

**Your
Portable
Oxygen System**



Use & Care Guide

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Thank You

Thank you for investing in a Sky Ox Portable System from AirCraft Industries, your lifeline in flight. The 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. You are encouraged to contact us at anytime.

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Oxygen In Flight

Every pilot knows you never leave the ground without a fully charged oxygen system. It is a matter of life and death because of a condition known as hypoxia.

Hypoxia is a condition caused by a decrease in available oxygen at higher altitudes. This condition can affect individuals differently, but following are what some people may experience at various altitudes.

5,000 ft.

Night vision slightly impaired.

10,000 ft.

Drowsiness, fatigue, headache, and impaired judgement. Symptoms are generally undetectable during flights of less than one hour. However, on longer flights (especially four hours or more), symptoms can become progressively more noticeable and dangerous.

14,000 ft.

Some people experience euphoria, become belligerent, exhibit overconfidence, impaired judgement and a decreased attention span. Some are likely to experience decreased muscle control, blurred vision, memory lapses and may even pass-out. The longer the flight, the more noticeable the symptoms which nearly always occur during flights of two or more hours.

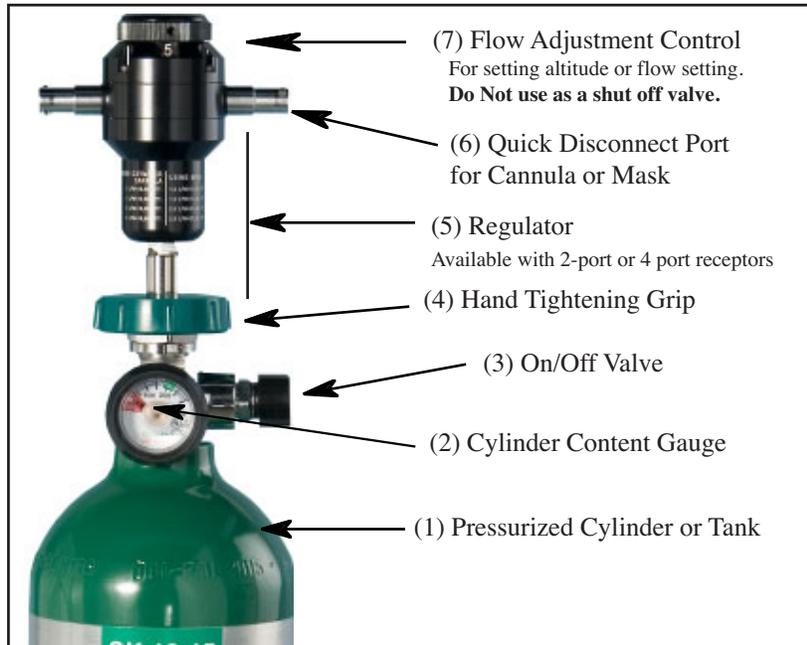
Above 14,000 ft.

Same symptoms as above but they occur more rapidly as the altitude increases. Serious handicap and collapse may occur at 17,000 ft. and smokers will experience these symptoms 3,000 to 4,000 feet lower.

The Portable Oxygen System

Pilots are responsible for ensuring that supplemental oxygen is available for all occupants on board his/her plane especially above 15,000 feet. Therefore, most private pilots rely on a portable oxygen system that includes a pressurized cylinder charged with aviator grade oxygen, control valves, readout gauges, and breathing equipment which may be either a cannula or a mask.

System Components



! DANGER !

The tank 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.

Tank 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 FAA Authorized Aviation Oxygen Repair Station. Follow their recommendations on proper use.

Operating Instructions

Referring to the illustration on page four, the portable oxygen system includes a cylinder or tank (1) with an On/Off Valve (3), a contents gauge (2) a Regulator (5) followed by 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.

Units are shipped with two or four pendent style Oxyimizer Cannula (see photo) and one mask. Mustache style cannulas may be substituted for pendent style cannulas. The pendent style offers more freedom plus comfort and the ability to drink water, coffee, a can of soda, and/or to eat a sandwich .

The size of tank you specified is based on projected flight hours of use, see Table 1 on page 11. Based on your order, the tank arrives either filled with oxygen or empty . If empty, the tank must be filled with aviator grade oxygen before using.



pendent style cannula

Ready to Use:

Filled tanks are ready to use.

1. Turn the On-Off Valve (3) counterclockwise until fully on. Turn clockwise to shut it off .
2. Check the tank's content level on the cylinder Content gauge (2) It is the gauge nearest the tank. This gauge will indicate how much oxygen remains in the tank. If the indicator needle is in the red area, the tank is getting very low on oxygen. If the indicator needle is all the way to 2,000 psi, the tank is full. (All tanks filled with 2000 psi) See Table 2 on page 11.
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 next page 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.
5. If you are using the Oxymizer Cannula, set it to the flow rate indicated on the Regulator.

