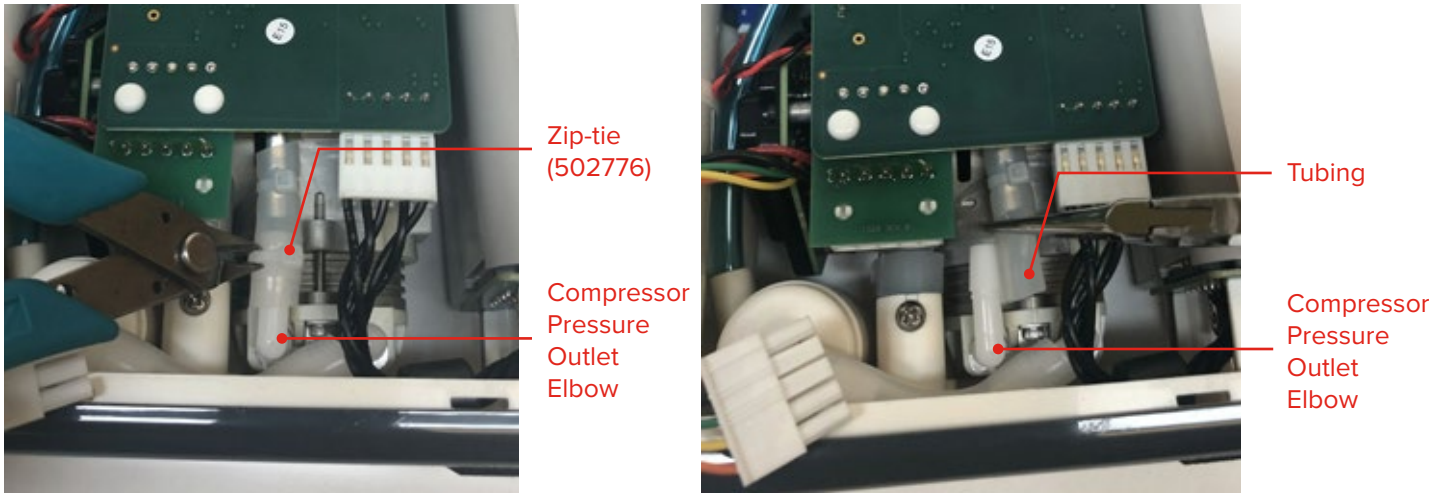



3. On the bottom of the PC board, disconnect the wires from the compressor assembly (508525).

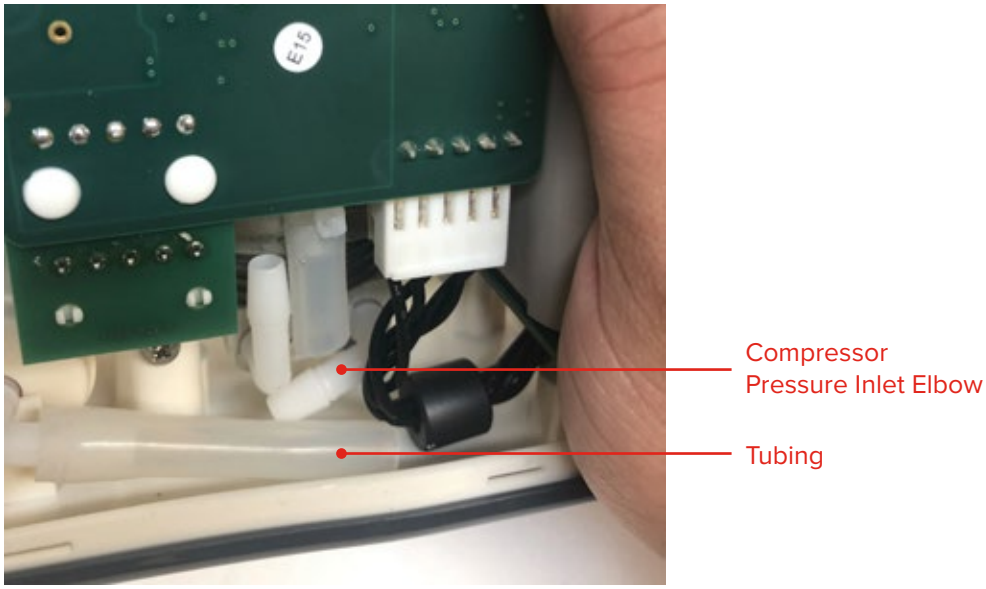
4. Cut and remove the zip-tie (502776) from the compressor vacuum inlet. Disconnect the tubing from the compressor vacuum inlet.



