Your Sky-Ox®

Portable Oxygen System

Use & Care Guide

Aerox® Aviation Oxygen Systems, LLC
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Thank You

Thank you for investing in a Sky-Ox® Portable System from Aerox Aviation Oxygen Systems. Your Portable Oxygen System, including the *Click & Breath*™ regulator introduced in 2008, is designed, engineered, and manufactured to the highest quality standards in the industry and we are committed to serving your needs with equally high customer service.

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REGISTER YOUR SYSTEM

Registering your purchase will help us keep you up to date on product information and will activate your warranty. To register your product within 60 days of purchase please go visit us at:

https://www.aerox.com/warranty/

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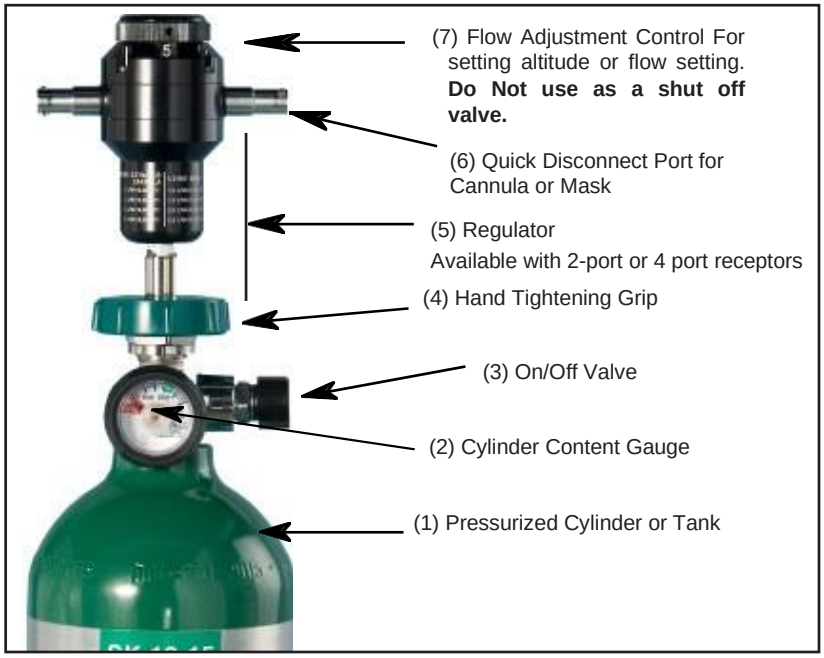
System Components



⚠ DANGER ⚠

The cylinder contains high pressure oxygen - a strong oxidizing agent and improper use of Oxygen Breathing Equipment can be dangerous!

Do not use this device until you are familiar with its proper operations. Do not smoke! Keep away from open flame, oil, grease, or other combustibles that could contribute to violent combustive action. Use in well-ventilated area.

Cylinder contains high pressure (up to 2,000 pounds per square inch- psi) oxygen. Do not drop and protect the unit from shock or damage. Keep away from anyone who may not be familiar with the hazards of its improper use or handling.

Maintain equipment using an Aerox-Approved FAA Authorized Aviation Oxygen Repair Station. Follow their recommendations on proper use.

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Operating Instructions

Referring to the illustration above, the Sky-Ox® portable oxygen system includes the following components:

- a cylinder (1) with an On/Off Valve (3)
- a cylinder pressure gauge (2)
- Click-a-Breath Regulator (5) with either a 2-port or 4- port Quick Disconnect female receptor (6) that will accept a male fitting of a cannula or mask in each port.

Sky-Ox® Portable Oxygen Systems are shipped with two or four pendent style Oxysaver® Cannulas (see photo) and one mask. Each Sky-Ox® cannula comes complete and assembled with a connector, flow-indicator, and pendant cannula. The pendent style offers more freedom plus comfort and the ability to drink water, coffee, a can of soda, or to eat a sandwich .

The size of cylinder you specified is based on projected flight hours of use. Based on your order, the cylinder arrives either filled with oxygen or empty . If empty, the cylinder must be filled with aviator-grade oxygen before using.

Ready to Use: Filled Cylinders are ready to use.

