

**AA-5 SERIES
MAINTENANCE MANUAL**

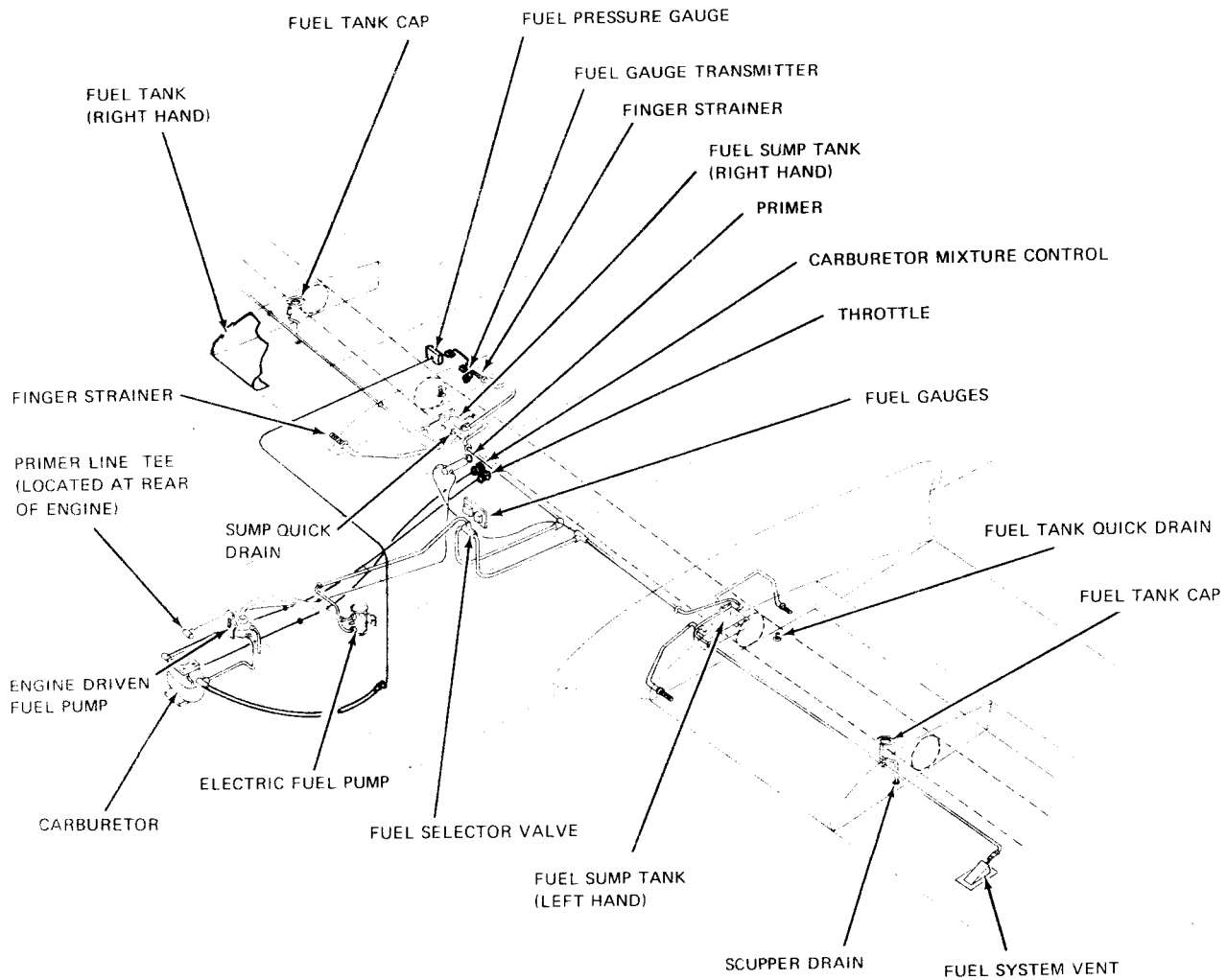
FUEL SYSTEM - DESCRIPTION/OPERATION

1. General (See Figure 1.)

- A. The fuel system consists of two fuel tanks, two sumps, two flush mounted fuel tank vents, a fuel selector valve, an engine-driven fuel pump, an auxiliary electrical fuel pump, and fuel gauges. The fuel tanks are integral parts of the wing and located outboard of the wing root. Fuel is piped to the sumps mounted in the wing roots just below the main spar. From the sumps, fuel is directed to the selector valve mounted on the upper forward console panel and then to the fuel pumps. A tee connector, mounted in the left sump to fuel selector line, provides the connection for the fuel primer line. Two fuel gauges, mounted above the fuel selector valve, are of the electrical type and are connected to fuel sending units in each tank. No gascolator or fuel drain is located in the engine compartment as the fuel system piping slopes downward to the sump drains located under the wing roots. To provide lightning strike protection, the fuel tank vents are flush mounted and maintain a slight positive pressure in flight.
- B. The fuel tank capacities are as follows:

Capacity (U.S. Gal.)	AA-5 & AA-5A (Std. Tanks)	AA-5A (Opt. Tanks)	AA-5B
Total Capacity			
Left Tank	19.0	26.3	26.3
Right Tank	19.0	26.3	26.3