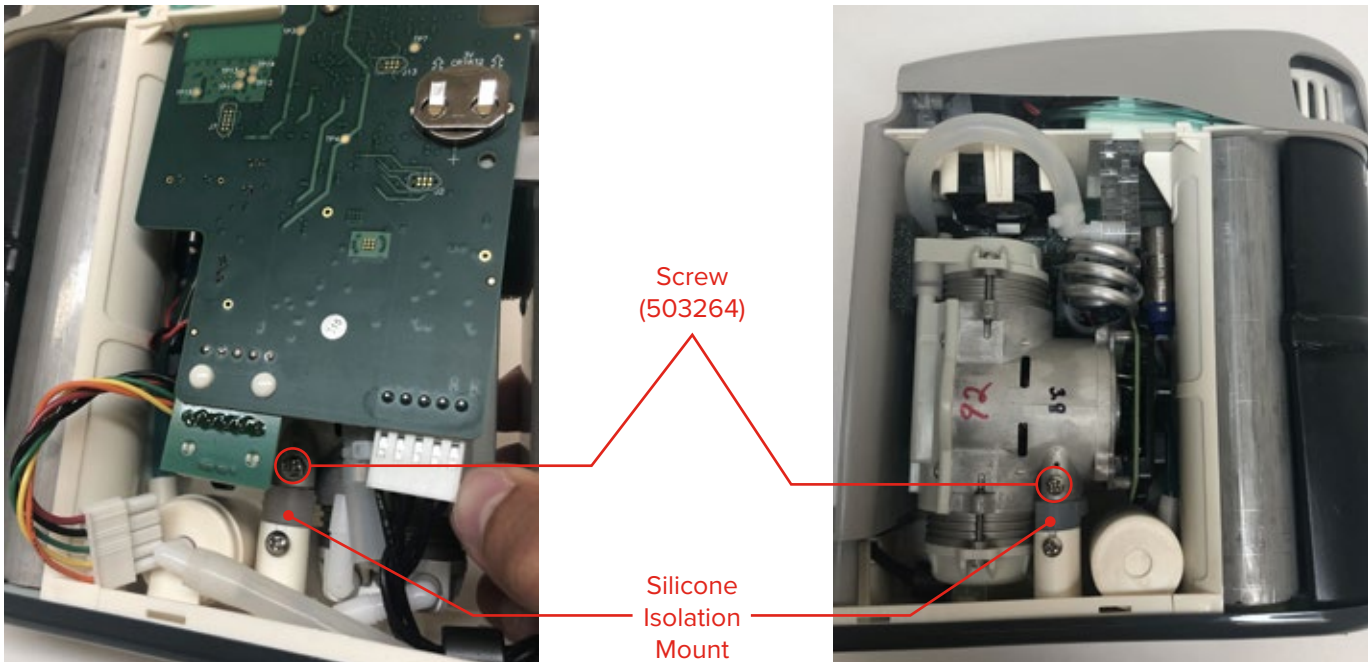

5. Cut and remove the zip-tie (502776) from the compressor pressure outlet elbow (505806). Disconnect the tubing from the compressor pressure outlet elbow (505806).




6. Disconnect the tubing from the compressor pressure inlet elbow (505806).



7. Remove the 2 screws (503264) holding the compressor assembly (508525) to the silicone isolation mount (508554).




8. Remove the compressor assembly (508525) from the silicone isolation mount (508554).

## Reassembly

1. Place the new compressor assembly (508525) onto the silicone isolation mount (508554).
2. Connect the hose from the compressor inlet filter assembly (508611) onto the compressor pressure inlet elbow (505806).
3. Connect the hose from the cooling coil (508677) onto the compressor pressure outlet elbow (505806). Place new zip-tie (502776) around the tubing on the compressor pressure outlet elbow. Make sure the zip-tie is squeezing the tube tightly.
4. Connect the hose from the manifold vacuum outlet elbow (505482) to the compressor vacuum inlet. Place new zip-tie (502776) around the tubing on the compressor vacuum inlet.
5. Press down on the compressor assembly (508525) to secure it on the silicone isolation mount (508554) and insert the 2 screws (503264) that hold the compressor to the silicone mount.
6. Connect the compressor assembly wires into the bottom of the PC board.
7. Insert the screw (503956) holding the PC board onto the battery separator plate (508539).

# Oxygen Sensor Replacement (508419):

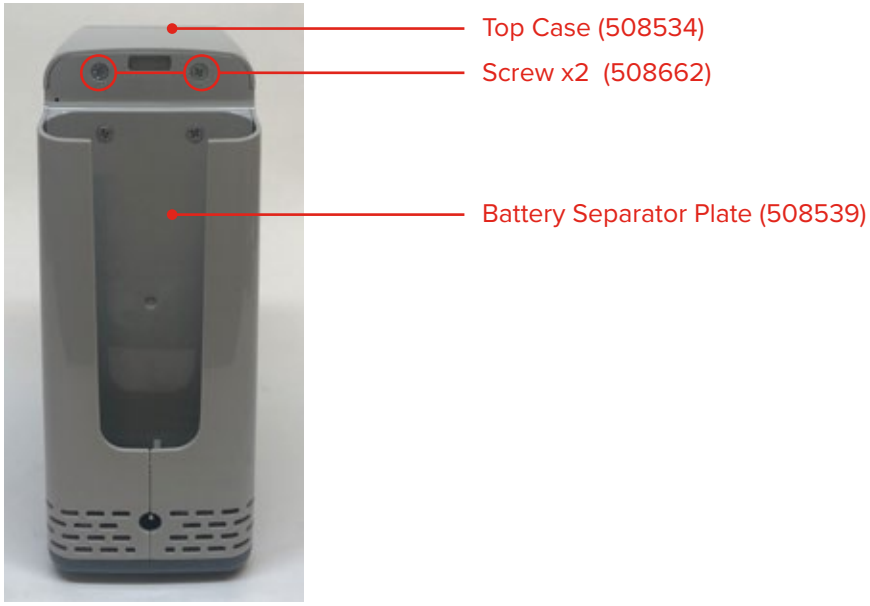
***Ensure to follow Electrostatic Discharge procedures to avoid damage to electronic components**