Note:

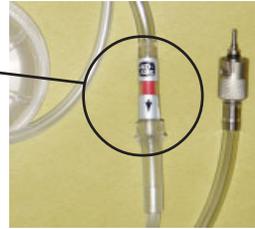
For simplicity purposes, it is recommend the flow indicator be set at (.5 liters) for altitudes up to 15,000 feet. If you are flying at a lower altitude, you can adjust it downward.

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 point-five (.5) liter will deliver .5 liters of oxygen from each port.

Altitude Gauge Settings When Using The Oxymizer Cannula	
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 cannula.	

The following table is found on the Regulator <i>Liters per minute when using</i>	
Oxymizer 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.

6. A flow indicator is located in the cannula line. If the indicator is **red**, there is no oxygen flowing. If the indicator is **green**, it indicates that oxygen is flowing from the cylinder or tank.
7. If you are flying up to 18,000 ft., then set the flow rate at point-six (.6) liters.
8. 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.
9. When using the mask, set the flow adjustment control to the altitude you are flying. (See table on Regulator - also printed on page 6.) 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



Medical Emergency

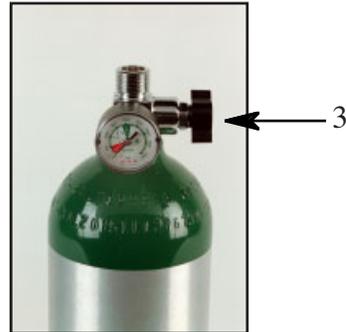
For an in-flight medical emergency, use the oxygen **mask** on the patient and adjust the flow meter to the emergency sitting - wide open. This will provide a flow rate of four (4) to five (5) liters per minute. Radio ahead to request medical assistance, and land your plane as soon as possible.

Refilling the Aluminum Tank

Always turn off the system before proceeding with refilling the tank. Completely close the On/Off Valve before attempting to disconnect the regulator.

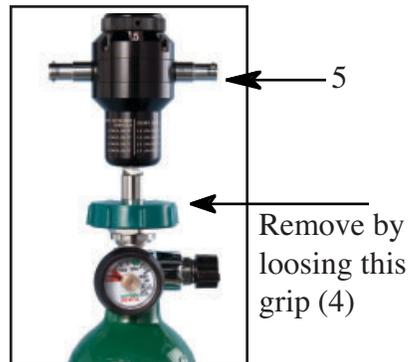
Do Not Remove the On/Off Valve (3).

Instead remove the Regulator (5) by loosening the Hand Tightening Grip (4) (see figure at lower right) between the On/Off Valve and the Regulator. (Turn nut counterclockwise, or to the right.) This is a standard fitting for oxygen (CGA 540) and no tools are required.



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

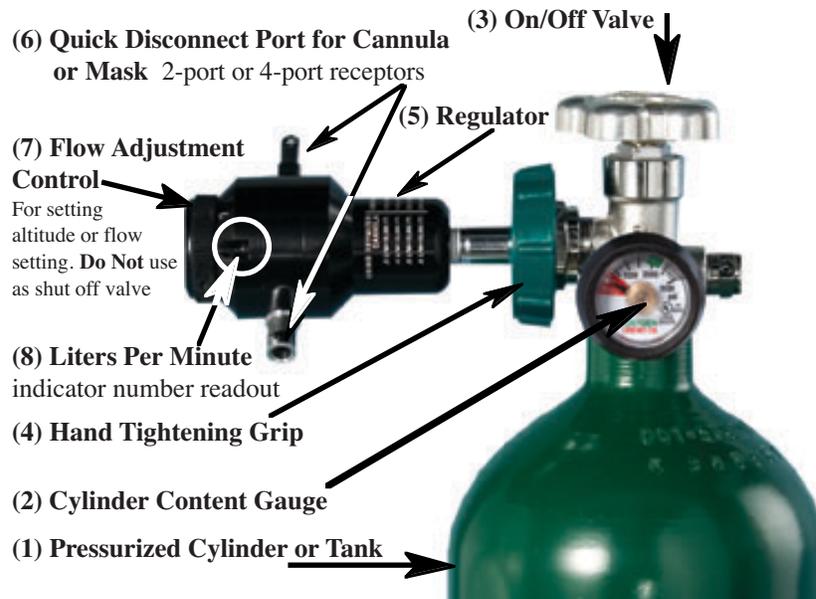
A standard oxygen filler line or pigtail is attached to the valve opening and the On/Off Valve is opened for charging. When fully charged, the On/Off Valve (3) is closed and the charging line disconnected.



Each tanks is stamped with the date of manufactured.

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

After tank 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 Tank

Use the same procedures for refilling steel tanks as for aluminum tanks. 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.



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 (see pg.. 7) 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.

Care of Your Portable Oxygen System



If the temperature in the plane is expected to rise above 130°F, remove the tank and take it with you. (A padded carrying bag for your system is available as an option — below.)
If the temperature falls to, or expected to drop to minus 25°F, it is advisable to remove the tank from the plane.

Note padded carrying bag can be used to help secure the tank 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 pounds 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 tank.

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.

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: This table provides the content volume of oxygen in each cylinder or tank 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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