Total	38.0	52.6	52.6
Unusable Fuel			
Left Tank	0.5	0.8	0.8
Right Tank	0.5	0.8	0.8
Total	1.0	1.6	1.6
Usable Fuel			
Left Tank	18.5	25.5	25.5
Right Tank	18.5	25.5	25.5
Total	37.0	51.0	51.0

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Fuel System Diagram - Models AA-5 & AA-5A (Standard)
Figure 1 (Sheet 1 of 2)

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FUEL SYSTEM — MAINTENANCE PRACTICES

1. Fuel Tank and Sump Quick Drains (See Figure 201.)

Two fuel drains are provided beneath each wing, one in each wing tank and one in the fuel sump. The drains are spring-loaded to the closed position to provide a convenient method of draining small samples of fuel for preflight inspection. If fuel system drainage is required, the quick drains may be unscrewed and removed.

On Aircraft AA5-0001 through 0834, AA5A-0001 through 0522, and AA5B-0001 through 0692, the quick drains are as shown in Figure 201. The sampler cup pin is used to press the drain fitting upward allowing a sample of fuel to be taken.

On Aircraft AA5A-0523 and subsequent, and AA5B-0693 and subsequent, the quick drains are similar to those shown in Figure 201, and include a plunger attached to the fitting. The plunger is pushed upward to obtain a sample of fuel.

2. Refueling — Defueling

Refer to Chapter 12 for detailed refueling — Defueling procedures.