**Tools and equipment required:**

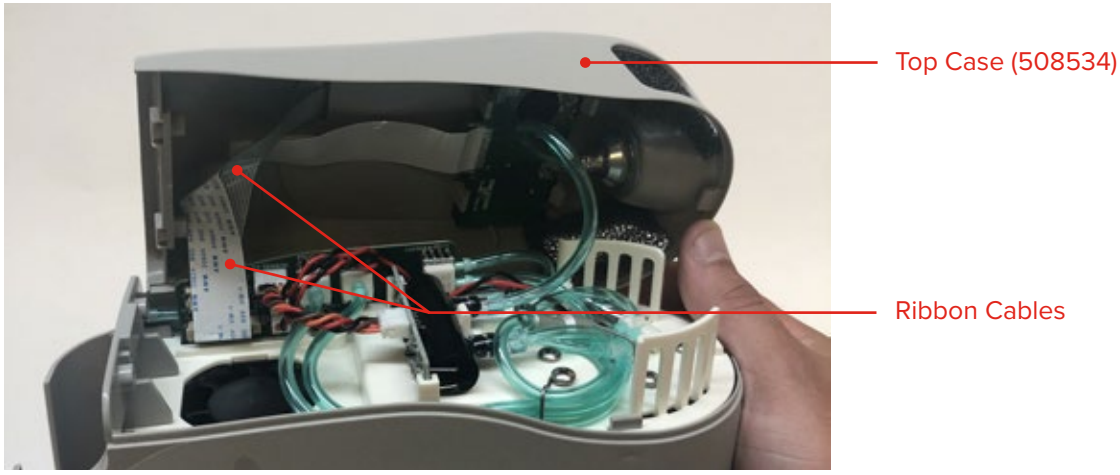
- #1 Phillips screwdriver
- Needle nose pliers

## Disassembly

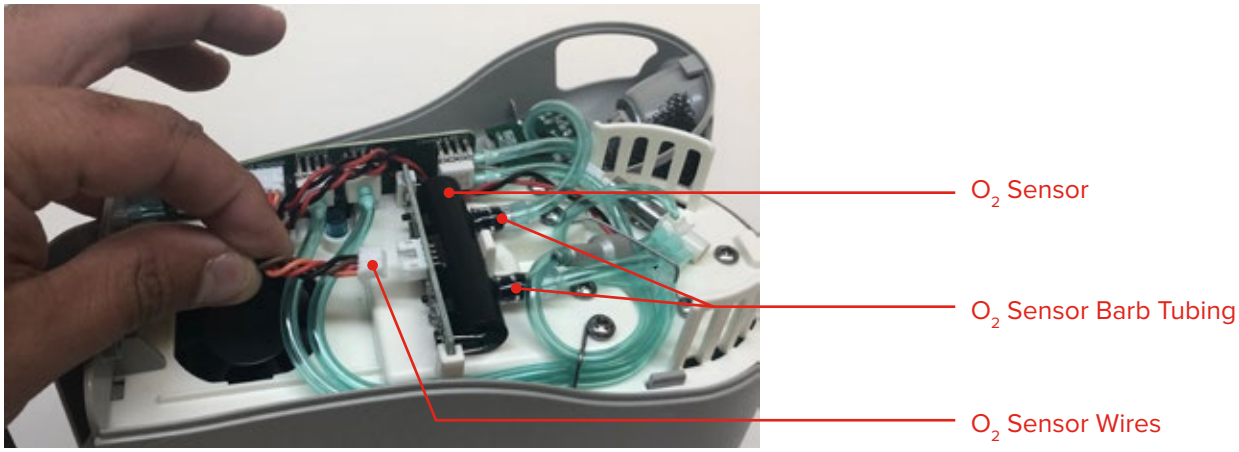
1. On back of battery separator plate (508539), remove the 2 top screws (508662) that attach the battery separator plate (508539) to the top case (508534).



