

OXYGEN SERVICING

1. General Maintenance Precautions

NOTE: The following precautions are recommended by the National Fire Protection Association.

Prohibit open flames (including smoking) within 50 feet of the aircraft.

Do not permit aircraft servicing or maintenance operations which may inherently or, accidentally induce ignition sources or combustibles concurrent with oxygen servicing. These include fueling, fuel and hydraulic system repairs, use flammable cleaning fluids, de-icing fluids, etc. Do not operate electrical switches or connect or disconnect ground power generators when performing oxygen system maintenance.

Electrostatically ground the aircraft and electrostatically bond the oxygen charging system to the aircraft.

Good housekeeping practices are necessary in the vicinity of oxygen system maintenance. This is particularly true with combustibles such as grease, lubricating oil, asphalt, etc. The importance of cleanliness cannot be overstressed. Never permit oil, grease, or other combustibles to come in contact with any part of the aircraft's oxygen system or the charging equipment. Do not handle oxygen equipment with oily hands, gloves, cloths, or tools. Do not perform work wearing oily or greasy clothing. Keep protective caps on equipment in position as long as possible and replace as soon as possible. Before charging, inspect all connections for cleanliness. If dust, dirt, grease, (any other contaminant is found, it shall be removed with detergent or solvent approved for oxygen service. Bleed a small amount of oxygen through hose or valve outlets before connecting to the fill fitting to eliminate foreign material which may escape external inspection.

Use only lubricating and thread compounds specifically approved for oxygen service under the pressures and temperature involved. Do not use oil or grease.

Keep the system free of contamination by immediately capping exposed ends. Use clean caps (NAS814 or NAS815). Do not use masking tape.

Avoid damaging oxygen containers, hoses, etc. Secure equipment so that it cannot fall or roll.

Do not tamper with safety devices or mar identifying marks, symbols, and nameplates.

Should a valve outlet become clogged with ice, thaw with warm (not boiling) water.

Do not direct gaseous oxygen at the body or clothing because of the possibility of fire and/or personal injury.

Before commencing the charging operation, turn all oxygen regulators in the aircraft to the OFF position.

Make certain that threads on mating parts correspond to each other. Never force connections which do not fit. Fittings with worn or damaged threads should be replaced.

After making all connections, check the connection for tightness by audible and visual means. If a leak is suspected, test with a solution specifically approved for oxygen service.

Always close charging equipment discharge valves when charging is completed.

Open container valves slowly. Rapid opening, and subsequent sudden and fast discharge of oxygen into the aircraft's oxygen system can cause dangerous heating which could result in a fire or explosion of combustibles within the system. Container valves should be fully opened to prevent leakage around the valve item.

Never use wrenches, hammers, or other tools to force container valves. If a container valve cannot be hand operated, it should not be considered defective and returned to the supplier.

Never attempt to repair or alter the oxygen system or charging equipment at other than maintenance facilities established to accomplish this work. Field operations should be limited to the minimum needed to ensure tightness and correct operation of the aircraft system.

When flow testing the aircraft's system use the minimum amount of oxygen necessary to check the system.

Release the pressure before attempting to tighten or loosen any oxygen tubing or unions. This is not intended to prevent connecting or disconnecting the type of containers which incorporate self-opening and self-venting valves.

2. Servicing Oxygen Cylinder

NOTE: Refer to General Maintenance Precautions in Chapter 35.

The oxygen cylinder is located in the nose section on the left hand side of the cockpit pressure bulkhead at Station 63.

A. Maximum pressure for the oxygen cylinder is 1500 PSI at 70°F.

NOTE: For the minimum supply required for the crew, refer to the Gulfstream II Airplane Flight Manual, Limitations Section.

B. Replace oxygen cylinder if pressure is less than 50 psi.

C. Recharge cylinder through filler valve located on left side of nose wheel well. (Aircraft not having ASC 147 incorporated).

On Aircraft 1 through 135 including 775 having ASC 147 incorporated and 136289 excluding 249 and 252, the oxygen filler valve and pressure gage has been relocated to permit oxygen from the exterior of the aircraft without having to enter the nose wheel well. The access door for the filler valve and pressure gage is a hinged type door and is located on the lower forward left side of the nose section between Fuselage Station (FS) 50.6 and 56.8.

NOTE: It is recommended that the pressure not be permitted to go below 100 psi.

WARNING: ONLY GASEOUS AVIATORS BREATHING OXYGEN IN ACCORDANCE WITH MII-O-27210 SHALL BE USED.

3. Oxygen Replenishing Procedure

NOTE: Refer to General Maintenance Precautions in Chapter 35.

To recharge oxygen cylinder using the oxygen filler valve in the nose section, proceed as follows:

- A. Ensure the remote shutoff handle is in the back or OFF position.
- B. Gain access to the oxygen filler valve in forward left side of the nose wheel well (Aircraft not having ASC 147 incorporated) by opening the clamshell doors (Refer to Chapter 32, Section 32-7-0) on the left forward exterior nose section (Aircraft having ASC 147 incorporated).
- C. Remove cap from oxygen filler valve. Ensure that valve is free of any contamination.
- D. Using an external oxygen filler apparatus capable of supplying 1800 psi at 704F and equipped with a shutoff valve, crack external filler rig shutoff valve to clear filler line of any possible contamination. Close valve.

WARNING: SOME OXYGEN MAY BE LOST WHEN CONNECTING RIG TO CYLINDER VALVE, BE SURE HANDS, WRENCHES, AND CLOTHING ARE FREE OF OIL AND GREASE.

- E. Connect external rig to oxygen filler valve.

CAUTION: FILL CYLINDER AT A SLOW RATE. IF CYLINDER IS FILLED TOO RAPIDLY EXCESSIVE HEAT WILL DEVELOP.

- F. Observe the supply gage adjacent to the filler valve. Slowly open the external rig shutoff valve and fill the cylinder until the supply gage reads proper level as determined by the Pressure vs Temperature Chart in Figure 201.

NOTE: Initial temperature refers to ambient temperature. Filling pressure refers to pressure to which cylinder must be filled.

- G. Close external rig shutoff valve when correct pressure is reached.
- H. Disconnect external rig supply line from tiller valve.
- I. Replace cap on filler valve and tighten to a low torque. Cap ensures connection is kept clean and must be replaced.



Oxygen Service Door

TEMP °F	TEMP °C	FILLTO PSIG
0	-17.8	1485
+ 10	- 12.2	1530
+ 20	- 6.7	1575
+ 30	- 1.1	1625
+ 40	+ 4.4	1670
+ 50	+10.0	1715
+ 60	+ 15.0	1760
+ 70	+ 21.1	1800
+ 80	+ 26.7	1850
+ 90	+ 32.2	1895
+ 100	+ 37.8	1940
+ 110	+ 43.3	1975
+ 120	+ 48.9	2015

Oxygen Cylinder Replenishing
Pressure vs Temperature Relationship
Figure 201