

# ImPulse™ Select OCD System Patient Manual



401 Creekside Drive • Buffalo, New York 14228-2085 USA



**t**able of contents

Components ..... 1

Features ..... 2

Introduction ..... 3

    Maximizing Delivery with ImPulse Select ..... 4

Initial Set Up ..... 4

Safety ..... 5

Description of Parts ..... 7

How to Operate the Unit

    Oxygen Cylinder Connection ..... 8

    Testing and Replacing Battery ..... 10

    Proper Setup for Oxygen Usage ..... 12

    Alarm Light Indicators ..... 15

    Turning Off the Unit ..... 15

    Switching to Continuous Flow ..... 16

ImPulse Select as a Portable Unit ..... 17

Proper Care and Maintenance ..... 18

Troubleshooting Guide ..... 20

Equipment Provider Information

    Specifications ..... 21

Limited Warranty ..... 22

*The Ambulatory Oxygen System  
for Complete Patient Mobility*

# Components

The complete ImPulse™ Select OCD System includes the following, as shown in Figure 1 below:

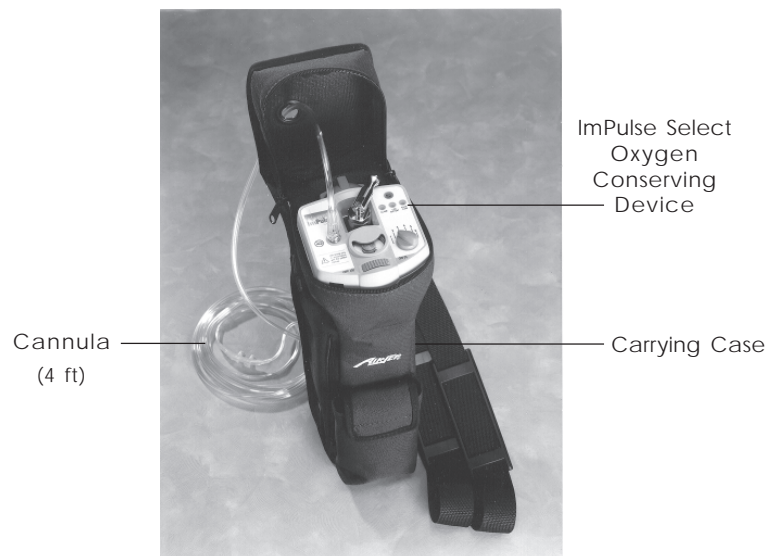


Figure 1

Not shown:

- (1) One Alkaline “D” Battery
- ImPulse Select OCD System Patient Manual

# *f*eatures

- Easy to operate with just one “D” alkaline battery. Cannula connects in seconds. Patient-accessible controls.
- Oxygen-conserving technology allows smaller cylinders to last longer.
- With ImPulse Select, the “D” battery provides greatest ambulation time. For most patients, 3–6 months.
- Pulse modes offer up to 6 lpm efficiency.
- Fail-safe electronic circuitry and alarm system provide added assurance of proper unit function and oxygen delivery.
- Audible alarm when device does not detect inhalation (inspiration), if cannula is disconnected or tubing kinked, or if the unit is inadvertently left on when not in use.
- Only minimal maintenance required.
- Designed for maximum patient mobility.
- Economical way for ambulatory oxygen patients to enjoy freedom of movement.
- Developed to enhance quality of life for patients using supplemental oxygen.

# *i*ntroduction

ImPulse™ Select is an electronic oxygen conserving device (OCD) that provides convenience and mobility to patients with therapeutic oxygen needs. Designed and manufactured by AirSep Corporation, ImPulse Select uses portable cylinders to provide patients with oxygen delivery at their prescribed dosages.

With this device, actual oxygen delivery to the patient occurs at or near the beginning of the breathing cycle when the patient starts to inhale.

Because ImPulse Select does not deliver oxygen during exhalation, which accounts for approximately two-thirds of the breathing cycle, it wastes little or no oxygen. This differs greatly from conventional oxygen systems, which deliver oxygen continuously. In addition, many patients are more comfortable with oxygen conserving devices than continuous flow systems because they have fewer problems with nasal dehydration, which can result from constant flow into the nostrils.

## Maximizing Delivery with ImPulse Select

ImPulse Select's advanced electronics enable it to respond effectively to a patient's respiratory cycle. ImPulse Select senses the start of inhalation. Because only a small amount of oxygen is actually required to oxygenate the blood effectively, ImPulse Select delivers the precise amount when it is most beneficial: at the beginning of inhalation.