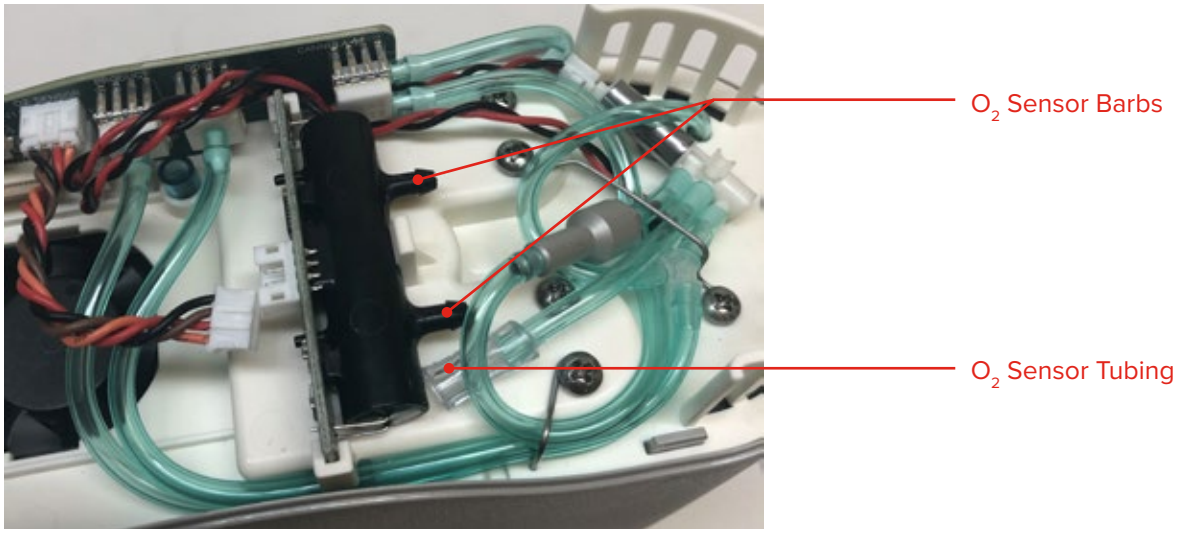

2. Carefully turn top case (508534) toward PC board (508552) and remove the 2 ribbon cables from the PC board.



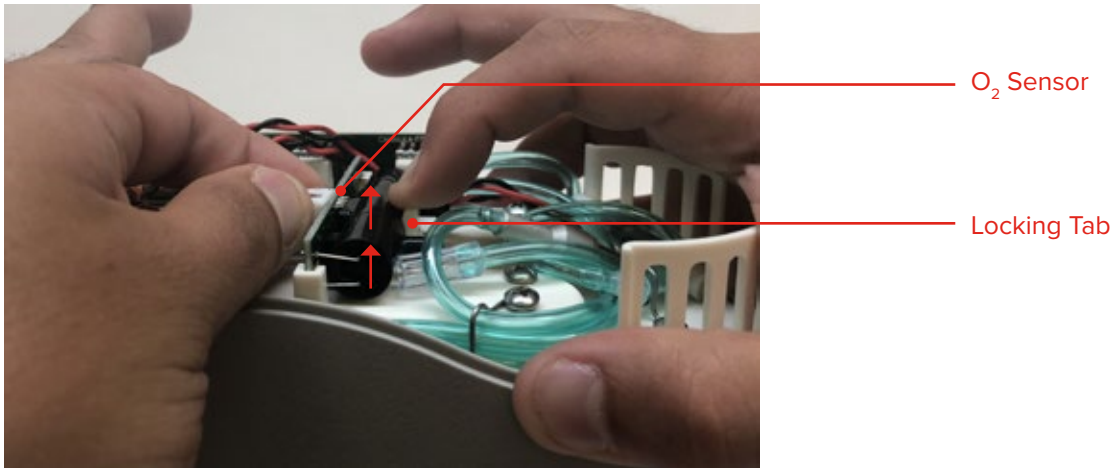
3. Disconnect the wires from the PC board to the O2 sensor (508419).




