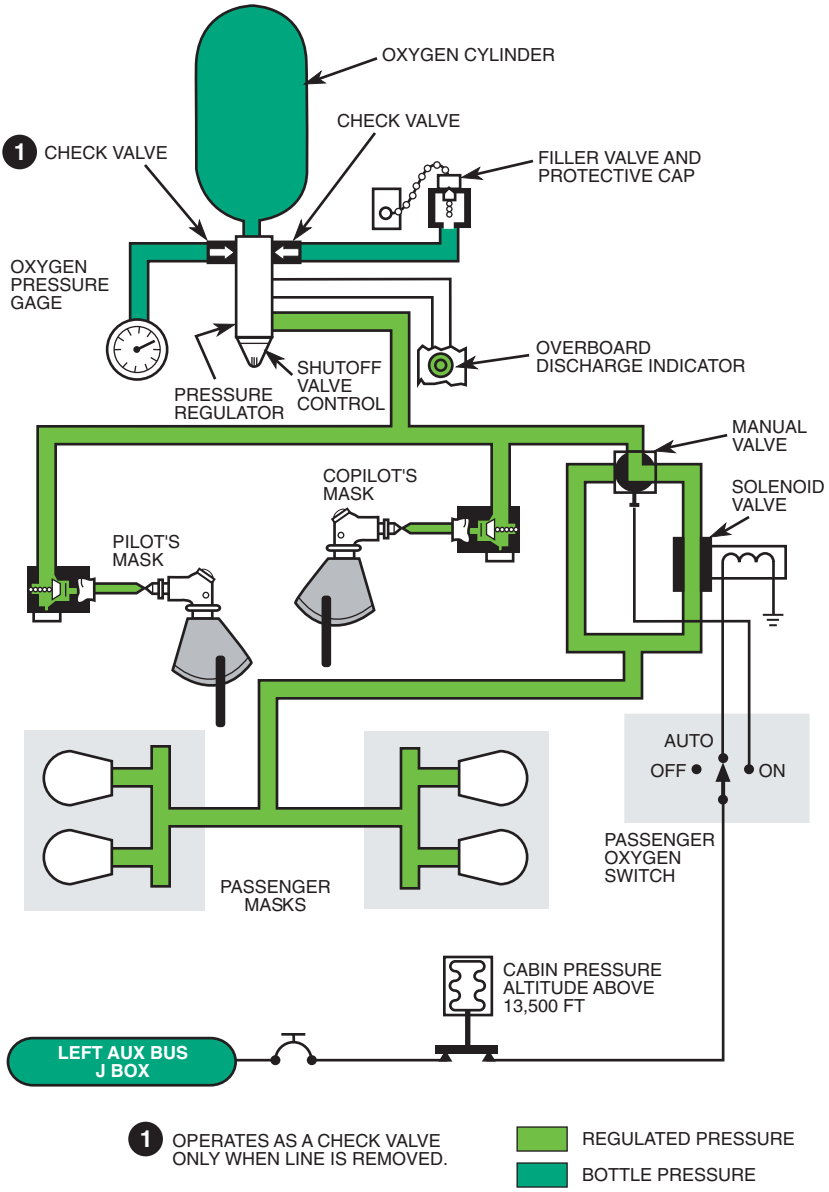
Oxygen System



Oxygen Supply

Oxygen bottle size varies with unit number and customer preference. On **units 001 to 178**, a 49 cubic foot bottle is standard; a 76 cubic foot bottle is available as an option. On **units 179 to 199**, a 76 cubic foot bottle is the standard installation. On **unit 200 and subsequent**, a 76 cubic foot bottle is standard with the 49 cubic foot bottle as an option. Regardless of bottle capacity, normal bottle pressure is 1,850 PSI at 21°C (70°F).

From the oxygen bottle beneath the left nose compartment floor oxygen flows through the regulator assembly before it reaches the crew and passenger oxygen systems. The regulator assembly has a shutoff valve, pressure regulator, and three lines for the oxygen pressure gage, filler valve, and overpressure rupture disc.