ImPulse Select quickly delivers a pulse of oxygen compatible with your breathing rate and automatically adjusts with any change in your breathing cycle — depending on your prescribed oxygen requirement.

This method of oxygen delivery has been clinically tested and determined to meet oxygen needs satisfied by comparable flow settings on continuous flow units up to 6 lpm.

### Initial Set Up

As part of your initial set up with ImPulse Select, your clinician may choose to assess your saturation level through pulse oximetry. This helps to ensure proper titration while using the oxygen conserving device.

# Safety

ImPulse Select meets applicable safety and environmental regulations. This assurance means you can fully enjoy all the benefits of this device. However, with all electronic devices and applications that require oxygen, normal care and precautions must be followed.

Before you attempt to use this oxygen conserving device and a portable oxygen cylinder, read all warning and caution notes in this section of the manual. Contact your Equipment Provider should you have further questions.



## Warnings

---

Federal law restricts this oxygen conserving device to sale by, or on order of, a licensed physician. This device must be used only under the supervision of a licensed physician.

High purity oxygen promotes rapid burning. Do not allow smoking or open flames within five feet of this device, the portable oxygen cylinder, or any oxygen-carrying accessory.

If you observe that the oxygen conserving device is not working properly or you feel ill, contact your Equipment Provider and/or physician immediately.

Although oxygen is a non-flammable gas, it vigorously supports combustion. Use no oil, grease, or petroleum-based products on or near the device or any oxygen source.

Use this device and the oxygen cylinder only with clean, dry, oil-free hands.

Observe all federal and/or international regulations regarding travel by air, sea, or land vehicle while using and/or transporting oxygen cylinders.



## Cautions

---

Maintain a backup supply of oxygen, and periodically check the content gauge on the unit, which monitors the consumption of oxygen in the cylinder.

Do not use this device with a humidifier or expose it to water or other liquids.

Do not expose the device to extreme temperatures.

Do not use this device

- with the batteries removed.
  - if the oxygen tubing is kinked or obstructed.
  - if the device was tampered with or opened by anyone other than your Equipment Provider.
-

# d...escription of parts.....

As you can see in Figure 2 below, all parts are within easy reach and allow you to adjust your ImPulse Select unit as necessary. Follow your clinician's instructions before making any change to the flow selector setting.

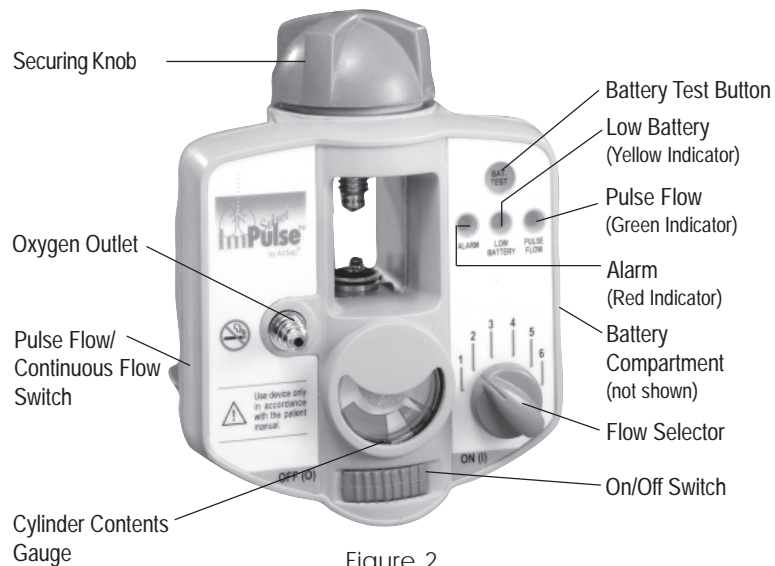


Figure 2

# How to operate the unit

## Oxygen Cylinder Connection

---

### Warnings

---

High purity oxygen promotes rapid burning. Do not allow smoking or open flames within five feet of this device, the portable oxygen cylinder, or any oxygen-carrying accessory.

Use no oil, grease, or other petroleum-based products on or near the device or any oxygen source.

Use this device and the oxygen cylinder only with clean, dry, oil-free hands.

Oxygen in the cylinder is under high pressure. Do not open the cylinder valve without the ImPulse Select unit properly connected to the cylinder.

---

Your Equipment Provider will review proper cylinder care and connection procedures with you the first time you operate your unit.

Refer to the following steps should you need assistance with connecting your ImPulse Select unit to an oxygen cylinder.