4. Disconnect the tubing from both barbs on the O2 sensor (508419).

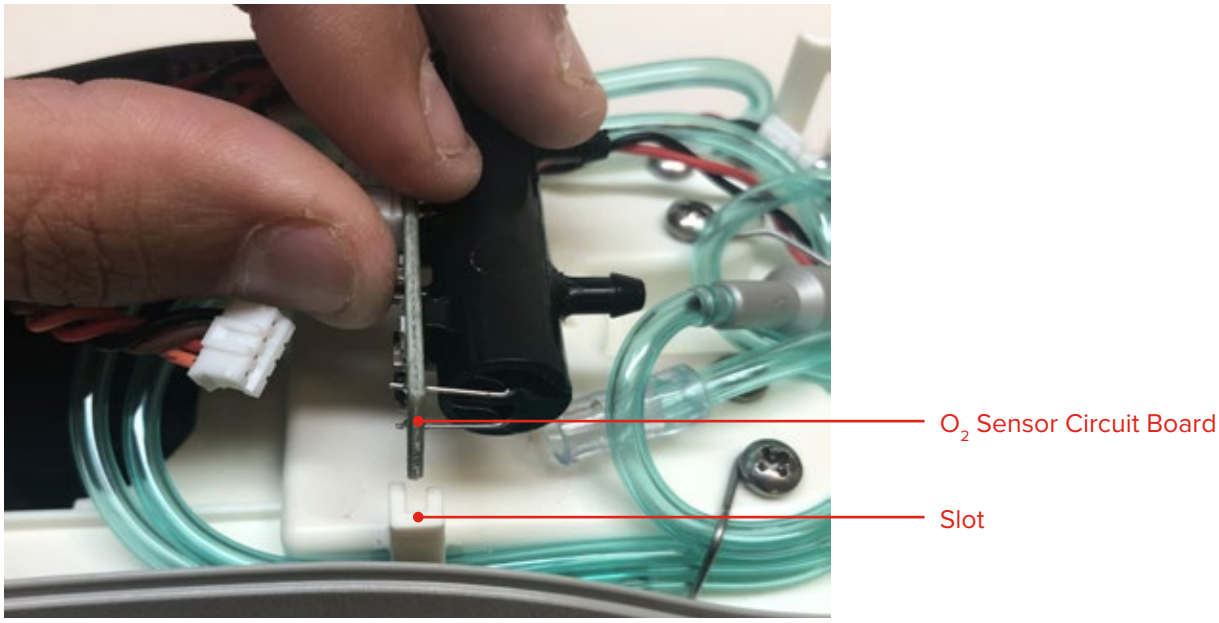



5. With one hand, pull back on the locking tab located on the top separator plate (508538). With the other hand, pull the O2 sensor (508419) up and remove.

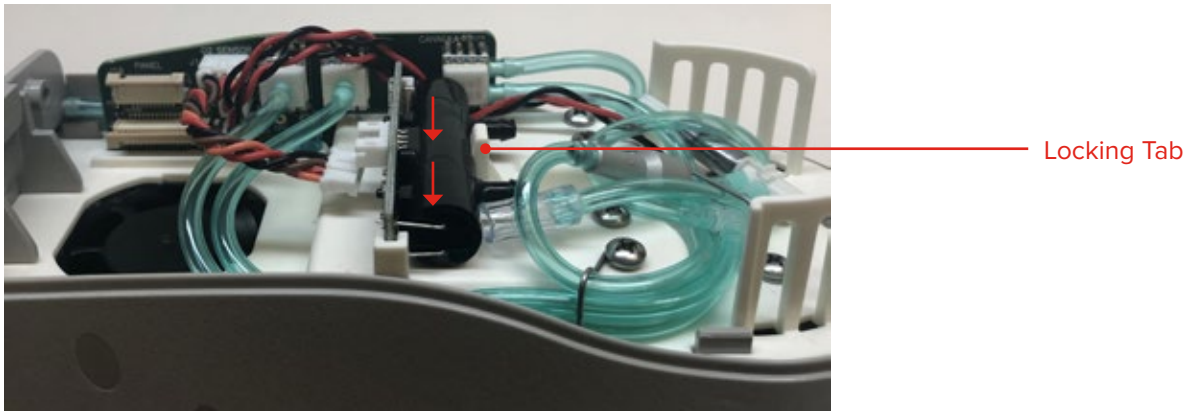


## Reassembly

1. With the new O2 sensor (508419), align the O2 circuit board with the slots in the top separator plate (508538). Make sure the wire connector is upward.




2. Slide the O2 sensor into the slots and press until the O2 sensor locks into place with the locking tab.




3. Connect the wires from the PC board to the O2 sensor.
4. Reconnect the tubing on the barbs of the O2 sensor (508419).
5. Reconnect the ribbon cable for the control panel (508528) first; then reconnect the ribbon cable for the LCD display (508556).
6. Place top case (508534) back in place, making sure the tab in the front engages the slot on the top separator plate (508538). Reconnect the battery separator plate (508539) to the top case (508534) by screwing in the 2 top screws (508662).

# Checking the Oxygen Purity

## To Put the PM4155 "Live Active Five" Portable Oxygen Concentrator in Test Mode

***Do not block the outlet while in the test mode. Damage to the device may occur and is not covered under warranty.**

1. Attach the PM4155 "Live Active Five" Portable Oxygen Concentrator to the oxygen purity test device.
2. Remove all external power sources.
3. Turn device off for 15 seconds.
4. Then press the 5 button, then 1 button, then 3 button, then off button.
5. Press device button to any flow setting. Device will continuously pulse.
6. The alarm LED on the front will blink yellow and red while in test mode. (Steps 3 & 4 must be completed within 8 seconds)
7. Attach any external power source if needed.
8. In this mode, you can go to any flow setting and test oxygen purity. The device will pulse as if it was attached to a simulator breathing 20 breaths per minute.
9. To return device to normal function, press the off button. Once the device is off, you will need to go through the above steps to get the device back into the test mode.

# Warnings

This device is not to be used for support or to sustain life. This device is intended to provide supplemental oxygen only.

This device is not intended for newborn and infant use.

Precision Medical Inc, and your equipment provider are accountable for ensuring the compatibility of the device and all of the parts or accessories used.

Use of accessories or replacement parts not listed in this Manual may cause adverse effects to basic safety or essential performance of the device and will void warranty.

If you are unable to understand the warnings, cautions or instructions, contact a health care provider or technical personnel before attempting to use this device.

Users with hearing and/or sight impairment(s) may need assistance while using this device.

Users who breathe from their mouths or through an oxygen mask should not use this device.

If you feel discomfort or are experiencing a medical emergency while undergoing oxygen therapy, seek medical assistance immediately to avoid harm.

