

FUEL GENERAL DESCRIPTION AND OPERATION

1. FUEL

A. Fuel System - Overview

The Baron uses an injection type of fuel system. It has either a non-interconnected or an interconnected fuel storage and delivery system. The fuel cells/tanks are located in the wings of the airplane. The number and type of fuel cells/tanks is determined by the total fuel capacity of the airplane and its serial number (Ref. [Table 1](#)).

The non-interconnected fuel systems have two individual fuel cells in each wing. These fuel cells are not connected to each other. Each fuel cell is instead connected by its own individual pumping to the fuel selector valve for that wing and engine. There is a fuel selector valve for each wing and engine. The non-interconnected fuel system has either 112 gallons or 142 gallons of total fuel capacity.

The interconnected fuel systems have two, three, or four individual fuel cells and tanks in each wing depending on the airplane serial and total fuel capacity. These fuel cells and tanks are connected to each other within the wing and allow fuel to flow from fuel cell to fuel cell and to finally accumulate at the system low point, located at the inboard end of the wing inboard leading edge fuel cell. The fuel then flows to the fuel selector valves. As with the non-interconnected fuel system, there is a fuel selector valve for each wing and engine. The interconnected fuel systems have either 142 gallons, 172 gallons, or 200 gallons of total fuel capacity.

Each wing's fuel storage system is normally dedicated to supplying the fuel for that wing's engine. During emergency conditions, all Barons are capable of transferring (crossfeeding) fuel between the separate wing fuel storage systems to the opposite wing/engine fuel selector valve. Fuel crossfeeding shall ONLY be used during emergency conditions and then in level flight.

All Baron fuel systems shall be serviced with aviation gasoline, either 100LL (Blue) preferred or 100/130 (Green) octane minimum grade. If aviation gasoline 100LL (blue) or 100/130 (green) is not available, grade 115/145 (purple) may be used. Only for airplane serials TH-2125 and After, grade No. 95 (RH-95/130) or grade No. 100 (RH-100/130) may be used ([1](#), [Table 1](#), [20-40-00](#)).

Being an injection type system most fuel malfunctions can be attributed to contaminated fuel, therefore, the wheel well mounted strainers, the finger strainers, and the sump strainers should be inspected and cleaned regularly. The frequency of inspection and cleaning will depend upon service conditions, fuel handling equipment, cleanliness, and local sand and dust conditions.

B. Non-Interconnected Fuel System (TC-1 thru TC-1607 and TE-1 thru TE-942 Except TE-938)

Airplane serials TC-1 thru TC-1607 and TE-1 thru TE-942 except TE-938 are equipped with a non-interconnected fuel system (Ref. [Figures 1](#) and [2](#)). There are two fuel tanks in each wing (main and auxiliary). The fuel tanks are connected to their respective selector valves. Plumbing between the selector valves allows for crossfeeding of fuel between the wing fuel tanks. For these airplane serials, the total fuel capacity of the airplane is either 112 gallons or 142 gallons (Ref. [Table 1](#)).

The 112 gallon fuel system has a 25 gallon baffled or unbaffled inboard leading edge main fuel tank with a finger strainer. There is also a 31 gallon auxiliary wing box section fuel tank with a finger strainer. This provides a usable capacity of 53 gallons in each wing or a total of 106 gallons usable for the entire fuel system.

The 142 gallon fuel system has a 40 gallon baffled or unbaffled inboard leading edge main fuel tank with a finger strainer. There is also a 31 gallon auxiliary wing box section fuel tank with a finger strainer. This provides a usable capacity of 68 gallons in each wing or a total of 136 gallons usable for the entire fuel system.

The main items of the fuel management system are the fuel selector valves, the fuel quantity indicators, and the fuel selector panel. The fuel selector panel is located in the cabin fuselage, in front of the spar cover between the front seats and is placarded OFF - AUX - MAIN - CROSSFEED. The fuel selector valve for each engine is located below the fuel selector panel. During normal operation, fuel is consumed from the fuel tanks in each wing as indicated by the fuel selector handles. Two fuel quantity indicators, located in the instrument panel, indicate the amount of fuel in either the main or auxiliary fuel tanks for their respective wings. A two-position fuel tank selector switch located in the pilot's subpanel, determines which fuel tank (main or auxiliary) that the fuel quantity indicators are connected too. Fuel may be used as desired during level flight, however, since fuel from auxiliary tanks must be used in level flight only, sufficient reserve must be retained in the main fuel tanks for takeoff, climb and landing.

The fuel crossfeed operation is ONLY used during emergency conditions and in level flight.

A flush-type filler cap is located in each inboard wing leading edge and in the outboard end of each wing box section fuel tank (a total of four filler caps). There are eight snap-type drains (four drain per wing) in the fuel system. A drain is provided in each wing for the inboard wing leading edge fuel cell sump, the fuel strainer drain, the auxiliary fuel tank sump, and the fuel system low point (located in each side of the cabin fuselage bottom).

C. Interconnected Fuel System (TC-1608 and After; TE-938, TE-942 and After; TH-1 and After)

Airplane serials TC-1608 and After; TE-938, TE-942 and After; and TH-1 and After are equipped with an interconnected fuel system. The fuel cells and tanks in each wing are interconnected and each wing is connected to the other wing which allows the crossfeeding of fuel between the wings. The total fuel capacity of the airplane for these airplane serials is either 142 gallons, 172 gallons, or 200 gallons (Ref. [Table 1](#)).

The 142 gallon system has two fuel cells in each wing (Ref. [Figures 3, 4, and 5](#)). Each wing has an inboard wing leading edge fuel cell. This fuel cell is interconnected to the wing box section fuel cell through the wing front spar. The 142 gallons system provides 68 gallons usable fuel in each wing for a total of 136 gallons usable fuel for the entire fuel system. A flush-type filler cap is located in the outboard end of each wing box section fuel cell (a total of two filler caps).

The 172 gallon system has three fuel cells in each wing (Ref. [Figure 6, 7, and 8](#)). The inboard leading edge fuel cell and the wing box section fuel cell are as described for the 142 gallon system. The additional fuel cell is located in the outboard leading edge of each wing. This fuel cell is interconnected to the other two fuel cells in the wing. The 172 gallons system provides 83 gallons usable fuel in each wing for a total of 166 gallons usable fuel for the entire fuel system. A flush-type filler cap is located in the outboard end of each outboard leading edge fuel cell (a total of two filler caps).

