

Section - III SYSTEMS DESCRIPTION

Sub-section 12 OXYGEN SYSTEM

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GENERAL

Two 750 liter oxygen cylinders (with provision for a third 750 liter cylinder) are mounted in the rear equipment bay between frames 24 and 25. The cylinders are charged to 1800 psi and normally supply oxygen to two quick-release sockets in the flight compartment, two therapeutic outlets and eight drop-out mask units in the passenger cabin and one drop-out mask unit in the toilet compartment.

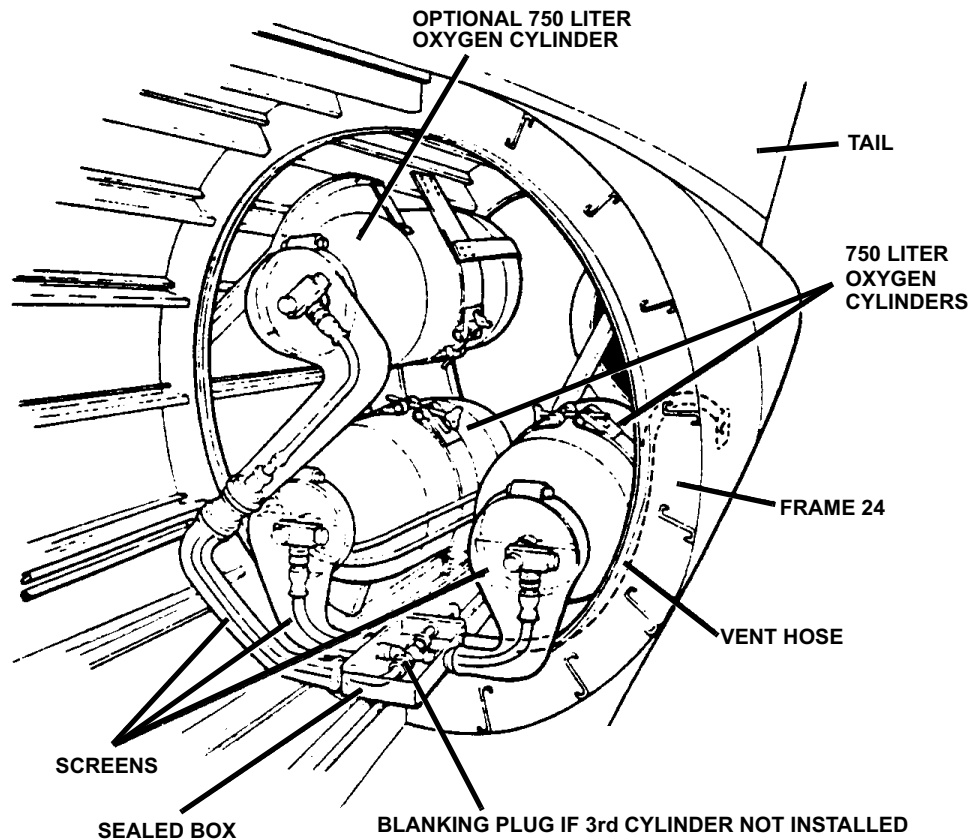
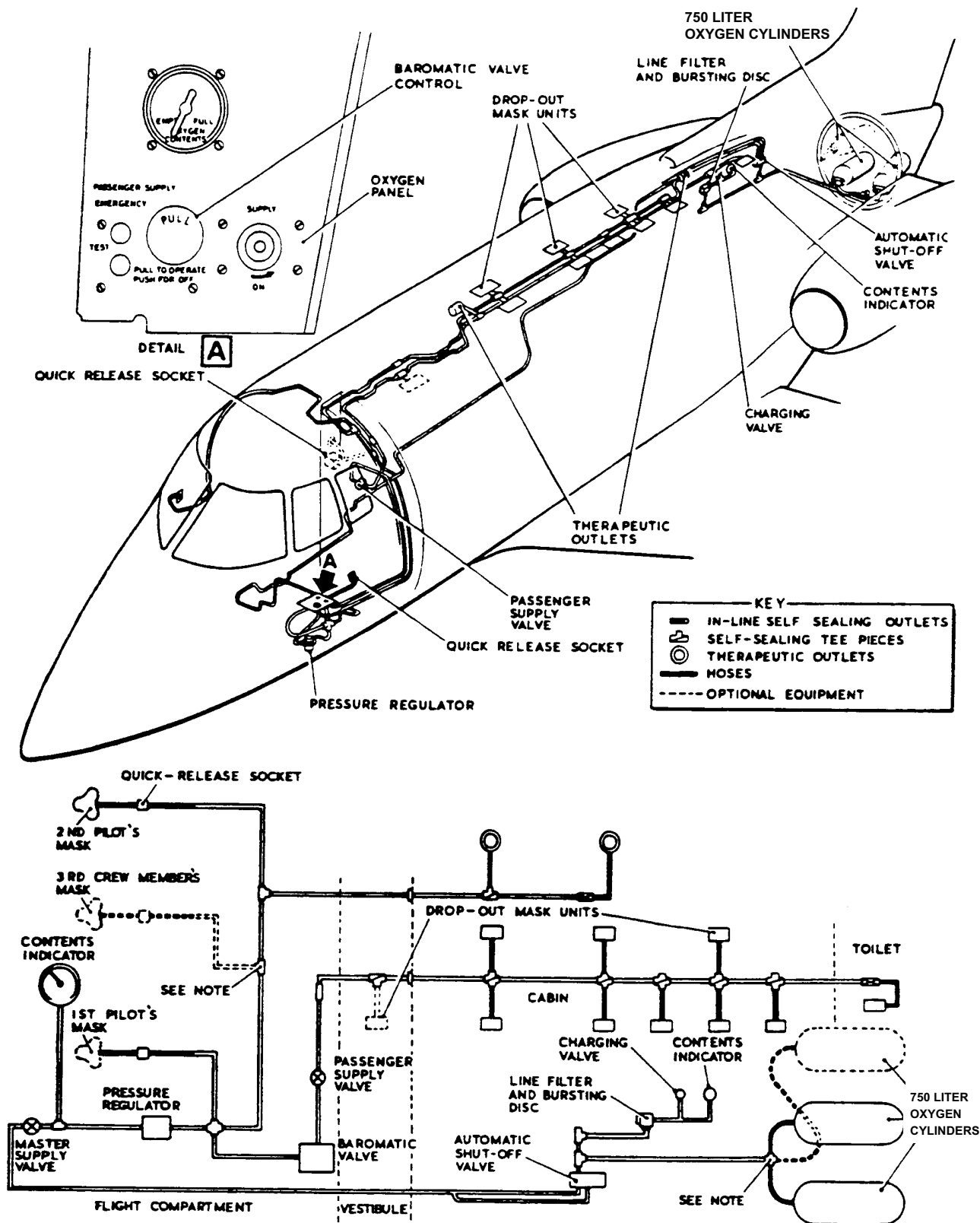