In the event of an alert condition or if you are experiencing any signs of discomfort, connect to another oxygen source. Contact your Provider and/or Healthcare Professional immediately.

Users unable to communicate discomfort will require additional monitoring to convey the information about the discomfort and or the medical urgency to the care giver to avoid harm.

A risk of fire is associated with the use of oxygen, and is likely to result in fire or death. Do not use the device or accessories near any type of flame, sparks or flammable/explosive substances.

Smoking during use of oxygen therapy is dangerous and is likely to result in facial burns or death. Do not allow smoking within proximity of the device. If you intend to smoke, turn the device off, remove the cannula and leave the room where the cannula and the device are located.

Oxygen makes it easier for a fire to start and spread. Do not leave the nasal cannula on combustible materials such as bed coverings, chair cushions, etc. If the device is turned on, but not in use; the oxygen will make the materials flammable. Turn the device off when not in use to prevent oxygen enrichment.

Use of this device at an altitude above 10,000 ft (3048 m) or outside a temperature range of 41°F to 104°F (5°C to 40°C) or a relative humidity above 90% may adversely affect the flow rate and the percentage of oxygen and consequently the quality of the therapy.

The electrical cord and/or tubing could present a tripping or strangulation hazard.

Keep away from children and pets.

The device must be used in dry conditions. Do not submerge, operate under water, bathe or swim while in use.

Wind or strong draught can adversely affect accurate delivery of oxygen therapy. Examples: Using this device beside an open window, in front of a fan, or in the back seat of an open convertible car can affect the accuracy of oxygen delivery.

If a prescribing Healthcare Professional has determined that an interruption in the supply of oxygen, for any reason, may have serious consequences to the user, an alternative source of oxygen should be available for immediate use.

DO NOT operate the device without the inlet filter or while that inlet filter is wet to prevent damage to the device.

The device, its parts or accessories do not contain known phthalates which are classified as carcinogenic, mutagenic or toxic.

This device should only be used when prescribed by a physician. The use of non-prescribed oxygen therapy can be hazardous.

ALWAYS confirm your prescribed flow setting before use and monitor on a frequent basis.

ALWAYS keep some distance from walls, furniture, and especially curtains that could prevent adequate airflow to the device.

ALWAYS use parts recommended by the manufacturer to ensure proper function and to avoid the risk of fire and burns.

DO NOT lubricate fittings, connections, tubing, or other accessories of the device to avoid the risk of fire and burns. 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.

DO NOT cover or obstruct device ventilation. The air inlets and outlets requires proper ventilation.

DO NOT disassemble or attempt to repair. There are no user serviceable parts inside. Contact Precision Medical, Inc. for service.

DO NOT modify this device.

DO NOT reach for the device if it has fallen into water. Unplug immediately if the device has fallen into water.

DO NOT use a humidifier bottle with this device.

DO NOT use while sleeping.

# Specifications

| | |
|---|---|
| **Dimensions:** | Height: 8.4 in (21.4 cm), Width: 3.2 in (8.3 cm), Depth: 8.5 in (21.6 cm) |
| **Weight:** | 5.0 lbs (2.2 kg) with single battery and no carry bag |
| **Altitude:** | Up to 10000 ft (3048 m) above sea level |
| **Operating Temperature:** | 41˚F to 104˚F (5˚C to 40˚C) |
| **Operating Atmospheric Pressure:** | 700-1060 hPa |
| **Storage / Transport Temperature:** | -13˚F to 158˚F (-25˚C to 70˚C) |
| **Operating / Storage / Transport Conditions:** | Up to 90% non-condensing relative humidity, water vapor pressures up to 1.48 in Hg (50 hPa) |
| **Oxygen Purity:** | 87% to 95.5% |
| **Start Up Time:** | ≥ 87% O2 Concentration < 2 min* |
| **Delivered Oxygen Pulse Volume:** | Setting 1: 220 +/-15% mL/min<br>Setting 2: 440 +/-15% mL/min<br>Setting 3: 660 +/-15% mL/min<br>Setting 4: 880 +/-15% mL/min<br>Setting 5: 1000 +/-15% mL/min |
| **Breathe Rate:** | 15-40 BPM (breaths per minute) without reduction of bolus minute volume. |
| **Trigger Sensitivity:** | < -0.45 cmH2O |
| **Power:** | AC to DC Power Supply:<br>Input 100-240 VAC, 50-60 Hz (< 2.0 A)<br>Output 18 VDC (up to 5.56 A)<br>DC to DC Power Supply (Automotive):<br>Output 18 VDC (up to 6.67 A |
| **Device Battery:** | 14.8 Vdc, 6.4 Ah, 94.7 Wh |
| **Maximum Outlet Pressure:** | 12 psi (83 kPa) |
| **Battery Duration (Approximate):** | Setting 1: 6.5 hrs<br>Setting 2: 4.3 hrs<br>Setting 3: 2.7 hrs<br>Setting 4: 2.0 hrs<br>Setting 5: 1.5 hrs |
| **Sound Pressure Level (@ Setting 2):** | < 40 dBA |
| **Sound Power Level (@ Setting 2):** | < 48 dBA |
| **Audible Signal Sound Pressure Level** | > 55 dBA |
| **Applied Parts:** | Cannula/Oxygen Tubing, Oxygen Outlet Port, Carry Bag |
| **Electrical Classification:** | Class II Electrical Shock Protection, Type BF Applied Part, IP22 Ingress Protection Rating, Continuous Operation |
| **Regulatory Listings:** | The Live Active Five Portable Oxygen Concentrator has been designed, tested, and certified to the following regulatory standards.<br>ANSI/AAMI 60601-1 Ed 3.1<br>IEC 60601-1-2: 2014<br>CAN/CSA 22.2 No. 60601-1<br>ISO 80601-2-69<br>ISO 80601-2-67<br>IEC 60601-1-6<br>IEC 60601-1-8<br>IEC 60601-1-11<br>RTCA DO 160G |
| **Volatile Organic Compound (VOC) and Particulate Requirements:** | The oxygen delivered from the PM4155 “Live Active Five” Portable Oxygen Concentrator meets the following requirements for particulate levels, VOC levels, carbon monoxide levels, carbon dioxide levels and ozone levels.<br>ISO 18562-2<br>ISO 18562-3<br>21 CFR 801.415<br>EPA NAAQS<br>Particulate Matter<br>VOC Levels<br>Ozone Levels<br>Carbon Monoxide Levels<br>OSHA Permissible Exposure Limits: Carbon Dioxide Levels<br>Standard Test Method for Determination of Volatile Organic Chemicals in Atmospheres (Canister Sampling Methodology) |