The 200 gallon system has three fuel cells and a wet wing type fuel tank in each wing (Ref. [Figures 9 and 10](#)). The inboard leading edge fuel cell, the wing box section fuel cell, and the outboard leading edge of each wing are as described for the 172 gallon system. The additional wet wing type fuel tank is located in the wing tip of each wing. The fuel tank is interconnected to other three fuel cells in the wing. The 200 gallons system provides 97 gallons usable fuel in each wing for a total of 194 gallons usable fuel for the entire fuel system. A flush-type filler cap is located in the outboard end of each outboard leading edge fuel cell and in the wet wing fuel tank (a total of four filler caps).

The main items of the fuel management system are the fuel selector valves, the fuel quantity indicators, and the fuel selector panel. The fuel selector panel is located in the cabin fuselage, in front of the spar cover between the front seats, is placarded OFF - ON - CROSSFEED. The fuel selector valve for each engine is located below the fuel selector panel. During normal operation, fuel is consumed from each wing system as indicated by the fuel selector handles. Two fuel quantity indicators on the instrument panel indicates the amount of fuel in each wing system.

The fuel crossfeed operation is ONLY to be used during emergency conditions and in level flight.

The following sub-sections provide additional information for the individual fuel systems as it applies to specific airplane serials and fuel system capacities.

(1) Fuel System - Interconnected (TC-1608 thru TC-2002, Except TC-1970)

Airplane serials TC-1608 thru TC-2002 except TC-1970, are equipped with an interconnected 142 gallon fuel system as described under INTERCONNECTED FUEL SYSTEM (TC-1608 AND AFTER; TE-938, TE-942 AND AFTER; TH-1 AND AFTER). For a schematic diagram of the system, refer to [Figure 3](#). In addition to the general description for the system, this system for these airplane serials contain the following:

- There are eight snap-type drains (four drains per wing) in the fuel system. A drain is provided in each wing for the inboard wing leading edge fuel cell sump, the fuel strainer drain, the wing box section fuel cell sump, and the fuel system low point (located in each wing).
- The wing inboard leading edge fuel cell is an unbaffled-type fuel cell and has a fuel reservoir with finger strainer. The fuel outlet nipple from this fuel reservoir passes through the wing root rib to the fuel supply lines.
- On airplane serials TC-1654 thru TC-2002, there is no flapper valve installed between the inboard leading edge fuel cell and the wing box section fuel cell (Ref. [Figure 3](#)).
- On airplane serials TC-1608 thru TC-1657, there are two filtered heater fuel pumps in series with a heater solenoid valve between the pumps and the heater (Ref. [Figure 3](#)).

(2) Fuel System - Interconnected (TC-1970, TC-2003 and After)

Airplane serials TC-1970, TC-2003 and After, are equipped with an interconnected 142 gallon fuel system as described under INTERCONNECTED FUEL SYSTEM (TC-1608 AND AFTER; TE-938, TE-942 AND AFTER; TH-1 AND AFTER). For a schematic diagram of the system, refer to [Figure 5](#). In addition to the general description for the system, this system for these airplane serials contain the following:

- There are six snap-type drains (three drains per wing) in the fuel system. A drain is provided in each wing for the inboard wing leading edge fuel cell sump; the fuel strainer drain; and the wing box section fuel cell sump.
- The wing inboard leading edge fuel cell is an baffled-type fuel cell with a fuel sump and strainer. The fuel outlet nipple from this fuel sump passes through the inboard end of the wing front spar to the fuel supply lines.

(3) Fuel System - Interconnected (TE-938, TE-943 thru TE-1083 Except TE-1081)

Airplane serials TE-938, TE-943 thru TE-1083 except TE-1081, are equipped with either an interconnected 142 gallon fuel system or a 172 gallon fuel system as described under INTERCONNECTED FUEL SYSTEM (TC-1608 AND AFTER; TE-938, TE-942 AND AFTER; TH-1 AND AFTER). For a schematic diagram of the 142 gallon system, refer to [Figure 3](#). For a schematic diagram of the 172 gallon system, refer to [Figure 6](#). In addition to the general description for the system, the system for these airplane serials contain the following:

- There are eight snap-type drains (four drains per wing) in the fuel system. A drain is provided in each wing for the inboard wing leading edge fuel cell sump; the fuel strainer drain; the wing box section fuel cell sump; and the fuel system low point (located in each wing).
- The wing inboard leading edge fuel cell is an unbaffled-type fuel cell with a fuel reservoir and finger strainer. The fuel outlet nipple from this fuel reservoir passes through the wing root rib to the fuel engine supply lines.
- There is no flapper valve installed between the inboard leading edge fuel cell and the wing box section fuel cell (Ref. [Figures 3 and 6](#)).
- There are two filtered heater fuel pumps in series with a heater solenoid valve between the pumps and the heater (Ref. [Figures 3 and 6](#)).
- On the 172 gallon system, the wing outboard leading edge fuel cell has a bottom mounted fuel level transmitter located at the inboard end of the cell.

(4) Fuel System - Interconnected (TE-1081, TE-1084 and After)

Airplane serials TE-1081, TE-1084 and After, are equipped with either an interconnected 142 gallon fuel system or a 172 gallon fuel system as described under INTERCONNECTED FUEL SYSTEM (TC-1608 AND AFTER; TE-938, TE-942 AND AFTER; TH-1 AND AFTER). For a schematic diagram of the 142 gallon system, refer to [Figure 5](#). For a schematic diagram of the 172 gallon system, refer to [Figure 8](#). In addition to the general description for the system, the following applies:

- There are six snap-type drains (three drains per wing) in the fuel system. A drain is provided in each wing for the inboard wing leading edge fuel cell sump; the fuel strainer drain; and the wing box section fuel cell sump.
- The wing inboard leading edge fuel cell is a baffled-type fuel cell with fuel sump and strainer. The fuel outlet nipple from this fuel sump passes through the inboard end of the wing main spar to the fuel engine supply lines.
- On the 172 gallon system, the wing outboard leading edge fuel cell has a bottom mounted fuel level sensor/transmitter located at the inboard end of the fuel cell.