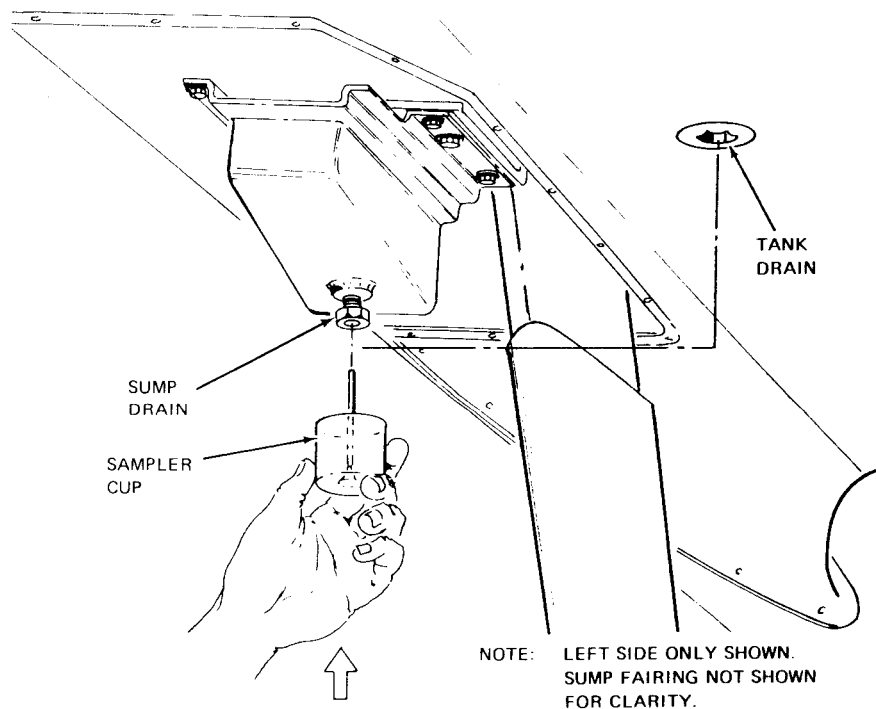
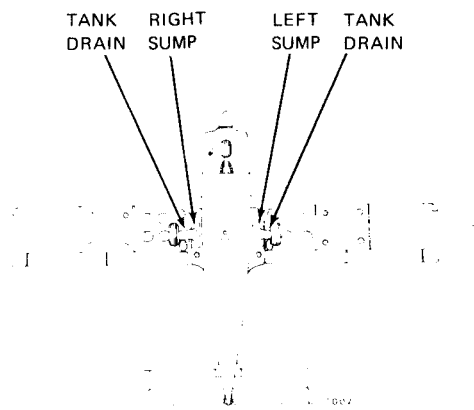
3. Reduction of Fuel Tank Vapor Hazards

A. General Precautions

During all defueling, ventilation, inerting or maintenance procedures involving the fuel system the following general precautions should be observed:

- (1) Defueling should be done outdoors with the aircraft at least 100 feet from hangars or other aircraft.