To connect the ImPulse Select to any post-valve cylinder:

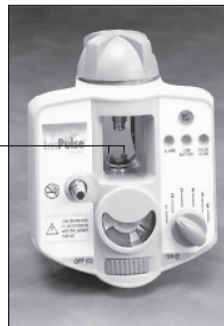
1. Loosen the ImPulse Select securing knob. To ensure a leak-tight seal between the cylinder valve and the unit, make sure the sealing washer is present in the center of the unit before installation. (Figure 3.)



Sealing Washer

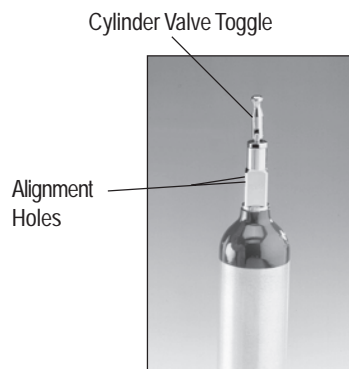
Figure 3

2. Align the two parallel alignment pins (Figure 4.) on the unit with the holes on the neck of the cylinder. (Figure 5.)



Alignment Pins

Figure 4



Cylinder Valve Toggle

Alignment Holes

Figure 5

3. Push the alignment pins into the holes on the neck of the cylinder, and hold the unit in place against the cylinder with one hand while you turn the unit's securing knob clockwise with your other hand until the unit is secured firmly on the cylinder (Figure 6).



Figure 6

## Testing and Replacing Battery

ImPulse Select requires just one 1.5 volt “D” size alkaline battery for full operation. Battery life is dependent upon the predetermined unit settings, your breath rate, and the length of daily ambulation time. Most patients experience 3–6 months of battery life. AirSep strongly recommends that you maintain a spare battery in your carrying case for replacement in this unit as necessary.

**To install or replace the battery,** follow the steps below:

1. Make sure the ON/OFF power switch is set to the *OFF* position. (It is not necessary to disconnect the cannula or remove the ImPulse Select from the cylinder, although you may find it easier to replace the battery within the battery compartment door if the unit is first removed from the cylinder.)

2. If the unit is not connected to the cylinder, simply hold the unit with one hand while you press in and lift up on the battery

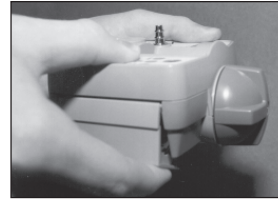


Figure 7

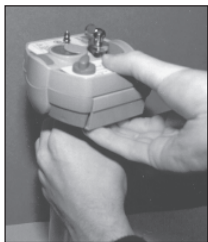


Figure 8

compartment latch with your other hand. (Figure 7.)

If the unit is connected to the cylinder, steady the unit by grasping the neck of the cylinder just below the unit with one hand while you press in and lift up on the battery

compartment latch with your other hand. (Figure 8.)

3. Insert a fully charged battery into the inside door of the battery compartment. Make sure the battery is properly positioned to match the correct positive and negative polarity markings. (Figure 9.)

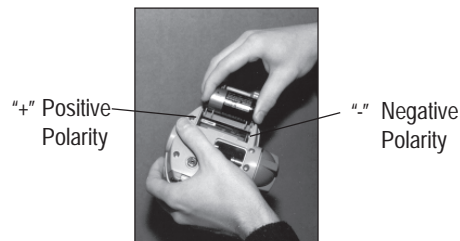


Figure 9

To test the battery to ensure that there is proper power available to operate the unit:

1. Make sure there is a battery in the unit's battery compartment and it is properly positioned to match the correct positive and negative polarity markings.
2. Make sure the ON/OFF power switch is set to the *ON* position.
3. Press and hold down firmly the center of the BAT. TEST button with your finger. (Figure 10.) (You can test the battery regardless of whether or not a cannula is connected to the oxygen outlet.)



Figure 10

The green PULSE FLOW indicator illuminates to indicate a good battery. If the battery requires replacement, the green PULSE FLOW and yellow LOW BATTERY indicators illuminate.

## Proper Setup for Oxygen Usage

---

### Note

---

Do not use a mask with the ImPulse Select unit. A mask may not conform to the face properly enough for the unit to fully sense inhalation.

Do not use pediatric or low flow cannulas with the ImPulse Select unit as their smaller tubing diameters negatively affect delivery volumes.

The use of ImPulse Select during sleep should be done only under the recommendation of a qualified clinician.

---

1. Check the energy level of the battery each time you use the unit.

Refer to “Testing and Replacing Battery” for step-by-step instructions.

2. Check the oxygen cylinder setup and the cylinder content gauge.

If you need to change cylinders, which includes removal and reconnection of the ImPulse Select unit, refer to Oxygen Cylinder Connection for step-by-step instructions.