1. Turn the On-Off Valve (3) counterclockwise until fully on. Turn clockwise to shut it off.
2. Check the cylinder's content level on the cylinder Pressure gauge (2). This gauge will indicate how much oxygen remains in the cylinder. If the indicator needle is in the red area, the cylinder is getting very low on oxygen. If the indicator needle is all the way to 2,000 psi, the cylinder is full. (All cylinders filled with 2000 psi) . **Do not over pressurize the cylinder.**
3. Activate the oxygen flow with the regulator's Flow Adjustment Control knob (7) by turning it clockwise. You will hear it click between precise oxygen flow settings from .3 LPM to 5.0 LPM (see table or on the Regulator's body).
4. Insert the quick disconnect element on the mask or cannula into an open port (6) on the regulator head. Oxygen will not flow until the fitting on the breathing devices are securely connected. **The oxygen flow will stop when the cannula or mask is disconnected from the port**. It does not matter whether one, two, three or four cannula are connected because only those connected will dispense oxygen.

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5. If you are using the Oxysaver® Cannula, set it to the flow rate indicated on the Regulator.

Note:

For simplicity, it is recommended that the flow indicator be set at (0.5 liters per minute) for altitudes up to 15,000 feet. If you are flying at a lower altitude, you can adjust it downward if desired – always verify your blood oxygen saturation (SpO2) with a pulse oximeter.

You do not need to adjust the Regulator when multiple ports are being used. The regulator automatically compensates when additional (1-2-or 3) breathing units are attached. A setting of (0.5) liters per minute will deliver 0.5 liters of oxygen from each port.

Altitude Gauge Settings When Using The Oxysaver®	
Up to 10,000 feet	.3 Liters / minute
Up to 12,000 feet	.4 Liters / minute
Up to 15,000 feet	.5 Liters / minute
At 18,000 feet	.6 Liters / minute
Note: FAA recommends 1.8 Liters at 18,000 feet when using a mask or regular	

The following table is found on the Regulator *Liters per minute when using*	
Oxysaver® Cannula	**Mask**
.3 LPM up to 10,000 FT.	1.0 LPM up to 10,000 FT.
.4 LPM - 12,000 FT.	1.5 LPM - 15,000 FT.
.5 LPM - 15,000 FT.	2.0 LPM - 20,000 FT.
.6 LPM - 18,000 FT.	2.5 LPM - 25,000 FT.

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6. A flow indicator is located in line with the cannula. If the indicator is **red**, there is no oxygen flowing. If the indicator is **green**, it indicates that oxygen is flowing from the cylinder to the cannula.

Sky-Ox® Flow Indicator (showing no-oxygen flow)

7. A cannula (either a pendent or a mustache style) can be used only up to 18,000 ft. Above 18,000 ft., you **must** switch over to a mask.
8. When using the mask, set the flow adjustment control to the altitude you are flying. (See table on Regulator - also printed on page 5.) By turning the Flow Adjustment Control (7) knob on top of the Regulator until the indicator number is properly positioned.

Liters Per Minute indicator number readout on Regulator

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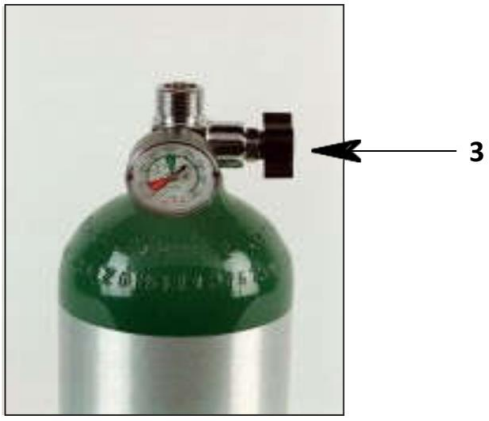
Refilling the Aluminum Cylinder

Do not use any tools – all fittings should be hand-tight. Always turn off the system before proceeding with refilling the cylinder. Completely close the On/Off Valve (3) before attempting to disconnect the regulator

Do Not Remove the On/Off Valve (3).



Remove the Regulator (5) from the valve by loosening the green Hand-Tightening Grip (4) (see figure below) between the On/Off Valve and the Regulator. (Turn Grip Counterclockwise. The valve is a standard fitting for oxygen (CGA 540) and no tools are required.

