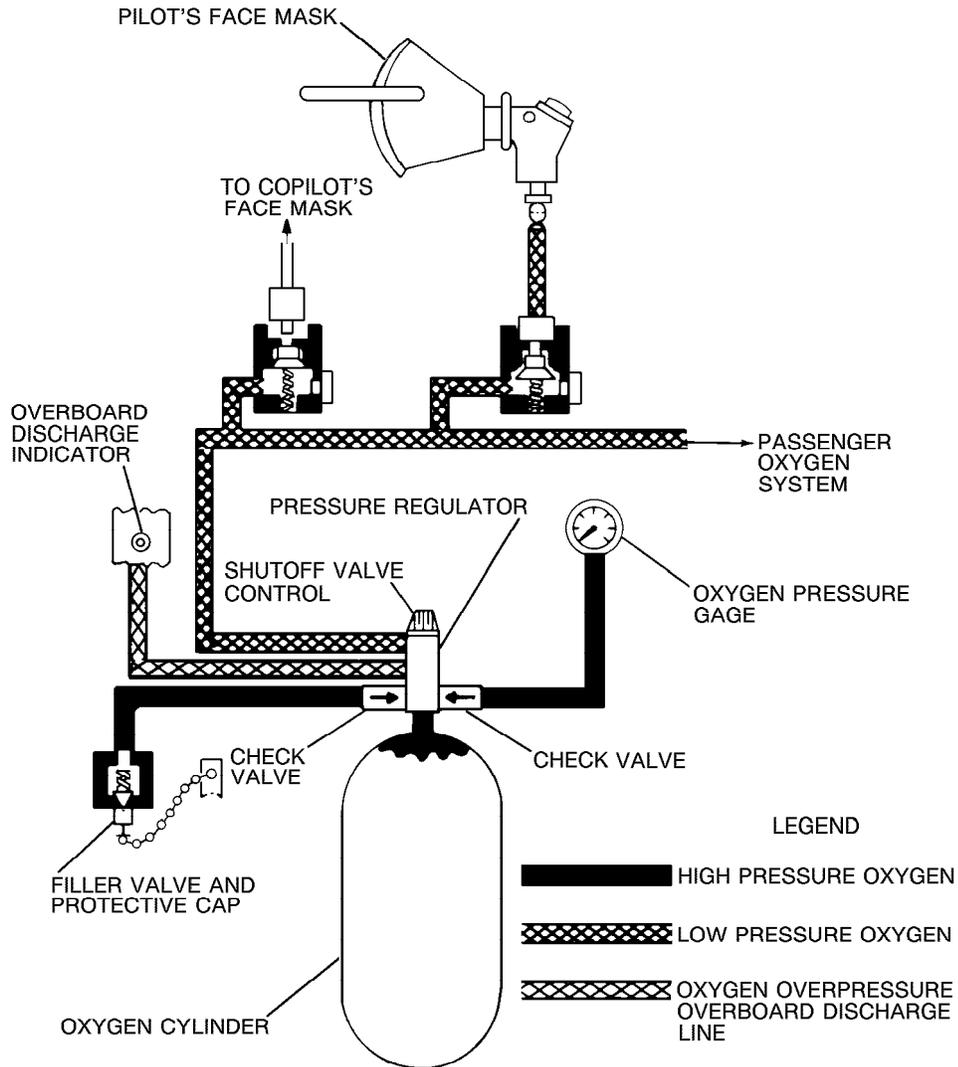


OXYGEN

The oxygen system provides supplementary oxygen to the cockpit and passenger masks. Oxygen use is not normally required since a cabin pressure altitude of 8000 feet can be maintained at the maximum certified airplane altitude with normal pressurization system operation.

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OXYGEN SYSTEM SCHEMATIC



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Figure 2-47

A fully charged, 49 or 76 (optional) cubic foot cylinder, located in the nose compartment, provides ample oxygen for normal flight requirements and an emergency descent. The light weight bottle is made of Kevlar, impregnated with epoxy resin, which is wound longitudinally and circumferentially over a seamless aluminum liner. Normal pressure for both systems is 1850 PSIG at 21°C (70°F). The cylinder must not be allowed to become completely discharged, since there is a possibility of contamination due to negative pressures which can occur with temperature changes. A completely discharged container must therefore be treated as if the pressure regulator has been damaged, and reconditioned.