- (2) No smoking should be allowed within 100 feet of aircraft.
- (3) Suitable fire fighting equipment should be available. Foam or soda type extinguishing agents are recommended.

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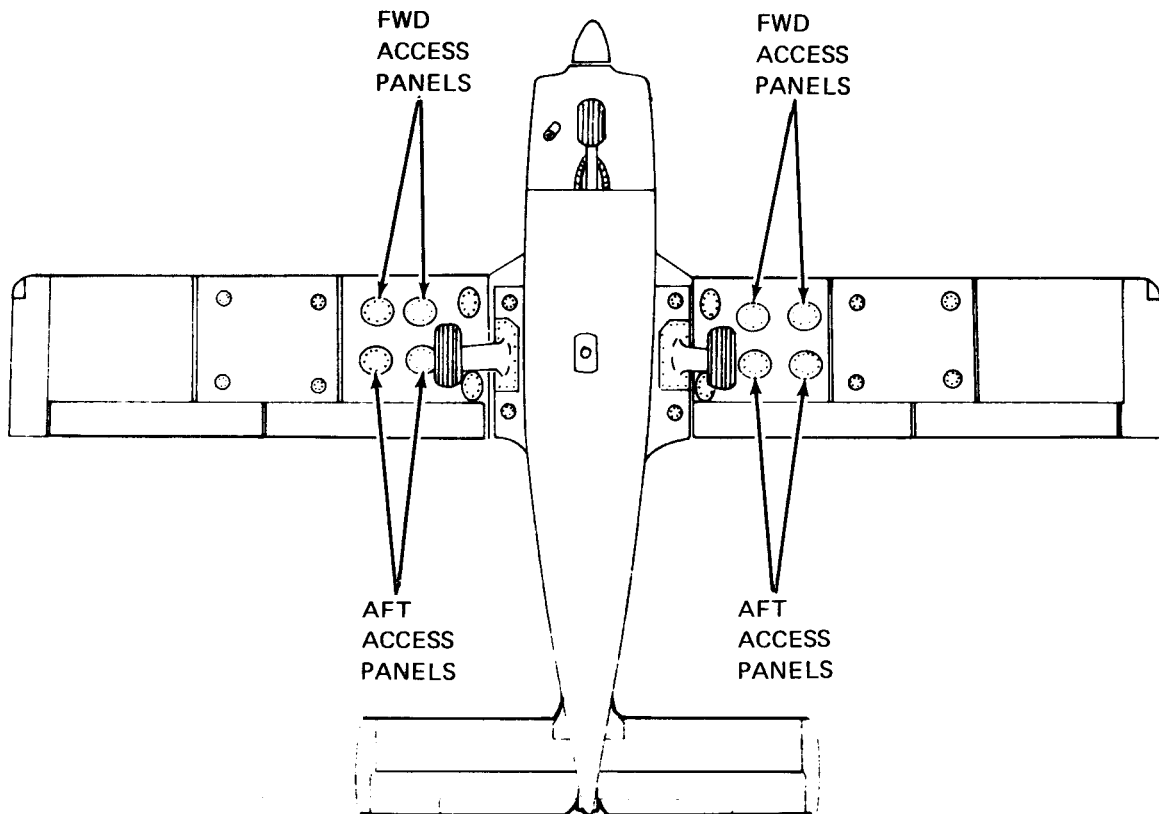
Fuel Sump and Fuel Tank Drain Operation
Figure 201