Aerox recommends using only aviator grade oxygen. The oxygen supplier is responsible for testing their storage and charging systems.

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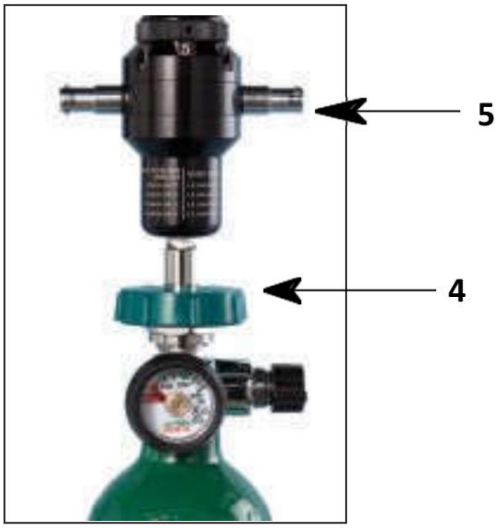

To fill Aluminum Portable Cylinders

A standard oxygen filler line or pigtail is attached to the valve opening and the On/Off Valve is opened for charging. When fully charged, the On/Off Valve (3) is closed and the charging line disconnected.

When filling the cylinder, the oxygen supplier will inspect your cylinder and, if needed, will hydrostatically test the unit. **Note:** Aluminum cylinder must be hydrostatically tested every five years and steel cylinders every five years. The oxygen supplier will label each cylinder when it is hydrostatically tested.

After cylinder is refilled, make sure the regulator assembly is reattached to the cylinder valve and tighten securely with Hand Tightening Grip (4) - **No wrench is needed.**

Refilling the Steel Cylinder

Use the same procedures for refilling steel cylinders as for aluminum cylinders. See above illustration for the location of On/Off Valve (3). To remove the Regulator for refilling, loosen the hand tightening grip (4) between the On/Off Valve (3) and the Regulator (5). The grip is located to the left of the On/Off Valve in the above illustration. After refilling, make sure this Regulator (5) is securely fastened - hand tightening (4) only needed. - **No wrench is needed.**

⚠ CAUTION ⚠

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After Using System

1. When finished using the Sky-Ox® portable oxygen system, turn the Flow Adjustment Control (7) to zero (0).
2. Turn the On/Off Valve (3) off by turning the knob clockwise.
3. If you have removed all of the quick disconnect units, reinsert one to bleed-off the oxygen still in the line. The flow indicator turns to red when no more oxygen is flowing.
4. When the system will be inactive for more than 24 hours, it is recommended that the system be shut down as described above.

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Oxygen Cylinder Maintenance

Initial Filling

Charge the oxygen cylinder as follows;

Slowly pressurize the cylinder to the rated regulator pressure. Do not exceed the cylinders rated pressure.

Note: To prevent over heating, caused by compression, it is recommended that filling be accomplished in stages as shown in Table 1. Each stage should take no less than 3 minutes to accomplish with a 2 minute rest between each stage.

Stage	PSI
1	500
2	1000
3	1500
4	1800
5	2000
6	2250

TABLE 1

CAUTION

Keep Hands and Filling Equipment Clean And Free From Oil. Keep Away From Flame Or Sources Of Ignition. Failure To Comply With All Cautions Could Result In Injury And Death.

Routine Maintenance

- It is important to maintain positive pressure in oxygen cylinders at all times.
- Do not allow the cylinder pressure to fall below 50 PSI if possible.
- A fully depleted oxygen cylinder may require a dry air or nitrogen purge to remove moisture.
- Table 2 Provides Hydrostatic Test and Service Life requirements for listed cylinders.

Cylinder Type	Hydrostatic Test & Inspection Rqmt	Maximum Service Life
DOT 3AL 6061T6 Alum	Every 5 Years 49 CFR § 180.209	Unlimited
DOT 3HT Steel	Every 3 Years 49 CFR § 180.209	24 Years
DOT-E 8162 Kevlar/Comp	Every 5 Years 49 CFR § 180.209	15 Years (10,000 Cycles)
DOT-E 10945 Carbon/Comp	Every 5 Years 49 CFR § 180.209	15 Years (10,000 Cycles)

Cylinder Purge

Cylinder pressures below 50 PSI may allow air into the cylinder. Air contains moisture and under certain temperature extremes can freeze and plug oxygen ports and lines.