(5) Fuel System - Interconnected (TH-1 thru TH-384)

Airplane serials TH-1 thru TH-384, are equipped with either an interconnected 142 gallon fuel system or a 172 gallon fuel system as described under INTERCONNECTED FUEL SYSTEM (TC-1608 AND AFTER; TE-938, TE-942 AND AFTER; TH-1 AND AFTER). For a schematic diagram of the 142 gallon system, refer to [Figure 5](#). For a schematic diagram of the 172 gallon system, refer to [Figure 8](#). In addition to the general description for the system, the following applies:

- There are six snap-type drains (three drains per wing) in the fuel system. A drain is provided in each wing for the inboard wing leading edge fuel cell sump; the fuel strainer drain; and the wing box section fuel cell sump.
- The wing inboard leading edge fuel cell is a baffled-type fuel cell with fuel sump and strainer. The fuel outlet nipple from this fuel sump passes through the inboard end of the wing main spar to the fuel engine supply lines.
- There is a flapper valve installed between the inboard leading edge fuel cell and the wing box section fuel cell (Ref. [Figures 5 and 8](#)).
- There are two filtered heater fuel pumps in series with a heater solenoid valve between the pumps and the heater (Ref. [Figures 5 and 8](#)).
- There is no fuel level sight gage located in the inboard leading edge fuel tank (Ref. [Figures 5 and 8](#)).
- On the 172 gallon system, the wing outboard leading edge fuel cell has a top mounted fuel level sensor/transmitter located at the inboard end of the fuel cell.

(6) Fuel System - Interconnected (TH-385 thru TH-772 Except TH-766)

Airplane serials TH-385 thru TH-772 except TH-766, are equipped with either an interconnected 142 gallon fuel system, a 172 gallon fuel system, or a 200 gallon fuel system as described under INTERCONNECTED FUEL SYSTEM (TC-1608 AND AFTER; TE-938, TE-942 AND AFTER; TH-1 AND AFTER). For a schematic diagram of the 142 gallon system, refer to [Figure 4](#). For a schematic diagram of the 172 gallon system, refer to [Figure 7](#). For a schematic diagram of the 200 gallon system, refer to

Figure 9. In addition to the general description for the system, the following applies:

- This 200 gallon fuel system was ONLY available for installation on airplane serials TH-669 thru TH-772 except TH-766.
- On the 142 gallon and 172 gallon systems, there are six snap-type drains (three drains per wing) in the fuel system. A drain is provided in each wing for the inboard wing leading edge fuel cell sump, the fuel strainer drain, and the wing box section fuel cell sump.
- On the 200 gallon system, there are six snap-type drains and two flush-type drains (four drains per wing) in the fuel system. A drain is provided in each wing for the inboard wing leading edge fuel cell sump (snap-type), the fuel strainer drain (snap-type), the wing box section fuel cell sump (snap-type), and the wet wing tip tank (flush-type).
- The wing inboard leading edge fuel cell is a baffled-type fuel cell with fuel sump and strainer. The fuel outlet nipple from this fuel sump passes through the inboard end of the wing main spar to the fuel engine supply lines.
- On the 142 gallon and 172 gallon systems, there is no flapper valve installed between the inboard leading edge fuel cell and the wing box section fuel cell (Ref. [Figures 4 and 7](#)).
- On the 142 gallon and 172 gallon systems, there are two filtered heater fuel pumps in series with a heater solenoid valve between the pumps and the heater (Ref. [Figures 4 and 7](#)).
- On the 172 gallon system, the wing outboard leading edge fuel cell has a bottom mounted fuel level sensor/transmitter located at the inboard end of the fuel cell.

(7) Fuel System - Interconnected (TH-766, TH-773 and After)

Airplane serials TH-766, TH-773 and After, are equipped with either an interconnected 142 gallon fuel system, a 172 gallon fuel system, or a 200 gallon fuel system as described under INTERCONNECTED FUEL SYSTEM (TC-1608 AND AFTER; TE-938, TE-942 AND AFTER; TH-1 AND AFTER). For a schematic diagram of the 142 gallon system, refer to [Figure 5](#). For a schematic diagram of the 172 gallon system, refer to [Figure 8](#). For a schematic diagram of the 200 gallon system, refer to [Figure 10](#). In addition to the general description for the system, the following applies:

- On the 142 gallon and 172 gallon systems, there are six snap-type drains (three drains per wing) in the fuel system. A drain is provided in each wing for the inboard wing leading edge fuel cell sump, the fuel strainer drain, and the wing box section fuel cell sump. On airplane serials TH-1488, TH-1600, TH-1613 and After, an additional flush-type drain was added to the plumbing of the fuel selector valve in each wing (drain seven and eight).
- On the 200 gallon system, there are six snap-type drains and two flush-type drains (four drains per wing) in the fuel system. A drain is provided in each wing for the inboard wing leading edge fuel cell sump (snap-type), the fuel strainer drain (snap-type), the wing box section fuel cell sump (snap-type), and the wet wing tip tank (flush-type). On airplane serials TH-1488, TH-1600, TH-1613 and After, an additional flush-type drain was added to the plumbing of the fuel selector valve in each wing (drain nine and ten).
- A fuel level sight gage is located in the wing inboard leading edge fuel cells, outboard of the engine nacelle. These gages are used for fuel off-loading and are not to be used as fuel quantity indicators.
- The wing inboard leading edge fuel cell is a baffled-type fuel cell with fuel sump and strainer. The fuel outlet nipple from this fuel sump passes through the inboard end of the wing main spar to the fuel engine supply lines.
- On the 172 gallon and 200 gallon systems, the wing outboard leading edge fuel cell has a bottom mounted fuel level sensor/transmitter located at the inboard end of the fuel cell.

D. Fuel Flow Indicator System (TC-2276, TC-2363 and After; TE-1183 and After; TH-1199 and After)

The fuel flow indicator system is an aid to the pilot when leaning the engines during flight. The major components of the system are the transducer or transmitter and the indicator. The transducer or transmitter is located in the fuel line of each engine forward of the firewall. This device generates a signal that is directed to the fuel flow indicator. The fuel flow indicator gives a readout in gallons of fuel per hour. The indicator has dual pointers, one for each engine, and is located in the upper RH corner of the engine instruments cluster. The circuit breaker is located in the left subpanel.