* May vary based on age of device.
Specifications are subject to change without prior notice.

# Recommended Preventative Maintenance

The device is specifically designed to minimize routine preventive maintenance.

Except for tasks described below, only trained personnel should perform preventive maintenance or performance adjustments on the device and its equipment. Users should contact your provider or Precision Medical for service.

## WARNING

Prior to cleaning, ensure the device is turned off, unplug any external power sources and remove battery.

DO NOT spray or apply any cleaners directly onto the case.

DO NOT place any liquids on or near the device. If any liquid gets on the device, immediately turn OFF, unplug device from the electrical outlet, remove Battery and connect to another oxygen source.

DO NOT use harsh and/or flammable chemicals to clean the device.

DO NOT use the device until it is thoroughly dry.

The device, its parts, and accessories should be cleaned/disinfected before use on a new user.

The nasal cannula cannot be cleaned and should be disposed.

ISO 80601-2-69 (Standard for Oxygen Concentrators) highly recommends that the user cannula that delivers gas to the user from the oxygen concentrator should include a Fire Stop Check Valve to stop the flow of gas towards the user in the case that the cannula becomes ignited. The Fire Stop Check Valve should be located as close to the user as reasonably practicable.

## Cleaning the Case

1. Connect to an alternate Oxygen source.
2. Turn off the device.
3. Unplug any external power source before cleaning.
4. Clean exterior surfaces of the device with a cloth dampened with mild detergent.
5. Wipe and allow device to air dry. When not in use, store the device in a clean dry area free from grease, oil, and other sources of contamination.

## Cleaning the Air Inlet Filter and Replacement

1. Remove the filter.
2. Wash filter with mild detergent. Rinse thoroughly with water and allow to dry completely.
3. Once filter is dry, replace the filter into the case.
4. To purchase additional Air Inlet Filters 508587, contact your provider or Precision Medical.

## Cleaning and Disinfection between Users

To prevent infection and eliminate possible pathogen exchange between users due to contamination, cleaning and disinfection of the device and its accessories shall be performed by qualified personnel when used between users.

1. Remove battery and disconnect all external power from the device.
2. Dispose of and replace all accessories not suitable for multiple users including cannulas and oxygen tubing.
3. Clean all exterior surfaces using Super Sani-Cloth germicidal disposable wipes or equivalent. Remove all visible contamination from the external surfaces of the device, battery and accessories. Be sure to closely inspect and remove contamination from seams and recesses on the device that may trap contaminants. Wipe with clean paper towel to remove debris.
4. After all visible contamination is removed; use a second germicidal wipe to thoroughly wet the surfaces of the device and accessories. Allow to remain wet for 4 minutes. Use additional wipes if needed to assure surfaces are wetted continuously for 4 minutes.
5. Allow device to air dry completely.
6. Inspect the device for visible contamination. Repeat cleaning/disinfection process if necessary.

## Storage

1. Remove battery(s) prior to storage.
2. Store the device and battery(s) in a cool, dry area.

## Disposal Instructions

This device may contain substances that could be harmful to the environment and must be disposed of properly.

Follow local governing ordinances and recycling plans regarding disposal of the device and accessories.

# Troubleshooting

## WARNING

Failure to resolve an alert condition may cause the device to shut down.

## Technical Alerts Description

The device monitors various internal components and compares them to acceptable limits. An alert is generated when the acceptable limit has been exceeded.

Alerts are classified as Low Priority Technical Alert Conditions. An alert requires the user to perform an action. The user is notified of an alert condition by an audible beep every 16 seconds and flashing yellow LED light.