FUEL STORAGE SYSTEM — DESCRIPTION/OPERATION

1. General

Since the fuel tanks are formed by the inner wing panels, they are nonremovable. Each tank has four access panels, (See Figure 1.) two forward of the wing spar and two aft. The spar and ribs serve as baffles within the tank.

Since the Model AA-5, AA-5A, and AA-5B fuel tanks are similarly constructed, the service information in this Section is applicable to all models. Due to the increased capacity of the optional Model AA-5A and the Model AA-5B tanks, the tank area extends from the leading edge to the trailing edge of two wing bays and the inboard and outboard sides are located in 16 inches and 48 inches from the wing root. The Model AA-5 and standard Model AA-5A tanks are located in the first two inboard bays and have an aft tank bulkhead.



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Fuel Tank Access Panels
Figure 1

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FUEL DISTRIBUTION SYSTEM - DESCRIPTION/OPERATION

1. General

The fuel distribution system is composed of the fuel sump tanks, the fuel selector valve, the electric fuel pump, the engine-driven fuel pump, and the plumbing associated with these components. In addition, the electrical circuitry necessary to supply operating power to the electric fuel pump is included in this system.

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FUEL DISTRIBUTION SYSTEM — MAINTENANCE PRACTICES

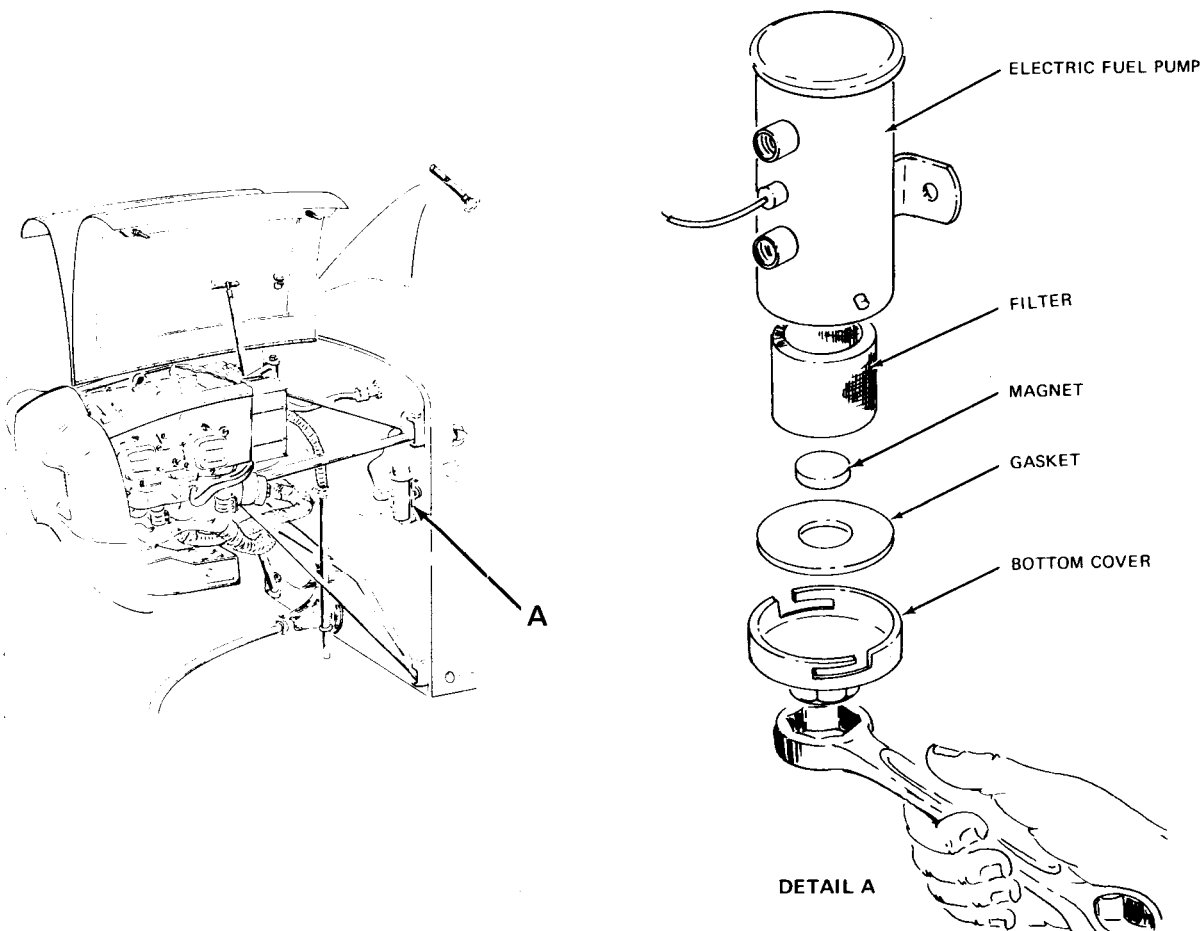
1. Servicing

A. Electric Fuel Pump Filter

- (1) Open top left engine cowl.
- (2) Remove the bottom cover from the fuel pump by cutting the safety wire and turning the cover counter-clockwise with a 5/8 inch wrench. (See Figure 201.)
- (3) Remove the cover, gasket, magnet, and filter.

WARNING: USE SOLVENT IN A WELL VENTILATED AREA. AVOID BREATHING FUMES. KEEP AWAY FROM FLAMES.

