

SECTION V

FUEL SYSTEM

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GENERAL DESCRIPTION

Fuel is stored in five interconnected synthetic rubber cells. The five cells have a total capacity of 150 to 159 U.S. gallons and are installed in the inboard and center wing sections, as shown in Figure 5-2. All fuel cells are serviced through a single filler port, located on top of the right wing above the forward fuel cell. Fuel quantity is measured by a single transmitter, which is installed in the center wing fuel cell and electrically connected to a fuel quantity indicator, located in the pilots instrument panel. A fuel sump, incorporating an electrically-driven fuel boost pump and shutoff valve for each engine fuel supply line, is attached to the bottom of the center fuel cell. The fuel pumps are submerged in the sump fuel. Fuel shutoff valves are interconnected to the boost pumps by an adapter plate and are located on the outer aft end of the fuel sump. The valves may be individually closed to stop fuel flow from the sump to engine supply line, during fuel system maintenance or in-flight emergency. Fuel boost pumps provide fuel pressure for engine starting, an auxiliary source of pressure in the event of engine-driven pump failure, and positive 'failsafe' pressure for takeoff and landing. The engine-driven fuel pumps provide fuel pressure to the engines under normal operating conditions. A fuel vapor separator-filter assembly, installed on each engine firewall, filters the fuel and eliminates vapors from the engine fuel supply. A line connected between each vapor separator-filter and fuel cell system returns fuel vapors and excess fuel from the engine fuel distributor valve to the fuel system. The interconnected fuel cells are vented to atmosphere through vent lines, connected to each forward outboard fuel cell, which protrude

through the lower wing surface. Fuel system drains consist of a fuel boost pump seal drain, fuel sump drain, and individual drains for each vapor separator-filter. A line connected to the left engine fuel pressure indicator line provides fuel for operation of the cabin combustion heater. The heater fuel system is described in Section IX.

MAINTENANCE PRECAUTIONS

The establishment of safe maintenance procedures is necessary to ensure safety of personnel and prevent damage to the aircraft when performing fuel system maintenance. The principle precautions that should be enforced are enumerated as follows:

1. Perform fuel system maintenance in an approved work area.
2. Ground aircraft and maintenance stands to a common ground; ground attaching surfaces must not be painted.
3. Remove external power source and disconnect batteries.
4. Suspend all maintenance except fuel system maintenance, unless area is declared safe from explosive vapors.
5. Assure that fire extinguishing equipment is readily available.
6. Use air-driven power tools only.
7. Use explosive-proof electric lights or flashlights.
8. Wear cotton clothing to avoid possible static electricity discharge.