Table 1
Fuel System Capacities and Applicable Airplane Serials

Airplane Serials	System Schematic Reference	Capacity and Type of System	Number of Fuel Cells/Tanks per Wing	Fuel Selector Placarded Positions
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TC-1 thru TC-1607; TE-1 thru TE-942 Except TE-938	Figure 2	112 Gallons (106 Gallons Usable) Non-Interconnecting Fuel System	Two Tanks	OFF AUX MAIN CROSSFEED
		OR		
TC-1 thru TC-1607; TE-1 thru TE-942 Except TE-938	Figure 2	142 Gallons (136 Gallons Usable) Non-Interconnecting Fuel System	Two Tanks	OFF AUX MAIN CROSSFEED
TC-1608 thru TC-2002 Except TC-1970	Figure 3	142 Gallons (136 Gallons Usable) Interconnecting Fuel System	Two Fuel Cells	OFF ON CROSSFEED
TC-1970, TC-2003 and After	Figure 5			
TE-938, TE-943 thru TE-1083 Except TE-1081	Figure 6	142 Gallons (136 Gallons Usable) Interconnecting Fuel System	Two Fuel Cells	OFF ON CROSSFEED
TE-1081, TE-1084 and After	Figure 5			
		OR		
TE-938, TE-943 thru TE-1083 Except TE-1081	Figure 6	172 Gallons (166 Gallons Usable) Interconnecting Fuel System	Three Fuel Cells	OFF ON CROSSFEED
TE-1081, TE-1084 and After	Figure 8			
TH-1 thru TH-384	Figure 5	142 Gallons (136 Gallons Usable) Interconnecting Fuel System	Two Fuel Cells	OFF ON CROSSFEED
TH-385 thru TH-772 Except TH-766	Figure 4			
TH-766, TH-773 and After	Figure 5			
		OR		
TH-1 thru TH-384	Figure 8	172 Gallons (166 Gallons Usable) Interconnecting Fuel System	Three Fuel Cells	OFF ON CROSSFEED
TH-385 thru TH-772 Except TH-766	Figure 7			
TH-766, TH-773 and After	Figure 8			
		OR		
TH-669 thru TH-772 Except TH-766	Figure 9	200 Gallons (194 Gallons Usable) Interconnecting Fuel System	Three Fuel Cells and One Wet Wing Tank	OFF ON CROSSFEED
TH-766, TH-773 and After	Figure 10			

Figure 001 : Sheet 1 : Fig 1 - Fuel System (TC-1 thru TC-1607; TE-1 thru TE-942 Except TE-938)

E16161

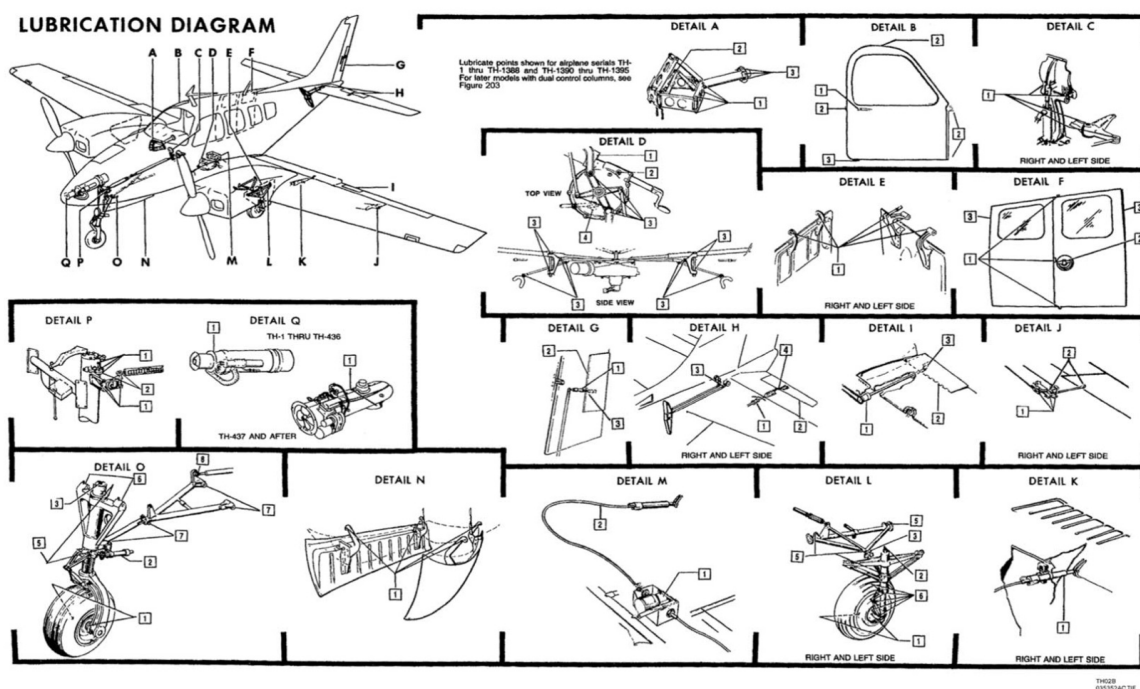
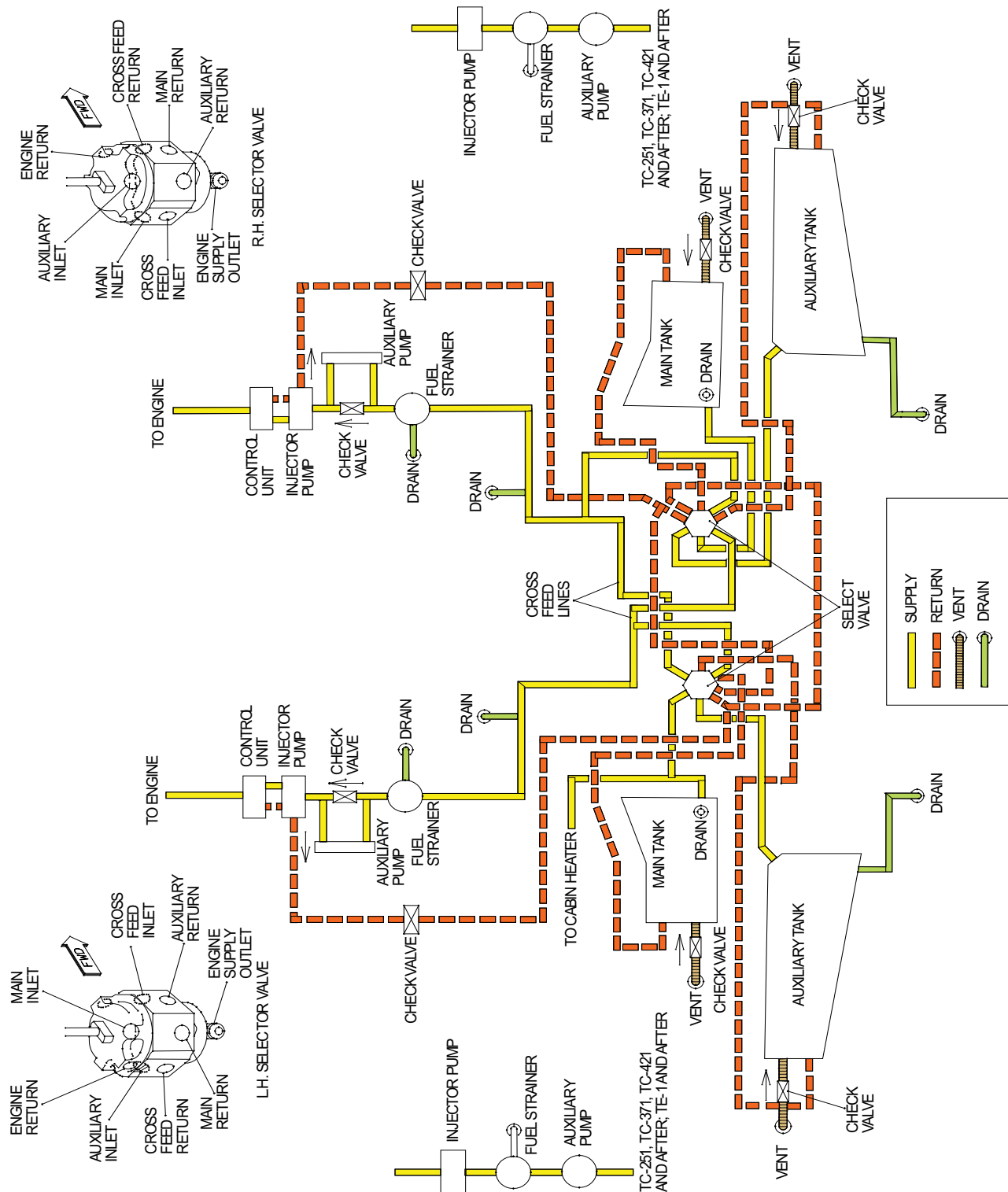