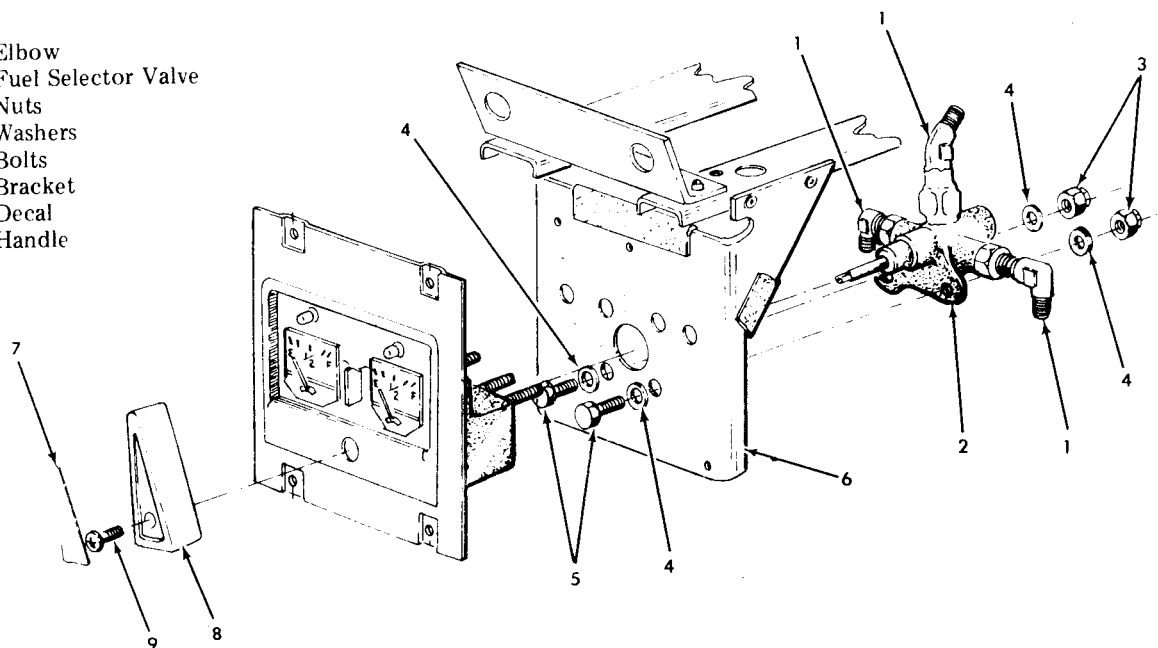
- (4) Clean the filter by rinsing in Stoddard solvent or equivalent and blowing out cleansing agent with compressed air. If filter is distorted or damaged, it should be replaced. Refer to the Parts Catalog for replacement part number.
- (5) Reinstall filter, magnet, gasket and bottom cover.
- (6) Turn bottom cover clockwise until lugs engage, and safety wire with 0.032 wire.



Fuel Pump Servicing
Figure 201

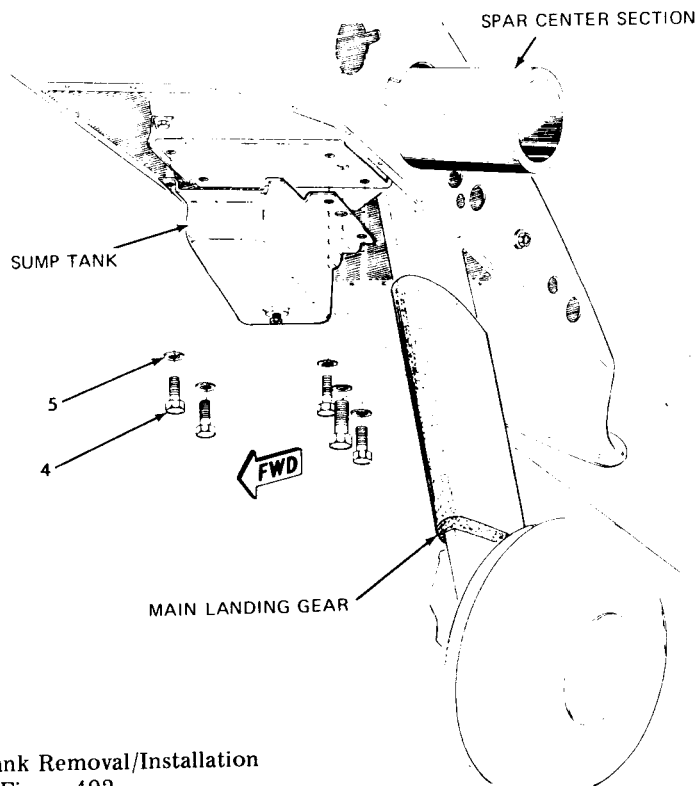
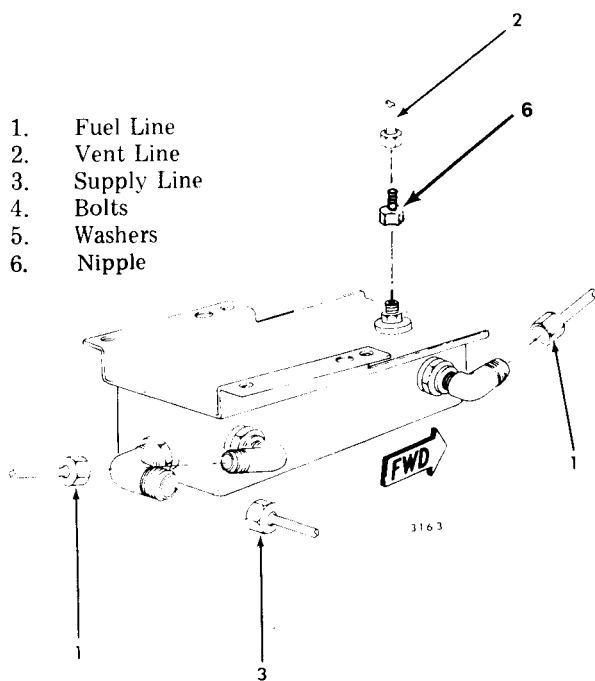
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1. Elbow
2. Fuel Selector Valve
3. Nuts
4. Washers
5. Bolts
6. Bracket
7. Decal
8. Handle