Figure 1
Oxygen Cylinder Assembly

An automatic shut-off valve is located in the oxygen box assembly (Figure 3) which will shut-off the supply of oxygen should there be a rupture of the supply pipeline downstream of the valve. Provision is made to install a regulator and quick-release socket in the forward vestibule cabinet for a third crew member, a drop-out mask in the vestibule, and for additional drop-out mask units in the passenger cabin depending on the number of seats.

Cylinder pressure is reduced to a nominal 70 psi by a pressure regulator incorporating a relief valve operating at 90 psi. The pressure regulator has an integral grounding lug attached to two bonding leads from the adjacent system piping.

The supply for the therapeutic outlets is taken directly from the pressure regulator. The drop-out masks supply is taken from the pressure regulator through a baromatic valve and the passenger supply valve. The baromatic valve automatically causes the masks to fall to the *half-hang* position at a certain cabin altitude and can be operated manually to release the masks at any altitude.



NOTE: A blanking plug is installed if an optional cylinder is not installed.

Figure 2
Oxygen System

SERVICING

The oxygen cylinders are charged through a charging valve in the oxygen box assembly which is situated in the right hand rear fuselage between frames 24 and 25.

A contents indicator is mounted next to the charging valve. The charging supply passes through a line filter and bursting disc assembly before joining the pipeline from the cylinders to the automatic shut-off valve.

The automatic shut-off valve is also located in the oxygen box assembly and is provided to shut off the oxygen supply should there be a rupture of the supply pipeline downstream of the valve.

All system piping is made from stainless steel or light alloy, except for hoses which connect the oxygen cylinders, drop-out mask units, therapeutic outlets, and the mask quick-release sockets.