Figure 002 : Sheet 1 : Fig 2 - 112 Gallon and 142 Gallon Non-Interconnected Fuel System Schematic (TC-1 thru TC-1607; TE-1 thru TE-942, Except TE-938)

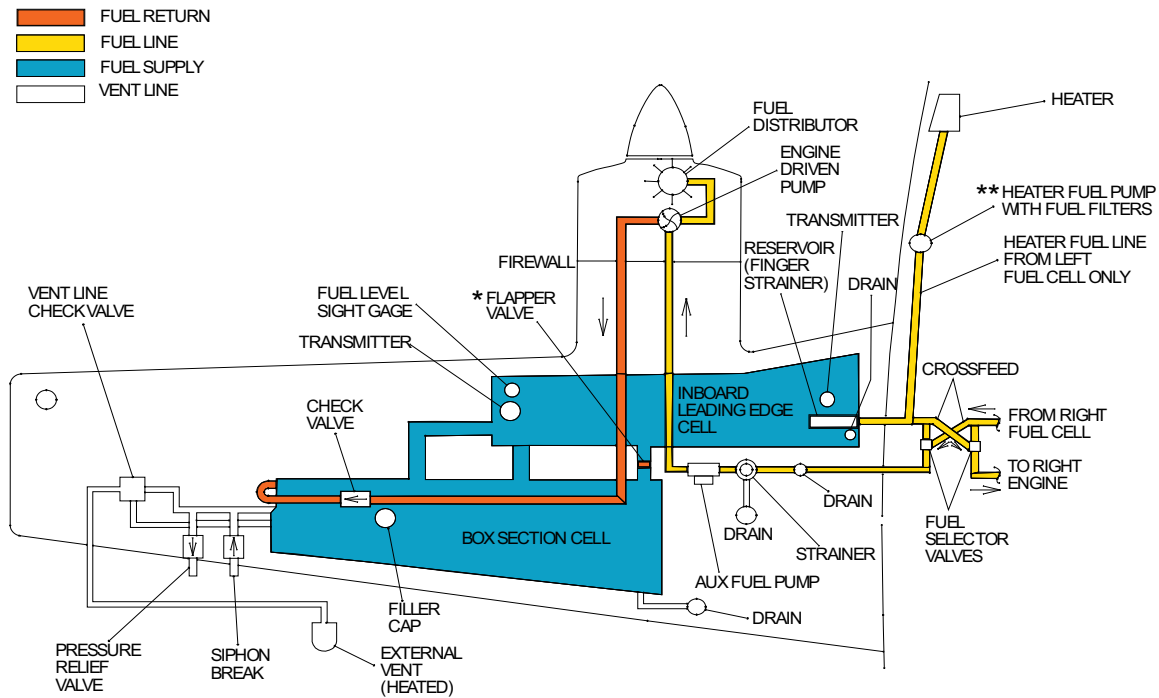
E20830



TH28B
061968AA AI

Figure 003 : Sheet 1 : Fig 3 - 142 Gallon, Interconnected Fuel System Schematic (TC-1608 thru TC-2002, Except TC-1970; TE-938, TE-943 thru TE-1083, Except TE-1081)

E20832



* TC-1654 THRU TC-2002 AND TE-964 THRU TE-1083 DO NOT HAVE FLAPPER VALVE

** TC-1608 THRU TC-1657 AND TE-938, TE-943 THRU TE-967 EXCEPT TE-969 HAS TWO FILTERED HEATER FUEL PUMPS IN SERIES WITH A HEATER SOLENOID VALVE BETWEEN PUMPS AND HEATER

T128B
061969AA.AI

Figure 004 : Sheet 1 : Fig 4 - 142 Gallon, Interconnected Fuel System Schematic (TH-385 thru TH-772, Except TH-766)