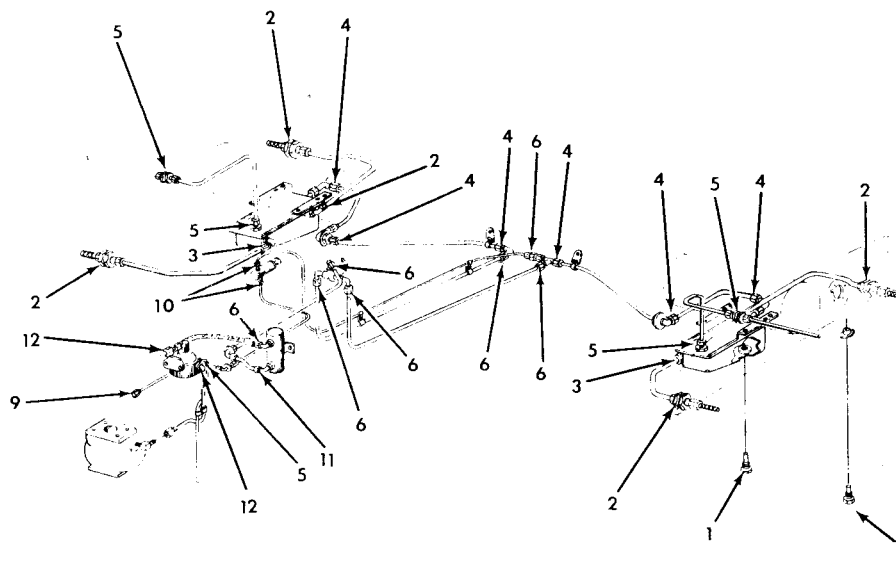
Fuel Selector Valve Removal/Installation
Figure 401

1. Fuel Line
2. Vent Line
3. Supply Line
4. Bolts
5. Washers
6. Nipple



Fuel Sump Tank Removal/Installation
Figure 402

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<u>PART NO.</u>	<u>NAME</u>	<u>INDEX</u>	<u>TORQUE VALUE</u>
F391-53S	Drain Valve	1	25 ± 5 In. lb
AN818-8D	Nut	2	200 ± 50 In. lb
AN924-8D	Nut	3	200 ± 50 In. lb
AN924-6D	Nut	4	100 ± 25 In. lb
AN818-4D	Nut	5	52.5 ± 12.5 In. lb
AN818-6D	Nut	6	100 ± 25 In. lb
AN818-2D	Nut	7	25 ± 5 In. lb
AN924-2D	Nut	8	25 ± 5 In. lb
AN818-2	Nut	9	25 ± 5 In. lb
AN805-2	Nut	10	25 ± 5 In. lb
AN818-6	Nut	11	120 ± 30 In. lb
AN924-6	Nut	12	120 ± 30 In. lb