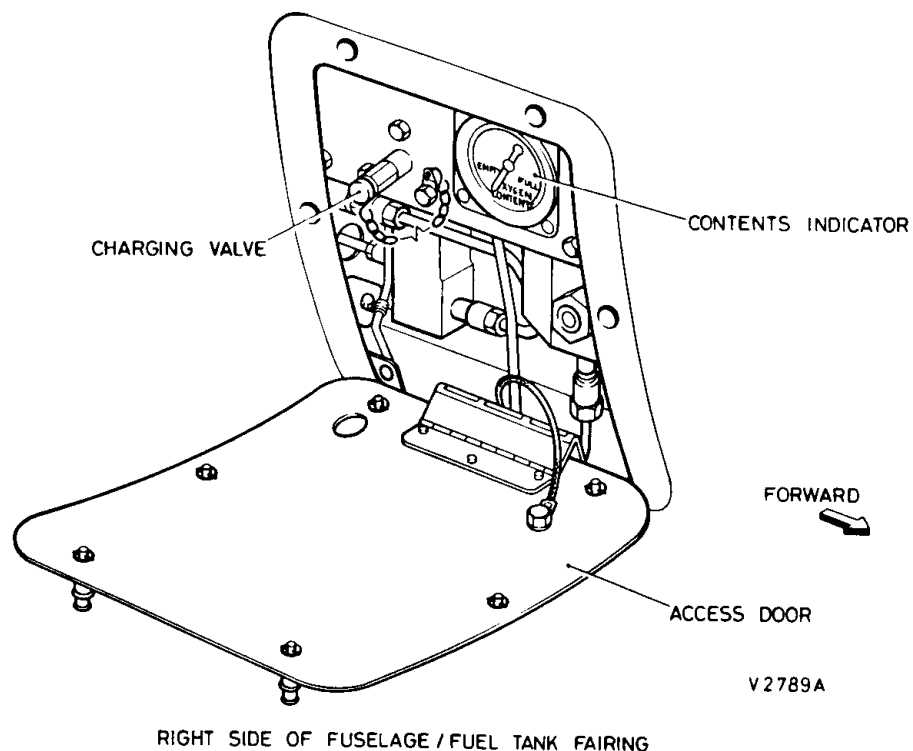


Figure 3
Oxygen Box Assembly

OPERATION

Oxygen from the storage cylinders is fed to the master SUPPLY valve on the flight compartment oxygen panel on the left console.

Opening the master SUPPLY valve allows oxygen to flow to the contents indicator and the pressure regulator, then, at 70 psi to the combined mask-regulators, therapeutic outlets and the baromatic valve.