3. Make sure the PULSE FLOW / CONTINUOUS FLOW switch is moved completely right (for pulse flow setting).

4. Set the ON/OFF switch to the *ON* position.

All three lights illuminate for less than 1 second. The ImPulse Select unit automatically calibrates and reaches sensitivity within approximately 15 seconds. Then the green light shuts off, and the unit emits a short burst of oxygen. This indicates ImPulse Select is ready for use.

5. Connect the 4 ft cannula to the oxygen outlet (you may use up to a 25 ft cannula, if desired). (Figure 11.)

6. Turn the cylinder valve slowly one full turn counter-clockwise to begin oxygen flow.
7. Make sure the cylinder contents gauge on the ImPulse Select unit registers within the green or white shaded zones.



Figure 11

This indicates an adequate oxygen supply in the cylinder.  
(If the cylinder contents gauge indicates the red/Refill zone, the cylinder needs to be replaced.)

8. Position the nasal cannula with the prongs inserted into your nostrils.
9. Set the flow selector between 1 and 6 depending on your prescribed dosage. (Figure 12.)



Figure 12

## Alarm Light Indicators

The following chart provides an explanation of what each alarm light indicates:

Alarm/Light Indicators			
Setting	Light	Alarm	Indicates
OFF	No	No	Unit is not on, battery life is preserved.
ON + (Flow Selection)	Green	No	Pulse flow.
	Yellow & Green	Yes (Intermittent)	Battery almost discharged. Prepare to replace battery within 20-30 minutes.
	Red	Yes (Continuous)	No inspiration detected for approximately 30 seconds (cannula may be disconnected, tubing kinked, or unit remains on when not in use).
BAT. TEST	Green	No	Sufficient battery life.
	Yellow & Green	No	Battery almost discharged. Prepare to replace battery within 20-30 minutes.
	No	No	No battery or discharged battery in unit.

## Turning Off the Unit

1. Turn the oxygen cylinder valve fully clockwise to stop oxygen flow.
2. Set the ON/OFF power switch on the ImPulse Select unit to the *OFF* position.

---

### Note

---

If you do not set the unit's ON/OFF power switch to *OFF* when the unit is not in use, the alarm sounds until the battery fully discharges.

---

## Switching to Continuous Flow

If necessary, for very short time periods, the PULSE FLOW/CONTINUOUS FLOW switch at the base of the unit can be moved completely left for *CONTINUOUS FLOW* to force the oxygen conserving unit to perform as a continuous flow unit. (Figure 13.)

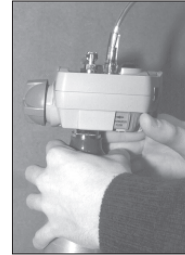


Figure 13

A typical use for the *CONTINUOUS FLOW* setting occurs when the battery can no longer provide power. This setting provides 2 lpm of continuous flow oxygen.

Before setting ImPulse Select to *CONTINUOUS FLOW*, make sure you set the ON/OFF power switch to the *OFF* position to preserve battery life as this is a manual override and no audible or visual alarm indicators are available in this “temporary” setting.



### Caution

---

The continuous flow setting uses substantially more oxygen than the normally used pulse flow setting. Make sure the cylinder contents gauge is observed more often when operating the unit as a device.

---

# ... **i**mpulse select as a portable unit ...

The ImPulse Select unit and its accessories are light weight and portable. This means that ImPulse Select can go virtually anywhere you go.



## Cautions

---

Do not expose the device to, or submerge it in, water.  
Do not expose the device to extreme temperatures.

---

The universal-style carrying case, as shown in Figure 14, can be used with the unit. During use, ImPulse Select should remain in your carrying case. This ensures added protection for the unit and allows discreet use. Simply check periodically to ensure that your cannula connection is secure and that the cylinder shutoff valve remains in the open position (one full turn counterclockwise) to enable oxygen flow.



Figure 14



## **p**roper care & maintenance

Keep the ImPulse Select clean and free from moisture, dust, and extreme temperatures. To help prevent possible damage to the unit, keep ImPulse Select in its carrying case.

Clean the unit periodically by wiping with a lint-free cloth. Pay special attention to the oxygen outlet for the cannula connection to make sure it remains free of dust, water, etc. Do not expose or submerge the ImPulse Select device in water.

We recommend using a one-part bleach to 99 parts water solution or using Fantastik® spray cleaner as a safe cleaner for the ImPulse Select's outer housing.