E20842

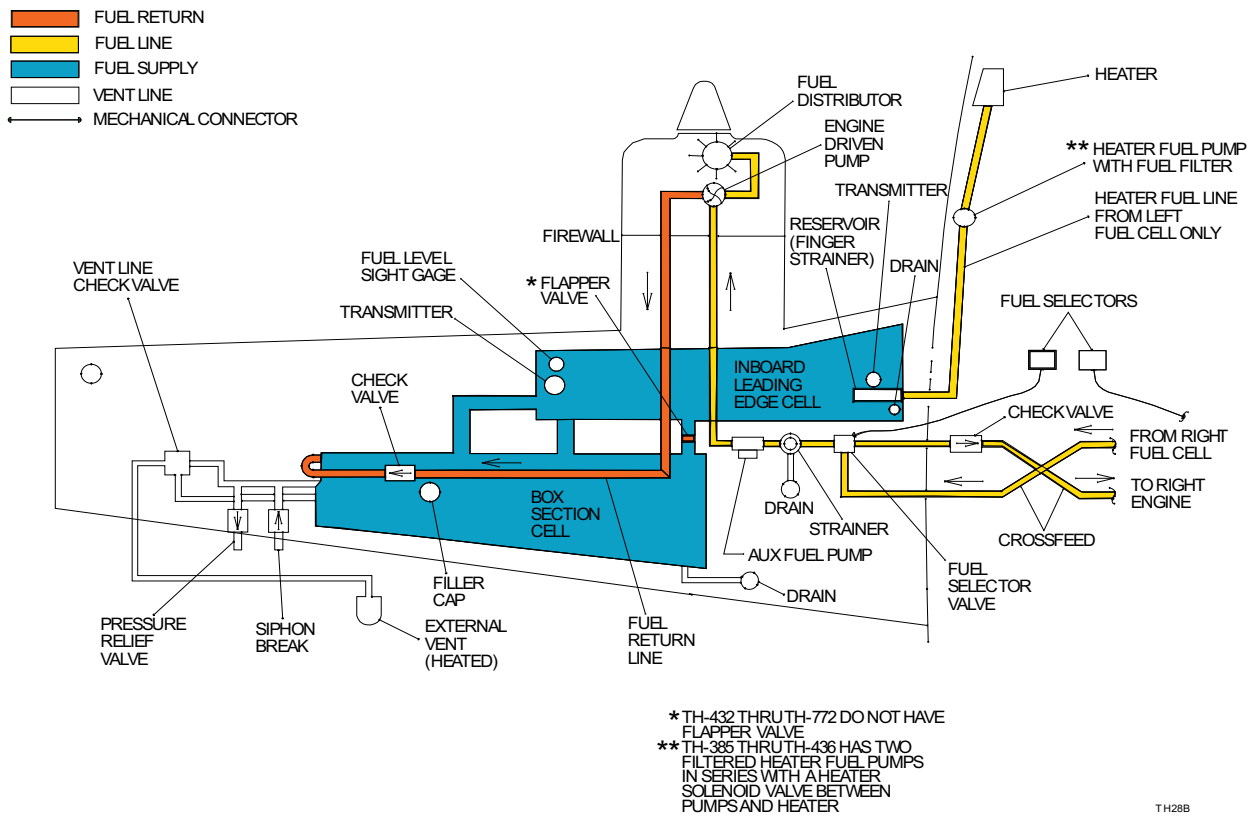
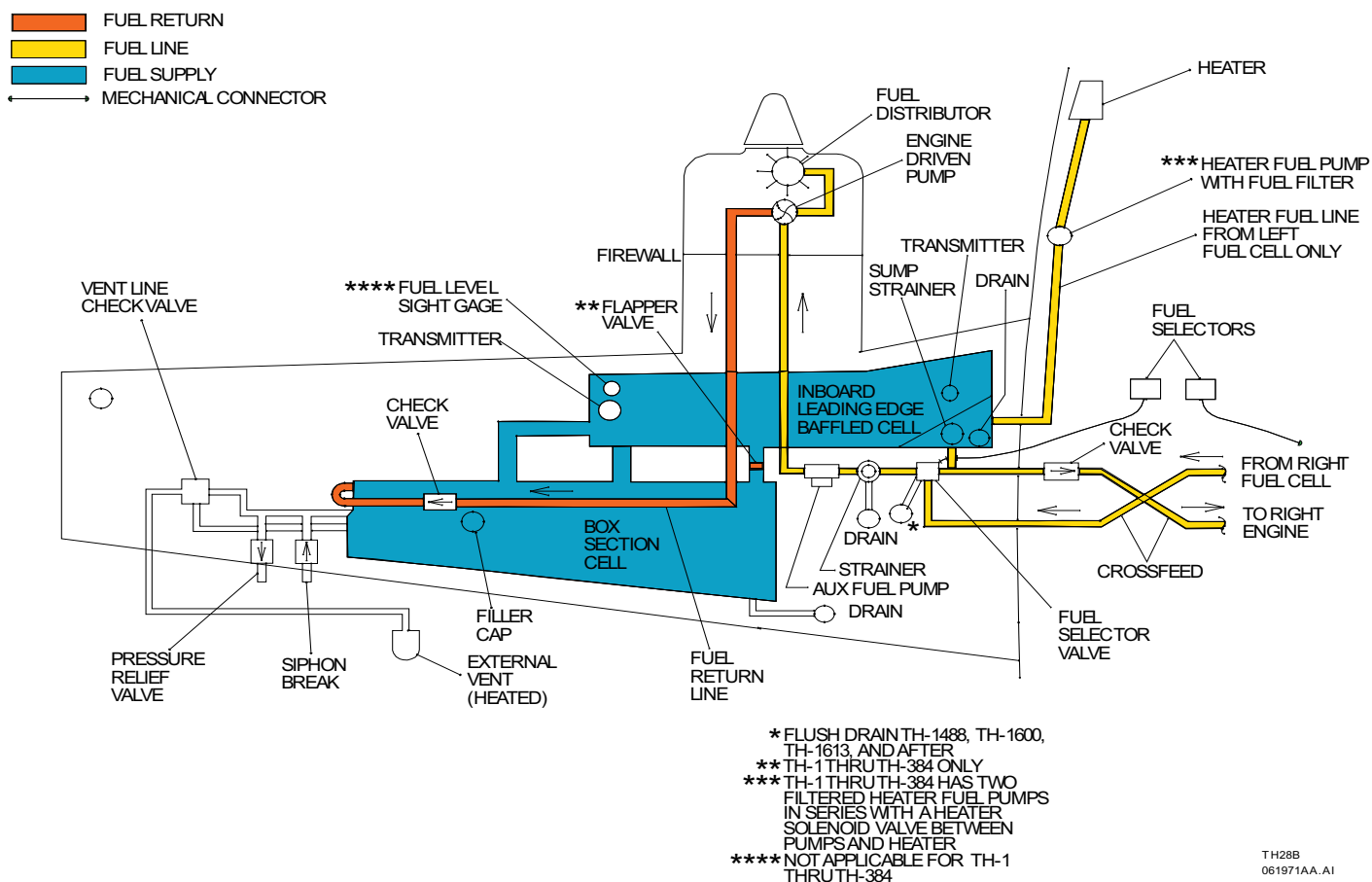


Figure 005 : Sheet 1 : Fig 5 - 142 Gallon, Interconnected Fuel System Schematic (TC-1970, TC-2003 and After; TE-1081, TE-1084 and After; TH-1 thru TH-384, TH-766, TH-773 and After)