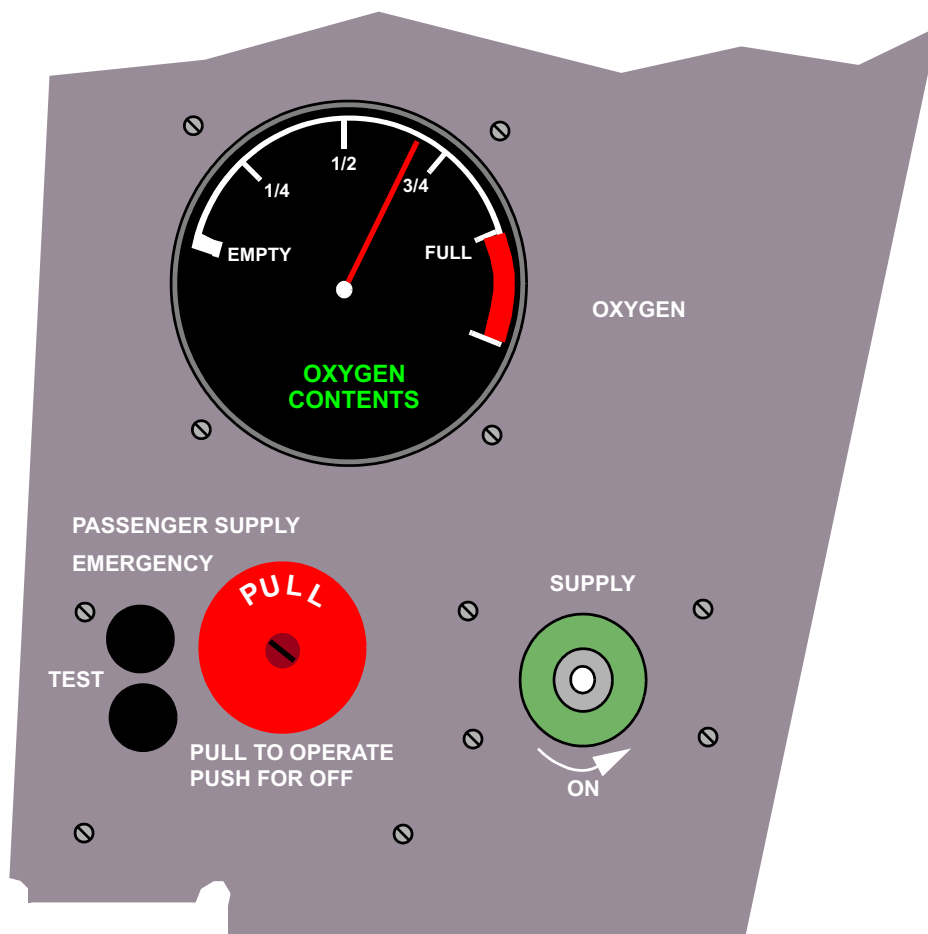


Figure 4
Flight Compartment Oxygen Panel on Left Console

PORTABLE OXYGEN SMOKE SET

The Puritan-Zep portable oxygen smoke set comprises a single 312 liter capacity oxygen cylinder and a smoke mask. The cylinder rests in a fixture secured to the rear of the flight compartment right console.

Pre-Mod. 252939: The top of the cylinder is secured to the forward face of panel DA by a toggle fastener.

Post-Mod. 252939: The cylinder is secured by a toggle fastener, and hinged bracket which covers electrical power points on panel DA.