Fuel System Fitting Torque Values
Figure 403

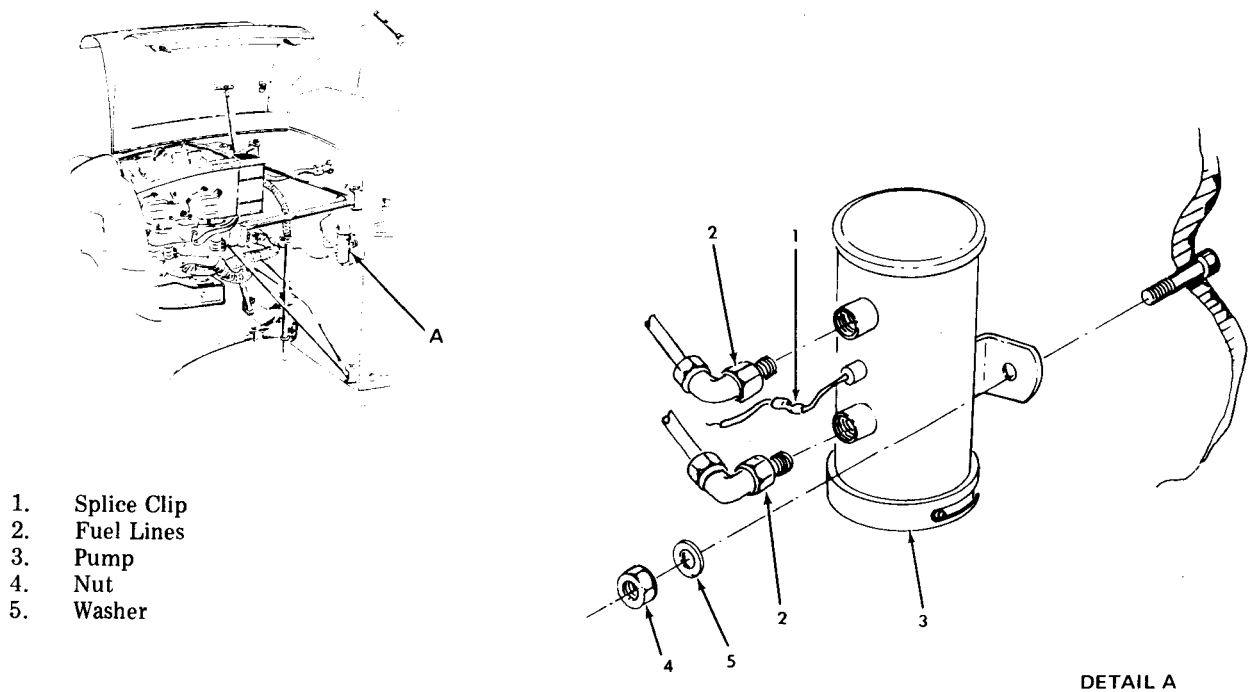
5. Electric Fuel Pump Removal/Installation

A. Electric Fuel Pump Removal (See Figure 404.)

- (1) Disconnect electrical pigtail connector at splice clip (1).
- (2) Disconnect the two fuel lines (2) from the pump (3) and cap fittings.
- (3) Remove the nuts (4) and washers (5) securing the pump (3) to the firewall and remove the pump.

B. Electric Fuel Pump Installation (See Figure 404.)

- (1) Position fuel pump on firewall as shown in Figure 404.
- (2) Install washers (5) and nuts (4).
- (3) Torque to 35 ± 5 inch pounds.
- (4) Clean exposed threads on fuel pump elbow fittings with a stiff bristle brush.
- (5) Torque fittings per Figure 403.
- (6) Reconnect electrical pigtail to wire and crimp connector (1).



Electric Fuel Pump Removal/Installation
Figure 404