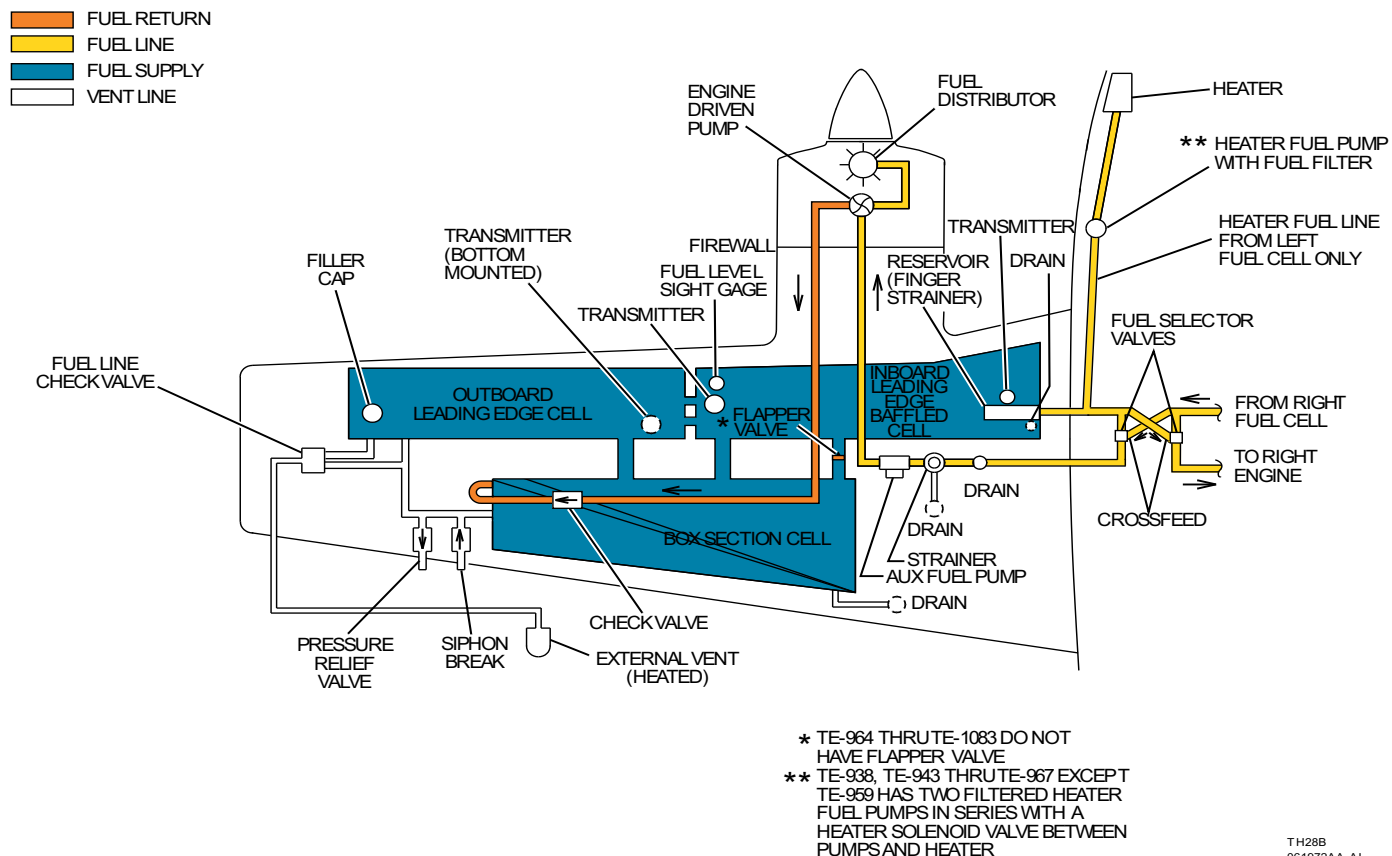
E20909



TH28B
061971AA, A1

Figure 006 : Sheet 1 : Fig 6 - 172 Gallon, Interconnected Fuel System Schematic (TE-938, TE-943 thru TE-1083, Except TE-1081)

E21580

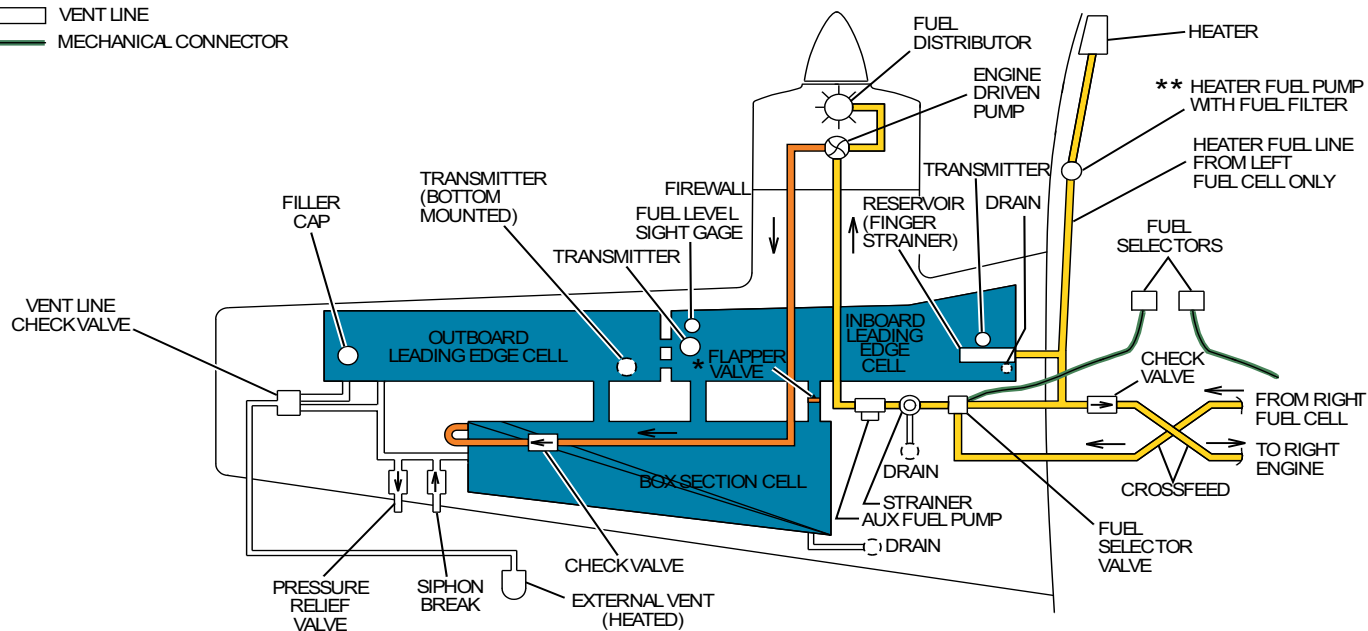


TH28B
061972AA, AI

Figure 007 : Sheet 1 : Fig 7 - 172 Gallon, Interconnected Fuel System Schematic (TH-385 thru TH-772, Except TH-766)