The pressure regulator, when supplied with oxygen between 1,850 and 2,000 PSI, reduces bottle pressure to 70 ±10 PSI. If the bottle reaches 2,850 ±150 PSIG at 21°C (70°F) or 2,600 ±100 PSIG at 71°C (160°F), the rupture disc bursts to release bottle contents overboard through a green burst disc on the left nose. The filler valve is on the aft wall of the left nose compartment and the pressure gage is on oxygen control panel. Some aircraft also have a pressure gage above the filler valve.

Distribution

After flowing through the regulator assembly, oxygen flows directly to the pilot and copilot oxygen outlets. The passenger supply flows through a manually operated shutoff valve and a solenoid-operated valve.

Crew System

Each quick-donning diluter-demand crew oxygen mask has a built-in regulator and microphone. With the mask regulator in the NORM position, the regulator dilutes oxygen with cabin air according to cabin altitude. As cabin altitude increases, the regulator increases the oxygen to cabin air ratio until it provides 98% oxygen at 35,100 ft and above. Placing the regulator in the 100% position provides 100% oxygen regardless of cabin altitude. Finally, placing the regulator in the EMER position supplies 100% oxygen at positive pressure.

The optional EROS mask operates similarly to the standard crew oxygen mask. The major difference is the EROS's inflatable harness. During donning the harness inflates to assist in placement over the head, then deflates to make it snug against the user's face. When not required, the mask stores in a cup on the cabin divider behind each crewmember's head.

With the regulator set to N (normal), the regulator dilutes oxygen with cabin air according to cabin altitude. In the 100% position it supplies 100% oxygen at positive pressure. A PRESS TO TEST button on the regulator supplies 100% oxygen at positive pressure for testing purposes.

Passenger System

With the PASS OXY control knob in the AUTO position, oxygen does not flow to the passenger oxygen distribution system at normal cabin altitudes. If cabin altitude exceeds 13,500 ±600 ft, a cabin altitude switch in the pilot's side console closes to energize the oxygen control valve solenoid. The valve opens and oxygen flows to the passenger oxygen masks. The initial pressure actuates door release mechanisms to deploy the passenger oxygen masks. The masks fall and hang by their lanyards. Pulling on the lanyard releases a pin that allows oxygen flow.

Moving the PASS OXY control knob to the ON position manually opens the oxygen control valve and deploys the passenger oxygen masks.

With the control knob in the OFF position, oxygen does not flow regardless of cabin altitude. Normally, the control is left in the AUTO position.

An 11 cubic foot portable oxygen bottle supplements the crew and passenger systems. The bottle, normally stored in the forward cabin, has a pressure regulator with an outlet for a crew oxygen mask and one or two constant-flow outlets for a passenger oxygen mask. This bottle permits freedom of movement for a crew member during emergencies or allows a passenger to use therapeutic oxygen without the need to deployment the passenger oxygen system.

Oxygen System

Power Source	Oxygen cylinder (1,850 PSI at 21°C [70°F]) 49 cubic ft: standard on **units 001 to 178**, optional on **unit 200 and sub**. 76 cubic ft: optional on **units 001 to 178**; standard on **unit 179 and sub**. Portable oxygen bottle (1,800 PSI at 21°C [70°F]) 11 cubic ft: standard with outlets for crew and passenger masks Left Aux bus (J-box) Passenger automatic deployment
Distribution	Crew and passenger oxygen masks
Control	Oxygen bottles shutoff valve (not accessible in flight) Oxygen bottle pressure regulator (bottle pressure to 70 PSI) Barometric switch 13,500 ±600 ft setting PASS OXY control knob (oxygen control panel)
Monitor	Oxygen pressure gage Blowout disc (left nose)
Protection	Pressure regulator rupture disc 2,850 ±150 PSIG at 21°C (70°F) 2,600 ±100 PSIG at 71°C (160°F)