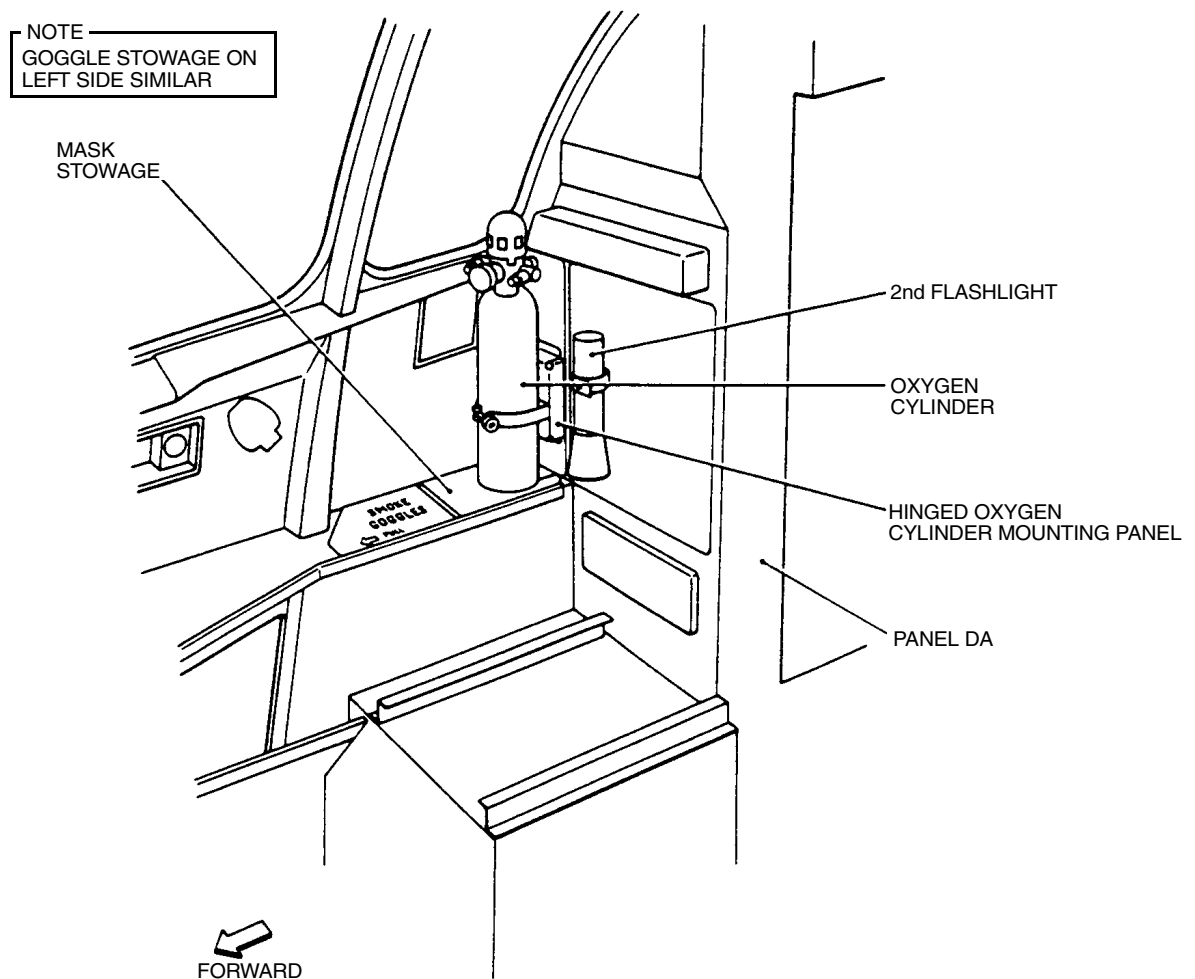


Figure 5
Portable Oxygen Smoke Set

FLIGHT CREW SUPPLY

Mask-Regulator

Under normal flight conditions the mask-regulator is selected to the **N** position. At this setting the ratio of oxygen to air increases with an increase in altitude until at approximately 30,000 feet, when 100% oxygen is supplied.

Between 35,000 and 41,000 feet 100% oxygen at a positive pressure is automatically maintained. However, 100% oxygen is available at any altitude when the mask regulator is selected to the 100% position.

Turning the mask regulator knob to **EMERGENCY** provides a 100% oxygen supply under positive pressure. The regulator can be functionally tested by setting the selector to the 100% position and pushing the regulator knob to **TEST** position. The flow of oxygen can be checked by feel; the test can be carried out with the mask in its stowage.

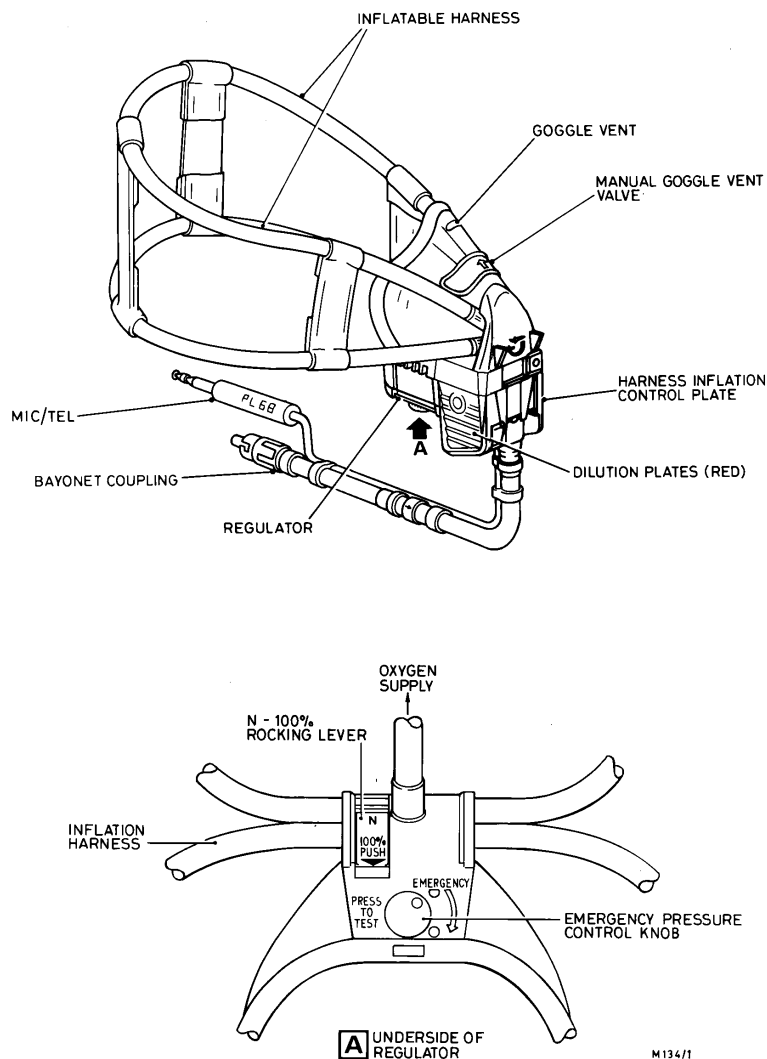


Figure 6
Oxygen Mask and Regulator (Mod. No. 25A025A)

Goggles

Combined smoke goggles and mask-regulators are provided for the flight crew with the goggles stowed in the flight compartment left and right side consoles.