A list of undesirable chemical cleaning agents includes, but is not limited to the following, according to the plastic manufacturer: alcohol and alcohol-based products (isopropyl alcohol), concentrated chlorine-based products (Ethylene Chloride), and oil-based products (Pine-Sol, Lestoil). These are NOT to be used to clean the plastic housing on the ImPulse Select OCD. These chemicals and the cleaners that contain them will crystallize the plastic and break down the plastic's molecular properties.

Replace the disposable cannula periodically following normal usage. Additional supplies are available from your Equipment Provider or AirSep.

Return empty oxygen cylinders to your supplier for replacement. Remove the unit from the empty cylinder before returning the cylinder to your supplier.

---

 Note

---

Do not open the electronic compartment to service the device. Open only the battery compartment when necessary. To prevent a voided AirSep warranty, follow all manufacturer's instructions.

---

# **t**roubleshooting guide

If your unit fails to operate as described in this manual, first review the following chart for possible causes and solutions. If necessary, contact your Equipment Provider.

Troubleshooting Chart		
Problem	Possible Cause	Possible Solution
ON/OFF power switch set to <i>ON</i> position, but no lights are illuminated on unit.	No battery or discharged battery in unit.	Check and replace battery as necessary.
	Battery not inserted correctly.	Insert battery properly. (Reference polarity guide on inside of battery compartment door.)
ImPulse Select does not deliver oxygen.	Cannula tubing is kinked or not properly adjusted.	Check or replace tubing as necessary.
	ON/OFF power switch set to <i>OFF</i> position.	Set ON/OFF power switch to <i>ON</i> position.
	Oxygen cylinder is empty.	Check cylinder, and replace if empty.
	Oxygen cylinder valve is shut off.	Make sure cylinder valve is open one full turn counterclockwise.
	Unit sensitivity requires adjustment.	Contact your Equipment Provider.

# equipment provider information

## Specifications

Dimensions: 4.39 in. x 5.58 in. x 2.55 in.  
11.15 cm x 14.17 cm x 6.48 cm

Weight: 24 oz  
682 g

Power: (1) 1.5 V “D” alkaline battery

Indicators: Alarm/No inspiration — Audible/Visual (red)  
Low Battery — Audible/Visual (yellow)  
Pulse Flow — Visual (green); indicates good battery

Continuous Flow: 2 lpm oxygen; manual switch

Contents Gauge: Red/Refill Zone: 0–500 psi  
White Zone: 500–1,000 psi  
Green Zone: 1,000–2,400 psi

Maximum Cylinder Pressure: 3,000 psi



# **L**imited warranty

AirSep Corporation warrants the ImPulse Select Oxygen Conservator to be free from defect in parts for two years (as specified on the original invoice provided) from the date of delivery to the original purchaser, under normal use and operation. AirSep Corporation's obligations under this warranty are limited to the repair or replacement of any such item of equipment (or part thereof) shown to be defective or, at AirSep Corporation's option, to refunding the purchase price of any such defective item of equipment.

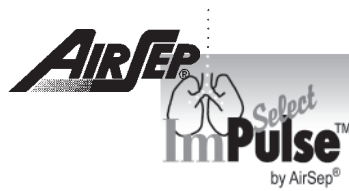
Each item of equipment for which a warranty claim is asserted shall, at the request of AirSep Corporation, be returned on a prepaid basis with proof of purchase date to the AirSep factory at the expense of the purchaser. The purchaser will be responsible for return freight charges.

Replacement parts shall be warranted as stated above for the unexpired portion of the original two-year parts warranty (as specified on the original invoice provided).

This warranty does not extend to any item or part subjected to misuse, accident, improper maintenance, or application, or which has been repaired or altered outside of the AirSep Corporation factory without the express prior written authorization of AirSep Corporation.

THE FOREGOING WARRANTY IS IN LIEU OF ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, IN FACT OR IN LAW, INCLUDING WITHOUT LIMITATION THE WARRANTY OF MERCHANTABILITY OR THE WARRANTY OF FITNESS FOR PARTICULAR PURPOSE. IT IS EXPRESSLY UNDERSTOOD THAT PURCHASER'S SOLE AND EXCLUSIVE REMEDY FOR DEFECT IN PARTS IS LIMITED TO ENFORCEMENT OF AIRSEP CORPORATION'S OBLIGATION AS SET FORTH ABOVE, AND AIRSEP CORPORATION SHALL NOT BE LIABLE TO PURCHASER OR OTHERS FOR LOSS OF USE OF THE EQUIPMENT OR FOR OTHER SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES.

For service on your ImPulse™ Select oxygen  
conserving device, contact:



Manufactured by  
AirSep Corporation  
401 Creekside Drive  
Buffalo, NY 14228-2085 USA