OXYGEN

GENERAL

The oxygen system provides supplementary oxygen for the cockpit sweep-on type masks and the passengers' continuous flow masks. It is not normally used since a cabin altitude of 8000 feet can be maintained at the maximum certified airplane altitude with normal pressurization system operation.

OXYGEN BOTTLE

In the unlikely event supplementary oxygen is required, a fully charged 64.0 cubic foot bottle, located in the right side of the nose compartment provides approximately fifty minutes to one hour of oxygen for crew and six passengers. Duration for actual personnel aboard can be computed by assuming consumption at a rate of 4.3 liters per minute per occupant, and a usable full bottle output of 1750 liters. Normal pressure for the system is 1600 to 1800 PSI.

The bottle assembly contains a pressure reducing valve, shutoff valve and provisions for external servicing. A green disc is installed in the end of the bottle overpressure vent line which is flush mounted on the lower right side of the forward fuselage below the aft edge of the right avionics access door. This disc, when ruptured, indicates bottle pressure has exceeded 2500 PSI and is empty. This overpressure system will actuate under only the most adverse circumstances; therefore, if the disc is ruptured, determine the cause of the overpressure before flight. The oxygen bottle pressure is displayed on the right instrument panel. 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. The diluter demand masks have an integrally mounted microphone and oxygen regulator. Each oxygen regulator has a lever allowing manual selection of diluter demand (normal) or demand (100 percent oxygen) flows. The lever is normally placed in the 100 percent position so it is ready for emergency use at high altitudes. If oxygen is used below 20,000 feet, the lever can be repositioned to normal to conserve oxygen.

OXYGEN CONTROL PANEL

The left console contains the oxygen controls regulating flow to the passenger compartment. An oxygen control valve labeled CREW ONLY, NORMAL and MANUAL DROP allows the pilot to select oxygen flow to the flight deck only (CREW ONLY position), or flow to both the passenger compartment and flight deck (NORMAL position). The MANUAL DROP position will allow the passenger oxygen masks to be manually deployed in the event of an emergency and the masks fail to automatically deploy. A switch on both the pilot's and copilot's control panels, labeled MIC OXY MASK/MIC HEADSET, selects which microphone will be used. Refer to Figure 2-28 for the pilot's side console.