NOTE: Headsets and hats must be removed before donning oxygen masks.

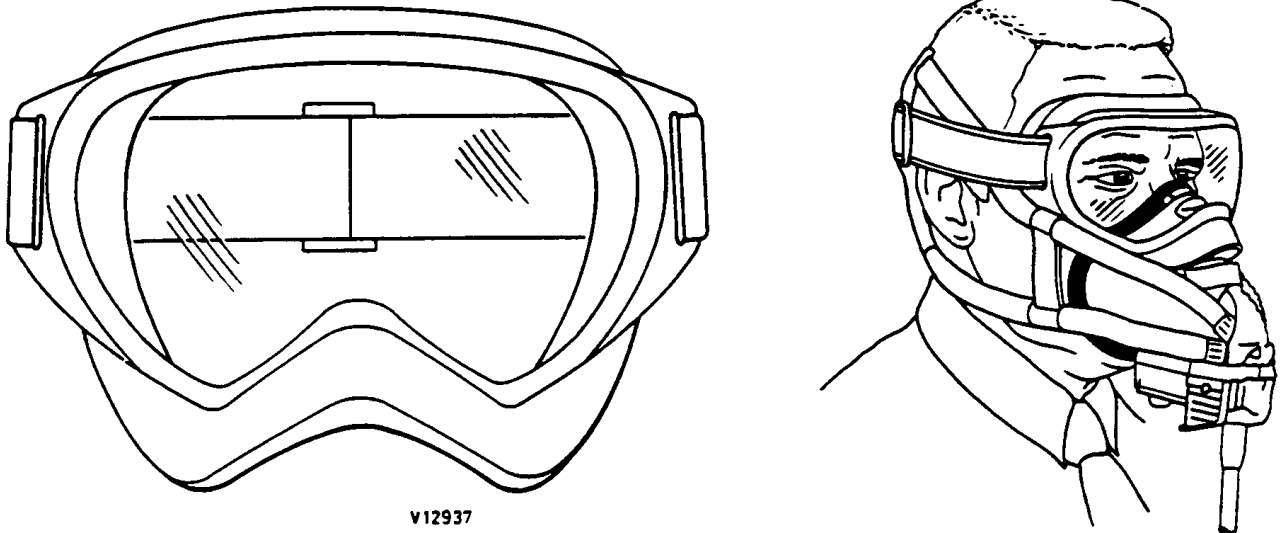


Figure 7
Smoke Goggles and Mask-Regulator

THERAPEUTIC SUPPLY

Oxygen for therapeutic use is available at two self-sealing outlets in the passenger cabin. These outlets incorporate a check valve, spring-loaded against its seating and sealed by two sealing rings.

When the bayonet adapter of the therapeutic mask is inserted, the hollow probe of the adapter unseats the check valve and enters the sealing rings. Oxygen then flows to the mask as shown by an indicator integral with the mask hose.

PASSENGER SUPPLY

The emergency drop-out passenger mask unit consists of a mask and hose assembly and an emergency mask stowage. The emergency mask stowage boxes are provided in the airplane ceiling structure above the passengers' heads and supply oxygen to the single face masks. The stowage opens automatically or manually and allows the mask to drop into the *half hang* position during an emergency.

The mask has a lightweight molded face-piece which can be held against the face with one hand. Metal plates on either side of the base give it support and secure a filter. The mask supply hose assembly consists of two hoses joined by the flow indicator. When the mask is in the stowed position, the flow indicator is held in the carrier clip in the stowage box. In this position the check valve in the flow indicator is held closed and prevents flow of oxygen.