The system also contains a pressure regulator shutoff valve and provisions for external servicing. A green inspection disc is installed in the end of the overpressure vent line which is flush mounted below the right nose compartment door. If cylinder pressure exceeds a maximum of 2700 PSI, the disc will rupture indicating a loss of oxygen. This overpressure system will actuate under only the most adverse circumstances; therefore, if the disc is ruptured, the bottle, regulator, and disc must be replaced before flight. A locking connector has been provided on the right and left flight deck consoles to supply the flight compartment occupants with 70 PSI oxygen for diluter demand mask use. Refer to 75FMA-00, Normal Procedures, for Oxygen Supply Chart.

## OXYGEN CONTROL PANEL

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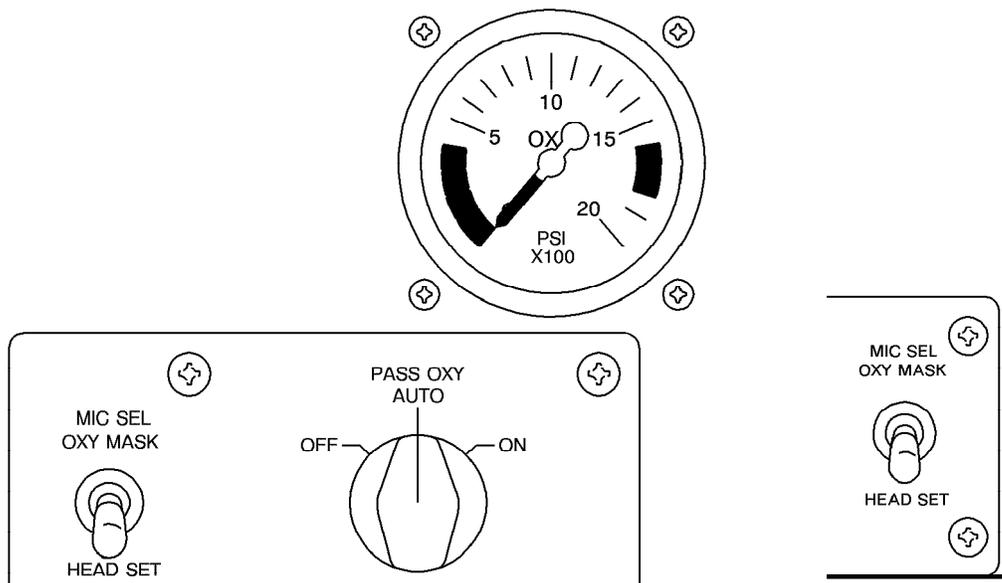
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Figure 2-48

The oxygen control panel (PASS OXY) is located on the lower left side of the pilot's instrument panel and contains the OFF-AUTO-ON oxygen control, a microphone selector switch (MIC SEL) and the oxygen cylinder pressure gage. In the AUTO (normal) position of the oxygen control, an altitude sensing switch will electrically actuate the passenger solenoid valve, above  $14,500 \pm 445$  feet, supplying 70 PSI oxygen pressure to the oxygen mask door actuator. This pressure is sufficient to deploy the doors and drop the continuous flow masks at each passenger seat. Oxygen will not flow from these masks until the lanyard on the respective mask has been pulled, removing the pintle pin. This conserves oxygen in the event all masks are not to be used. When the cabin altitude descends to approximately 8000 feet with electrical power available, the passenger solenoid valve will close, allowing passenger line system oxygen pressure to bleed off. The ON position is used to bypass the electrical solenoid function and provides oxygen to the passenger at any altitude. OFF position is used to shut off oxygen supply to the passengers in order to conserve the remaining supply for the crew. As the oxygen pressure dissipates, the door actuators will retract, allowing mask stowage to be accomplished. Re-install all removed pintle pins before stowing masks.

The microphone selector switch (MIC SEL) is marked OXY MASK and HEAD SET. Selection allows for radio transmission through the headset microphone or the oxygen mask microphone. The pilot's microphone selector switch is located low on the far left side of the instrument panel and the copilot's switch is on the lower right side of the instrument panel.