When an alert condition occurs, the user may press the Paused Alert button  to silence the alert and switch the LED alert indicator from flashing to continuous for a 5 minute silence period. During this silence period, if the alert condition is corrected, the LED alert indicator will turn off.

If the condition persists, the alert will reoccur and the user can push the Paused Alert button again. This cycle will repeat until the alert condition is corrected.

If an additional alert condition occurs during the silence period, the silence period ends and the alert indicator LED will flash along with an audible beep.

The specific condition that generated the alert is available by viewing the alert fault code in the Display Screen.

If operating outside the “Operating Environment Ranges,” an alert may occur and the POC may shut down.

| | |
|---|---|
|  | If the device fails to operate properly, refer to the following charts for possible causes and solutions. If necessary, contact your Provider or Precision Medical, Inc. |

**Device Does Not Turn On or Does Not Stay On**

| Symptom | Probable Cause | Solution(s) |
|---|---|---|
| Device begins to operate when powered on, but soon powers back off. | Battery power level is too low. | Check battery power level. If low, replace with charged battery or connect external power source |
| | Battery not fully seated. | Reseat battery by removing and reinstalling. |

**Battery Issues**

| Symptom | Probable Cause | Solution(s) |
|---|---|---|
| The external power icon is illuminated, but the battery charge level indicator is not flashing when the device is plugged into an external power source. | Defective battery. | Replace with new battery. |
| | External power source is faulty, or there is a loose connection. | Check connections on external power sources. |
|  | Battery is not fully seated. | Reseat battery by removing and reinstalling. |
| | Defective Battery. | Replace with new battery. |
|  | Battery is below the recommended temperature range for safe charging. | Allow battery to warm to room temperature and try again. |
|  | Battery is above the allowed temperature range for safe charging. | Allow battery to cool to room temperature and try again. |
|  | Battery is not a Precision Medical approved battery. | Use only Precision Medical Battery (508561). |

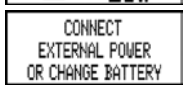
**Device Pulse Delivery Alerts**

| Symptom | Probable Cause | Solution(s) |
|---|---|---|
| Device does not deliver a pulse of oxygen when the user inhales. | Cannula tubing kinked, blocked or twisted. | Make sure the tubing is connected properly to the oxygen outlet port and that it is free of any obstructions. |
|  | User breathing from mouth. | Inhale through nose. |
| | Cannula is disconnected. | Connect cannula. |
|  <br>  | Cannula tubing kinked, blocked or twisted. | Make sure the tubing is connected properly to the oxygen outlet port and that it is free of any obstructions. |
|  | User breath rate exceeds 40 breaths per minute. | Reduce breath rate. |

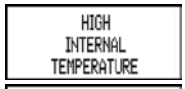
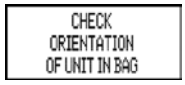
### Oxygen Concentration Output Is Low

| Symptom | Probable Cause | Solution(s) |
|---|---|---|
|  | Device is warming up. | Wait 10 minutes for the unit to deliver oxygen at the prescribed concentration. |
| | Sieve beds are at end of life cycle. | Install new Sieve Bed Replacement (508697) |
| | Device malfunctioning. | If the condition persists, change to an alternate oxygen source and contact your home care provider or Precision Medical. |

### Battery Is Near Depletion

| Symptom | Probable Cause | Solution(s) |
|---|---|---|
| Device is producing one of the following visual alerts.<br>  <br>  | The installed battery is low and needs to be charged. | Replace installed battery with a fully charged battery.<br>Connect device to an external power source. |

### Device Overheats

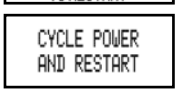
| Symptom | Probable Cause | Solution(s) |
|---|---|---|
| Device is producing the visual alert:<br>  <br>  | Device air inlets or outlets may be blocked. | Move any objects that may be blocking the device. Connect to an alternate oxygen source. Turn off the device and allow it to cool before continuing to use.<br>Check that the device is placed in the carry bag correctly.<br>Clean or replace inlet filters. |

### Display Not Working

| Symptom | Probable Cause | Solution(s) |
|---|---|---|
| Blank Display / Device Shuts Down | Electrostatic discharge | Unplug device from external power. Remove battery. Wait minimum of 1 minute. Re-insert battery. Turn device on. |

### Shut Down Alerts

The concentrator shuts down when the alert conditions in this section occur.

| Symptom | Probable Cause | Solution(s) |
|---|---|---|
| “SHUT DOWN FAULT CODE XX” appears on screen. One audible beep every 16 seconds YELLOW alert indicator flashing. | | If your screen displays a fault code, the device will instruct you to press any button to restart. |
| “SHUT DOWN FAULT CODE XX” appears on screen.<br>  <br>  <br>  | Technical Alert | If your screen displays a fault code, follow directions on the screen. You will be instructed to press any setting to restart device or cycle power and restart device. If instructed to cycle power, remove battery and external power. Reinstall battery and external power into device. Press setting to restart. |
|  | | If there are 5 unsuccessful restart attempts in less than 5 minutes, service of the device will be required. Connect to an alternative oxygen source and contact your home care provider or Precision Medical. |