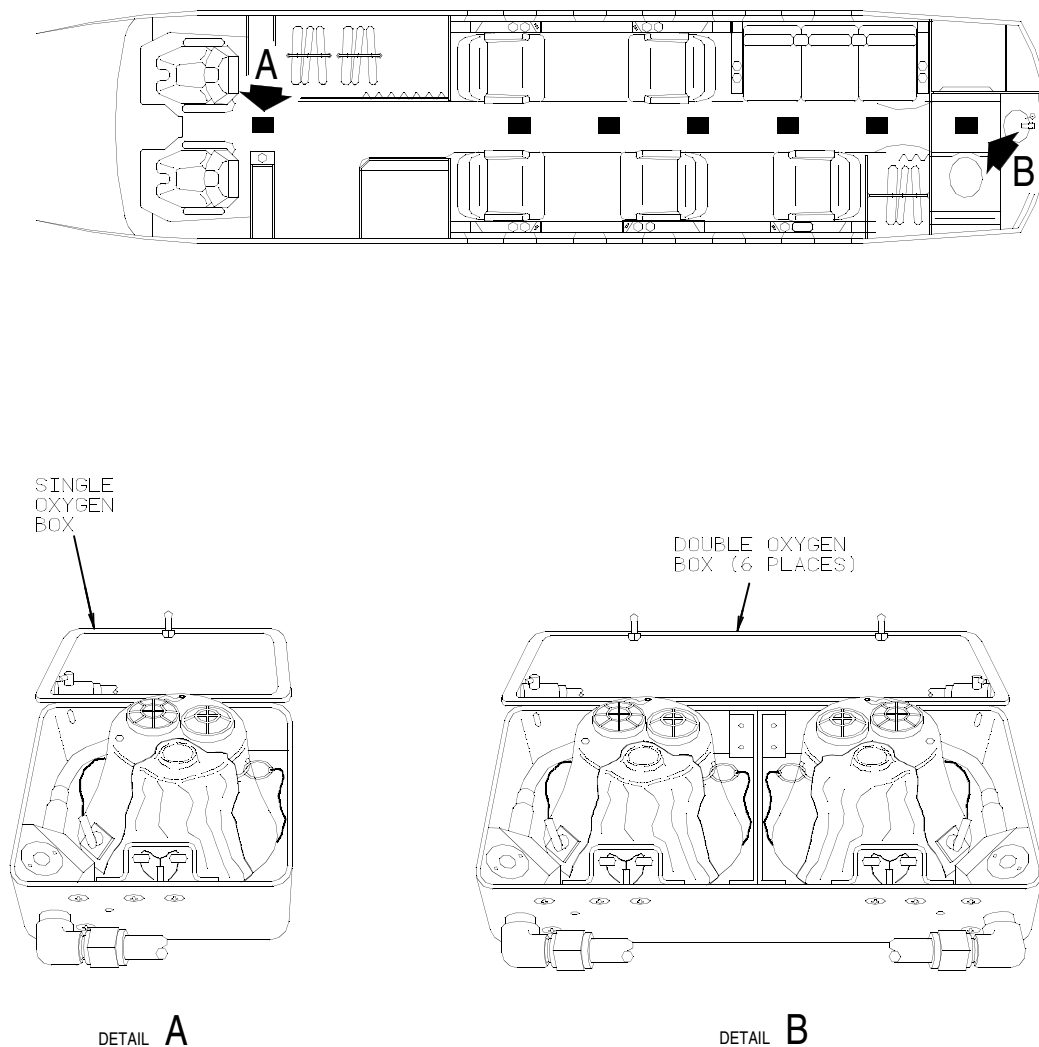
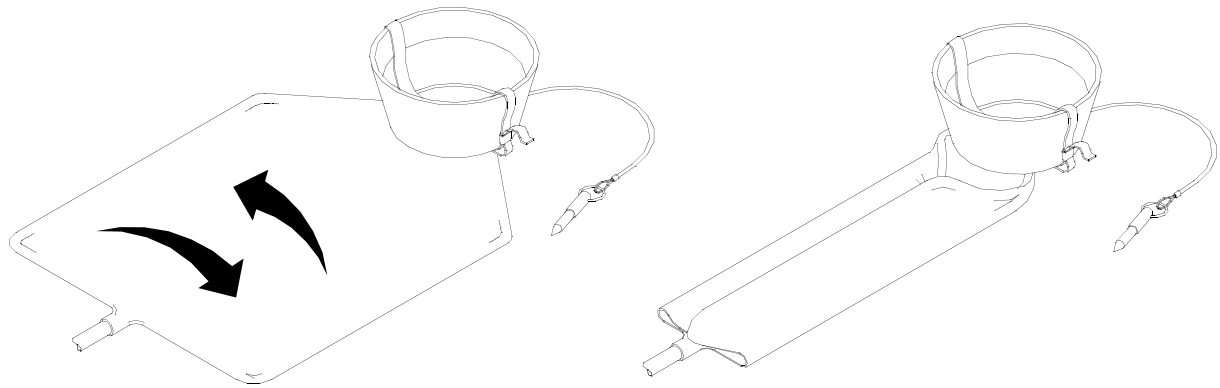
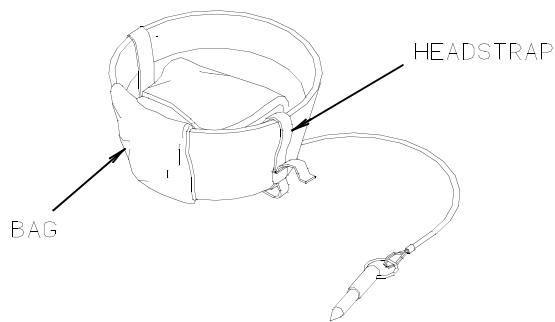