The most effective method to purge the cylinder of any suspected moisture is to remove the regulator/valve and with the cylinder turned so the threads are down, blow hot air (heat gun or hair dryer) into the cylinder for about 20 minutes or until all moisture has evaporated.

Where a cylinder has been exposed to an extended period of low storage pressure, a cleaning and inspection by a licensed maintenance facility is recommended.

Re-Filling

Verify the condition and cleanliness of all ports and fittings prior to performing re-filling operations.

When re-installing the regulator or valve, assure that the proper approved o-ring or seal has been installed.

Charge the oxygen cylinder as discussed in *Initial Filling*.

Upon completion of filling operations, check for leakage using a liquid leak detector or a mild soapy water formula.

General

Fill only with Gaseous Aviators Breathing Oxygen, per MIL- PRF-27210.

Note that certain state, federal and international regulations may apply to the handling and maintenance of oxygen cylinders based on installation and application.

Further information regarding oxygen cylinder maintenance and use is available upon request.

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Care of Your Portable Oxygen System

- If the temperature in the plane is expected to rise above 130ºF, remove the cylinder from the aircraft when not in use. (A padded carrying bag for your system is available as an option — below.)
- If the temperature falls to, or expected to drop to minus 25ºF, it is advisable to remove the cylinder from the plane.
- **Note** padded carrying bag can be used to help secure the cylinder inside the plane. Place both straps of the carrying bag around the seat and secure tightly. The portable oxygen system will operate properly in either an upright or a horizontal position.
- Always secure and restrain your system as a precaution should in- flight turbulence be experienced.

Reminder: The system is under 2000 PSI of pressure when full. As a safety measure, the regulator is equipped with a pressure relief valve that's designed to activate under a reduced pressure rate to depressurize the cylinder.

Care of Your Oxygen Cannula

Do Not bend, fold, or crimp the clear hoses of the cannula because they may become cracked or damaged.

To clean your cannula after use, wipe with a soft cloth and a soft non-detergent soap. **Do Not Use alcohol** which may damage the unit. DO NOT SUBMERGE THE CANNULA.

Replacement of the cannula is recommended after 3 years or 200 hours of use.

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System Capacity Table

Table 1: This table provides valuable capacity information relating to the Sky Ox Portable Oxygen Systems.

Model Number	Oxymizer Cannula Duration Hours at 15,000 Ft.	Cylinder Capacity	With Mask Duration Hours at 15,000 Ft.	Approx. Size (H X D)	Approx. Weight
SK 12-6	5:28 hrs.	6 CU. FT. AL	1:49 hrs.	18 -1/2" x 3-1/4"	6 Lbs.
SK 12-9	8:07 hrs.	9 CU. FT. AL	2:45 hrs.	18-0" x 4-3/8"	7 Lbs.
SK 12-15	13:48 hrs.	15 CU. FT. AL	4:36 hrs.	24-0"x 4-3/8"	11 Lbs.
SK 12-24	22:42 hrs.	24 CU. FT. AL	7:34 hrs.	32-1/2" x 4-3/8"	14 Lbs.
SK 11-20	17:33 hrs.	20 CU. FT. Steel	5:51 hrs.	17-0" x 5-1/4"	15 Lbs.
SK 11-40	39:27 hrs.	40 CU. FT. Steel	13:09 hrs.	21-0" x 7"	28 Lbs.
SK 11-50	46:21 hrs.	50 CU. FT. Steel	15:27 hrs.	26-0" x 7"	36 Lbs.

Volume Content Table

Table 2: Content volume of oxygen in each cylinder when filled to capacity at 2000 psi.

Oxygen Content By System Model When Full (2000 psi)	
Model Number	**Liters**
SK-11-50	1415
SK-11-40	1132
SK-12-24	682
SK-11-20	566
SK-12-15	415
SK-12-9	248
SK-12-6	164

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