## OXYGEN MASKS

The crew oxygen masks are of the quick donning type with mask mounted diluter/demand pressure breathing regulators. The mask face piece fits all facial sizes and shapes and can be easily removed for cleaning or replacement. Each oxygen regulator has capability of manually selecting NORM (diluter demand), 100% (100 percent demand) or EMER (pressure breathing). One hundred percent pressure demand oxygen is provided by moving a lever on the underside of the mask to the 100% position. The mask emergency pressure is tested with a "press-to-test" (TEST) button, and is changed to emergency by turning the same button to EMER. The crew member is assured that oxygen is being received when no restriction to breathing is present with the mask donned and the selector in the 100 percent position. Selection of the EMER position will provide a steady flow of pressurized oxygen in the face cone. This is sufficient for protection of the respiratory tract against smoke and odor contamination at any altitude. (Above 40,000 feet, pressurized oxygen is provided in all positions; NORM, 100%, EMER.) Oxygen pressure to the masks may be verified by checking the transparent cylinder in the supply line for a green band. If no oxygen pressure is present the band will indicate red. A noise canceling dynamic microphone with transistorized preamplifiers allows for uninterrupted communications while the mask is being utilized.

To qualify as a quick donning mask, the mask must be properly stowed in its stowage box. To properly stow the mask the following procedure should be followed:

- a. Open stowage box doors.
- b. Ensure the oxygen line and microphone connections are secure within the stowage box.
- c. With the harness deflated, grasp the face piece with one hand and allow the harness to hang below the face piece.
- d. Coil the hose in the back of the stowage box.
- e. Tuck the harness into the stowage box, ensuring that it fits between the coiled hose and the mask.
- f. Ensure the last six inches of hose is positioned between the doors. This will allow the doors to close.
- g. Continue pushing mask into box until it seats against the upper stop.

### NOTE

Do not squeeze the red levers on the regulator face piece, as this will cause the harness to inflate, forcing the stowed harness out of the stowage box.

- h. Close the left door. The OXY ON flag will be visible on the right side of the left door.
- i. Push the PRESS TO TEST AND RESET button and ensure the OXY ON flag disappears.
- j. Seat the mask to the door pin, located on the left door.
- k. Close the right door and ensure the mask is correctly positioned in stowage box.

**CAUTION**

INCORRECT SEATING OF THE MASK TO THE DOOR PIN OR INCORRECT ROUTING OF THE HOSE THROUGH THE DOOR OPENINGS MAY IMPAIR PROPER FUNCTIONING OF THE MASK.

The following procedure can be used to test the system for proper operation without removing the mask from the stowage box:

- a. Depress the PRESS TO TEST AND RESET button and hold in position.
  - (1) Ensure the blinker turns yellow and then black.

**NOTE**

Transition of the blinker from yellow to black indicates a leak-free regulator. If the blinker remains yellow and fails to transition to black a leak is present in the system and must be corrected.

- (2) While continuing to hold the PRESS TO TEST AND RESET button, depress PRESS TO TEST knob on the regulator for one second. Ensure the blinker turns yellow and then black, indicating proper regulator demand operation.
- b. Release the PRESS TO TEST AND RESET button.

At cabin altitudes above 20,000 feet, or when using the mask for smoke protection, 100 percent oxygen should be selected. To conserve oxygen when using the mask at cabin altitudes below 20,000 feet, 100 percent may be deselected to revert to normal diluter demand operation.

The passenger oxygen masks are an oral-nasal type which forms around the mouth and nose area. The mask is secured to the face by an elastic headband. The mask consists of a face plate, economizer bag, three foot length of plastic tubing, a lanyard cord with pintle pin attached and head strap. An orifice is located inside the mask plastic tubing to provide constant flow to the passengers regardless of altitude.

**PORTABLE OXYGEN BOTTLE (IF INSTALLED)**

In addition to the normal oxygen system, an 11-cubic foot portable walk-around oxygen bottle is provided. The portable bottle is located in the forward part of the cabin. The bottle has multiple connections and is available to the crew and passengers.