Figure 8
Passenger Oxygen Box Locations and Mask Stowage

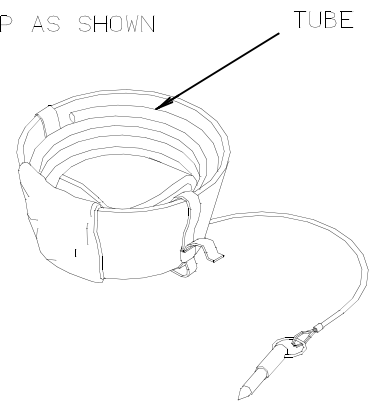
M3120
HA356971875 C



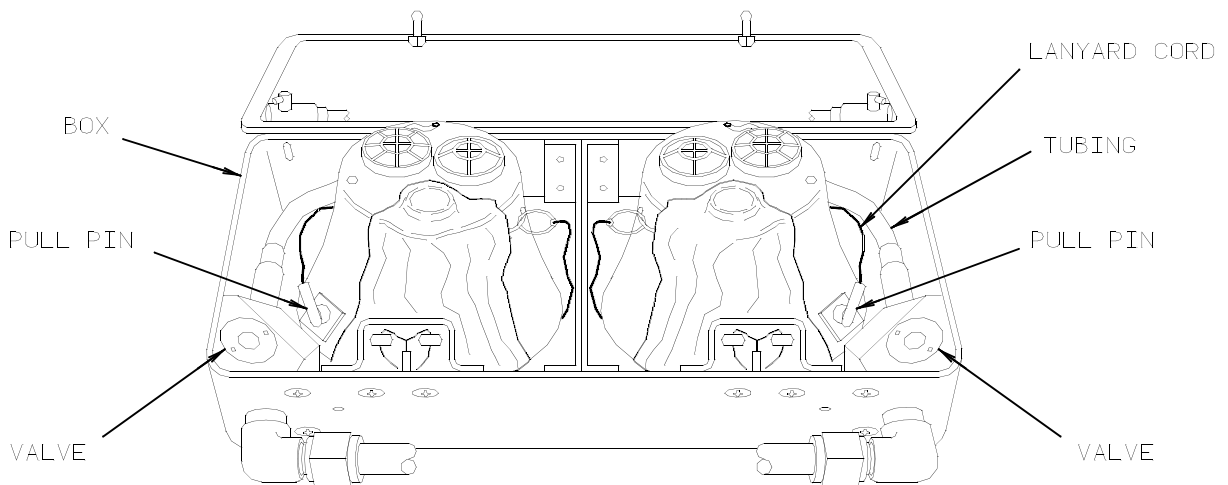
FOLD BAG IN THIRDS SO SIDES OVERLAP AS SHOWN



PLACE HEAD STRAP AND DOUBLE-FOLDED BAG INSIDE FACEPIECE



COIL TUBE AND STOW INSIDE FACEPIECE



INSERT PULL PIN INTO VALVE. PLACE MASK INSIDE BOX WITH TUBING FACING OUT. AVOID CRIMPING TUBE OR TANGLING LANYARD CORD WHEN LATCHING DOOR.

M4719
C95HA35B0368 C

Figure 9
Oxygen Mask Folding and Stowage

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