

PNEUMATIC

GENERAL

Two nitrogen bottles are located on the left side of the forward pressure bulkhead and one in the forward left side of the nose compartment. One nitrogen bottle provides for emergency extension of the landing gear and the two other bottles (which are connected by pneumatic tubes), are for emergency braking. Each nitrogen bottle is properly serviced at 1800 to 2050 PSI and can be checked on preflight by gages located in the left nose compartment. A temperature/pressure service table is provided for reference. A relief valve on any of the bottles will rupture at 4000 PSI if the bottle becomes overpressurized.

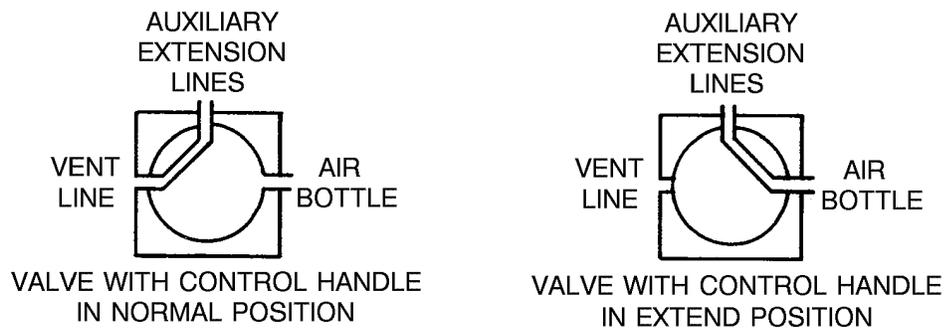
The nitrogen bottles have outlets to the vent lines, the gear emergency extension line and the brake pneumatic pressure line. In its normal position, the emergency brake handle connects the brake pneumatic lines to the vent lines.

When the auxiliary gear control knob under the copilot's instrument panel is pulled, a valve is positioned to direct nitrogen from the bottle through the emergency extension lines to the release side of the gear down lock and then, after the gear is unlocked, to the extend side of the landing gear actuators. When the blowdown knob is pulled the valve is opened and locked in the open position by a detent pin on the operating lever. Pressure will remain on the landing gear actuators until the valve on the nitrogen bottle is reset on the ground. At the end of the gear lowering procedure the knob is reset, however, so that it will not interfere with the copilot's knee.

Emergency braking is controlled through a manually operated, three-way pressure-regulating valve. Nitrogen from the nitrogen bottle is connected directly to the inlet port of the valve by the brake pneumatic pressure line. The outlet port is connected to the brakes and is normally vented to an exhaust line. When the emergency brake handle is pulled, the vent is closed, the inlet port opens, and high pressure nitrogen is applied to shuttle valves in each brake line; the shuttle valves are displaced, opening the brake lines to the nitrogen, blocking off hydraulic fluid to the brakes, and the brakes are applied. Releasing the emergency brake handle opens the vent, relieving pressure. This allows modulation of the system to obtain the desired braking force. Each time the handle is cycled, some nitrogen pressure is vented overboard, reducing the emergency bottle supply.

EMERGENCY AIR BOTTLE CONTROL VALVE

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Figure 2-14