OXYGEN SYSTEM SCHEMATIC

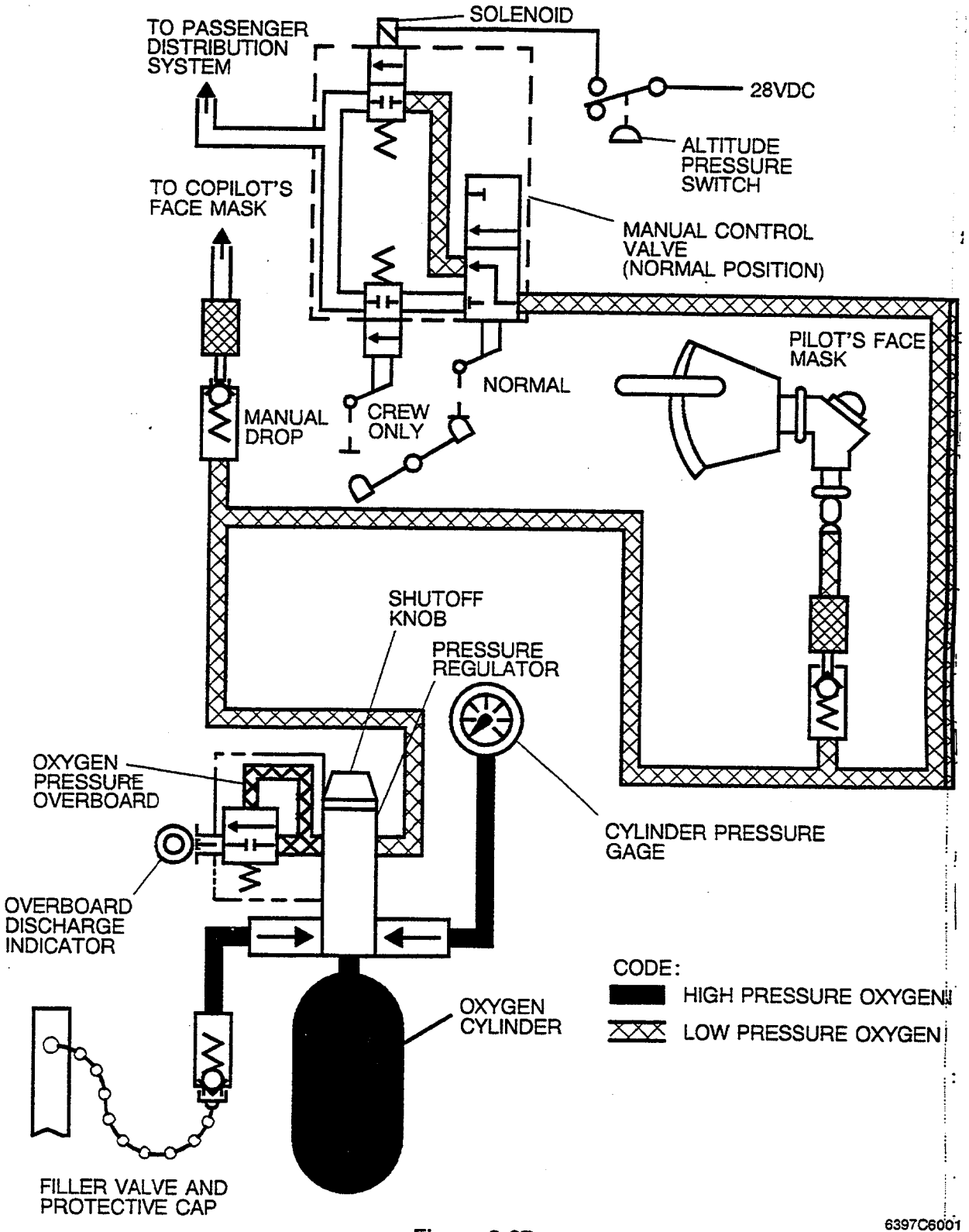

Figure 2-27

PILOT'S SIDE CONSOLE OXYGEN CONTROL AND OUTLETS

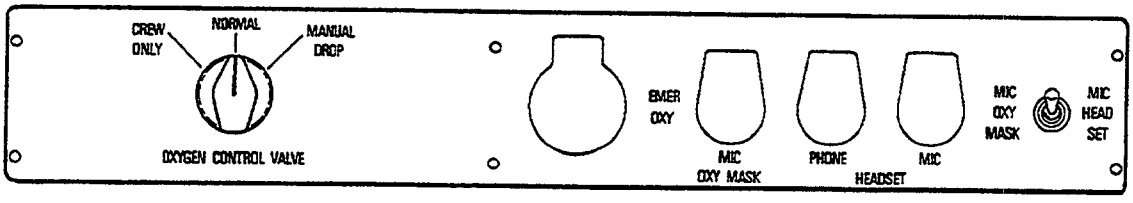

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Figure 2-28

WARNING

- **NO SMOKING WHEN OXYGEN IS BEING USED OR FOLLOWING USE OF PASSENGER OXYGEN UNTIL LANYARDS HAVE BEEN REINSTALLED.**

- **DUE TO HUMAN PHYSIOLOGICAL LIMITATIONS, THE PASSENGER OXYGEN SYSTEM IS NOT SATISFACTORY FOR CONTINUOUS OPERATION ABOVE 25,000 FEET CABIN ALTITUDE AND THE CREW OXYGEN SYSTEM IS NOT SATISFACTORY FOR CONTINUOUS OPERATION ABOVE 37,000 FEET CABIN ALTITUDE. INDIVIDUAL PHYSIOLOGICAL LIMITATIONS MAY VARY. IF CREW OR PASSENGERS EXPERIENCE HYPOXIC SYMPTOMS, DESCEND TO A LOWER CABIN ALTITUDE.**

Should cabin altitude exceed 13,500 feet, +600 or -600 feet, an altitude sensing switch will electrically actuate the passenger solenoid valve, supplying 70 PSI oxygen pressure to the passenger manifold. This pressure is sufficient to operate the passenger mask actuators, 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 has reached approximately 8000 feet with electrical power available, the passenger solenoid valve will close, allowing passenger manifold oxygen pressure to bleed off. If electrical power is not available, the passenger manifold pressure can be shut off by closing the OXYGEN CONTROL VALVE by selecting CREW ONLY position. As the oxygen pressure dissipates, the door actuators will retract, allowing mask stowage to be accomplished. Reinstall all removed pintle pins before stowing masks.

CREW OXYGEN MASKS

The standard oxygen mask is a quick-donning sweep-on mask with a microphone and regulator attachment. The mask is a diluter demand type with pressure breathing available by selecting the EMER position. The crew member is assured that oxygen is being received when no restriction to breathing is present with the mask donned and in the 100 percent position. Selection of the EMER position will provide a steady flow of pressurized oxygen in the face cone. To qualify as a quick-donning mask, the mask must be properly stowed in its retainer. (Refer to placard on, or adjacent to, retainer for proper stowage position.) To conserve oxygen when using the mask, the regulator may be set to normal if the cabin altitude is below 20,000 feet.