

OXYGEN SYSTEM - SERVICING

1. General

- A. This section gives the servicing procedures for the different optional oxygen configurations that can be installed in the Model 208/208B airplanes. The servicing gas can be either MIL-PRF-27210 Type 1 oxygen or oxygen that meets GB8982-2009 which is considered to be an acceptable alternate for servicing aircraft in China.
- B. The optional oxygen system consists of a 50.67 or 116.95 cubic-foot capacity oxygen cylinder, altitude-compensating regulator (Model 208 and Model 208B), filler valve, pressure lines, and ten outlets (Model 208 only), two outlets (Model 208 and Model 208B), thirteen outlets (Model 208B Passenger), and oxygen masks and line assemblies as required for each system. The oxygen system pressure gage is located in the overhead console.
NOTE: Some cargo airplanes may also be equipped with quick-don masks.
- C. The airplane can also have a portable oxygen system installed. The oxygen cylinder has a capacity of 4.25 cubic feet and has a pressure gage installed on the assembly. It is installed to the cabin seat tracks behind the most aft right seat forward of the cabin door at FS 256.95 between RBL 14.0 and RBL 23.5.
- D. An access plate is provided on right side of fuselage to provide access to oxygen system filler valve assembly.

2. Charging Oxygen System

WARNING: Oxygen supports combustion. Materials that will not usually flash in the atmosphere will easily burn or explode if in the immediate area of concentrated oxygen.

WARNING: Make sure that safety precautions are obeyed at all times.

WARNING: Do not service the oxygen bottle while the airplane is being fueled. Make sure that no flammable material is near when servicing the oxygen bottle.

WARNING: Oil, grease, or other lubricants in contact with high pressure oxygen create a serious fire hazard. Such contact should be avoided. Do not permit smoking or open flame in or near airplane while work is performed on oxygen systems.

- A. Charge Oxygen Cylinder.
 - (1) Remove access panel 312AR. Refer to Chapter 6, Access Plates and Panels Identification - Description and Operation.
 - (2) Remove oxygen filler cap.
 - (3) Connect charging cylinder line from oxygen service cart to filler valve.
WARNING: Ground airplane and servicing equipment before charging oxygen system.
 - (4) Do not attempt to charge oxygen cylinder if servicing equipment fittings or filler valve are corroded or contaminated. If in doubt, clean with stabilized trichlorethylene and let air-dry. Do not allow solvent to enter any internal parts.
CAUTION: A cylinder which is completely empty may be contaminated.
 - (5) If cylinder is completely empty, do not charge. Remove the cylinder and replace. Refer to Oxygen System - Maintenance Practices.
 - (6) When it has been determined that the cylinder is **not** empty, slowly open the charging valve. Refer to Table 301 or Table 302 for charging pressures at different temperatures.
NOTE: Use either MIL-PRF-27210 Type 1 oxygen or oxygen that meets GB8982-2009, which is considered to be an acceptable alternate for servicing aircraft in China, to charge the cylinder.
 - (7) Shut off oxygen at charging cylinder and disconnect line.
 - (8) Install filler cap.
 - (9) Reinstall access panel 312AR. Refer to Chapter 6, Access Plates and Panels Identification - Description and Operation.

3. Portable Oxygen Cylinder Charging Procedures

WARNING: Oxygen supports combustion. Materials that will not usually flash in the atmosphere will easily burn or explode if in the immediate area of concentrated oxygen.

WARNING: Make sure that safety precautions are obeyed at all times.

WARNING: Do not service the oxygen bottle while the airplane is being fueled. Make sure that no flammable material is near when servicing the oxygen bottle.

WARNING: Oil, grease, or other lubricants in contact with high pressure oxygen create a serious fire hazard. Such contact should be avoided. Do not permit smoking or open flame in or near airplane while work is performed on oxygen systems.

A. Charge the Oxygen Cylinder.

- (1) Examine the oxygen bottle for serviceable condition and the hydrostatic test date.
- (2) Remove the filler cap from the charging valve.
- (3) Connect charging cylinder line from oxygen service cart to filler valve.

WARNING: Ground airplane and servicing equipment before charging oxygen system.

- (4) Do not attempt to charge oxygen cylinder if servicing equipment fittings or filler valve are corroded or contaminated. If in doubt, clean with stabilized trichlorethylene and let air-dry. Do not allow solvent to enter any internal parts.

CAUTION: A cylinder which is completely empty may be contaminated.

- (5) If cylinder is completely empty, do not charge. Remove the cylinder and replace. Refer to Portable Oxygen System - Maintenance Practices.

- (6) When it has been determined that the cylinder is **not** empty, slowly open the charging valve. Refer to Table 301 or Table 302 for charging pressures at different temperatures.

NOTE: For more data related to the portable oxygen bottle operating pressure refer to the AVOX Component Maintenance Manual 35-32-18, Subject - Assembly, found in the Introduction List of Publications.

- (7) When the charge is complete, slowly close the charging valve.
- (8) Remove the refill coupling from the charging valve.
- (9) Turn the oxygen cylinder handle clockwise to the fully closed position on the ON/OFF valve.
- (10) Install the filler cap to the charging valve.

Table 301. MIL-PRF-27210, Type 1 Oxygen Cylinder Fill Pressure for Different Fahrenheit Temperatures

Stabilized Temperature °F	Fill Pressure PSIG	Stabilized Temperature °F	Fill Pressure PSIG	Stabilized Temperature °F	Fill Pressure PSIG
-50	1242	20	1569	90	1892
-40	1289	30	1616	100	1937
-30	1336	40	1662	110	1983
-20	1383	50	1708	120	2029
-10	1430	60	1754	130	2074
0	1477	70	1800	140	2120
10	1523	80	1846	150	2165

Table 302. MIL-PRF-27210, Type 1 Oxygen Cylinder Fill Pressure for Various Celsius Temperatures

Stabilized Temperature °C	Fill Pressure kPa	Stabilized Temperature °C	Fill Pressure kPa	Stabilized Temperature °C	Fill Pressure kPa
-40	8838	-6	11228	28	13365
-38	8989	-4	11359	30	13486
-36	9139	-2	11489	32	13606
-34	9287	0	11619	34	13726
-32	9434	2	11747	36	13845
-30	9579	4	11876	38	13964
-28	9723	6	12003	40	14083
-26	9865	8	12130	42	14201

-24	10006	10	12255	44	14318
-22	10146	12	12381	46	14436
-20	10285	14	12506	48	14553
-18	10423	16	12630	50	14670
-16	10559	18	12754	52	14786
-14	10695	20	12878	54	14903
-12	10830	22	13000	56	15018
-10	10963	24	13122		
-8	11096	26	13244		