E21859

- FUEL RETURN
- FUEL LINE
- FUEL SUPPLY
- VENT LINE
- MECHANICAL CONNECTOR



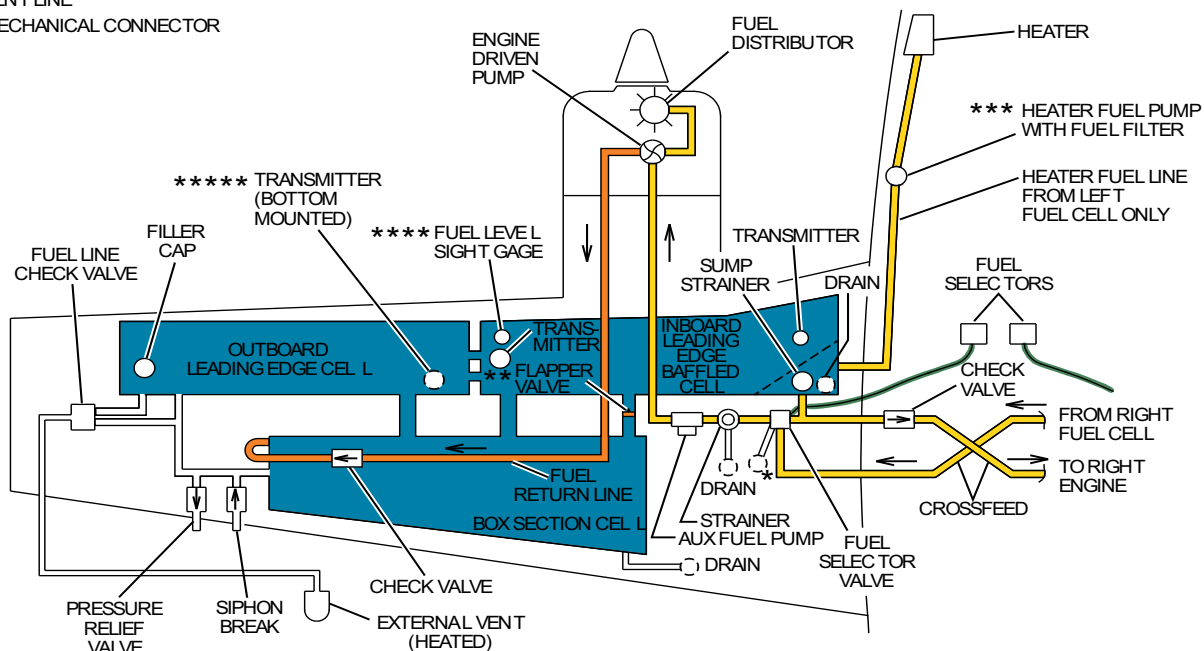
- * TH-432 THRU TH-772 DO NOT HAVE FLAPPER VALVE
- ** TH-385 THRU TH-436 HAS TWO FILTERED HEATER FUEL PUMPS IN SERIES WITH A HEATER SOLENOID VALVE BETWEEN PUMPS AND HEATER

TH28B
061973AA.A1

Figure 008 : Sheet 1 : Fig 8 (Revised) - 172 Gallon, Interconnected Fuel System Schematic (TE-1081, TE-1084 and After; TH-1 thru TH-384, TH-766, TH-773 and After)

E21946

- FUEL RETURN
- FUEL LINE
- FUEL SUPPLY
- VENT LINE
- MECHANICAL CONNECTOR



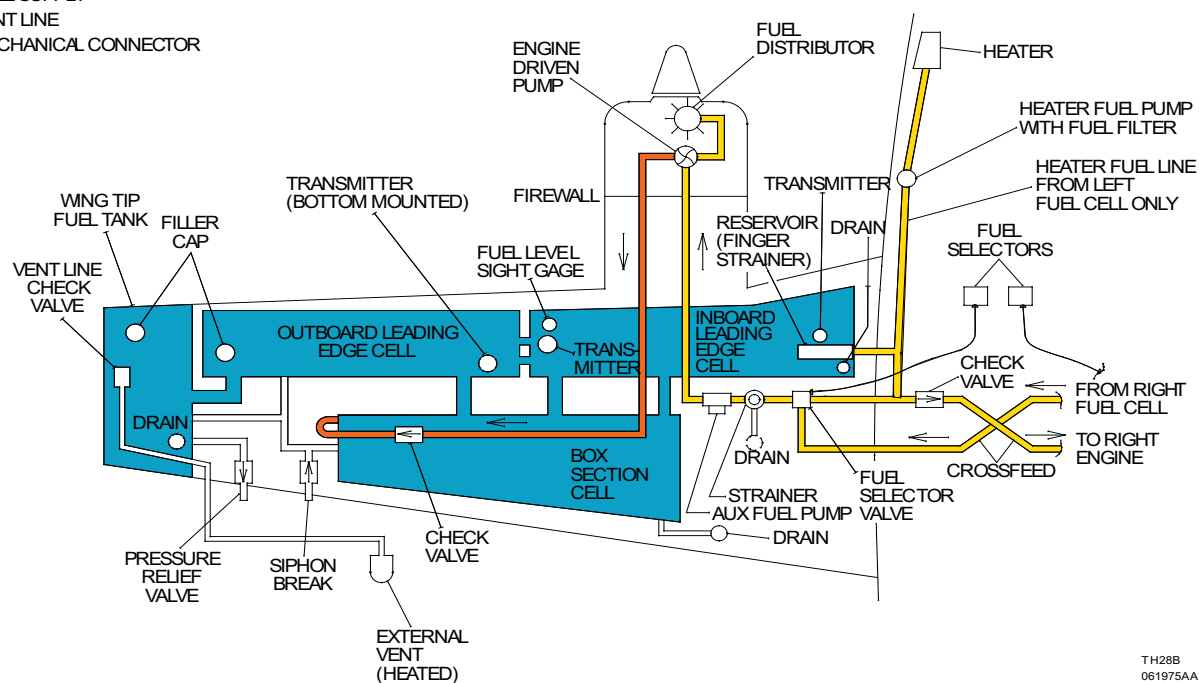
- * FLUSH DRAIN TH-1488, TH-1600, TH-1613 AND AFTER
- ** TH-1 THRU TH-384 ONLY
- *** TH-1 THRU TH-384 HAS TWO FILTERED HEATER FUEL PUMPS IN SERIES WITH A HEATER SOLENOID VALVE BETWEEN PUMPS AND HEATER
- **** NOT APPLICABLE FOR TH-1 THRU TH-384
- ***** TOP MOUNTED TH-1 THRU TH-384

TH28B
061974AB.A1

Figure 009 : Sheet 1 : Fig 9 - 200 Gallon, Interconnected Fuel System Schematic (TH-669 thru TH-772, Except TH-766)

E20958

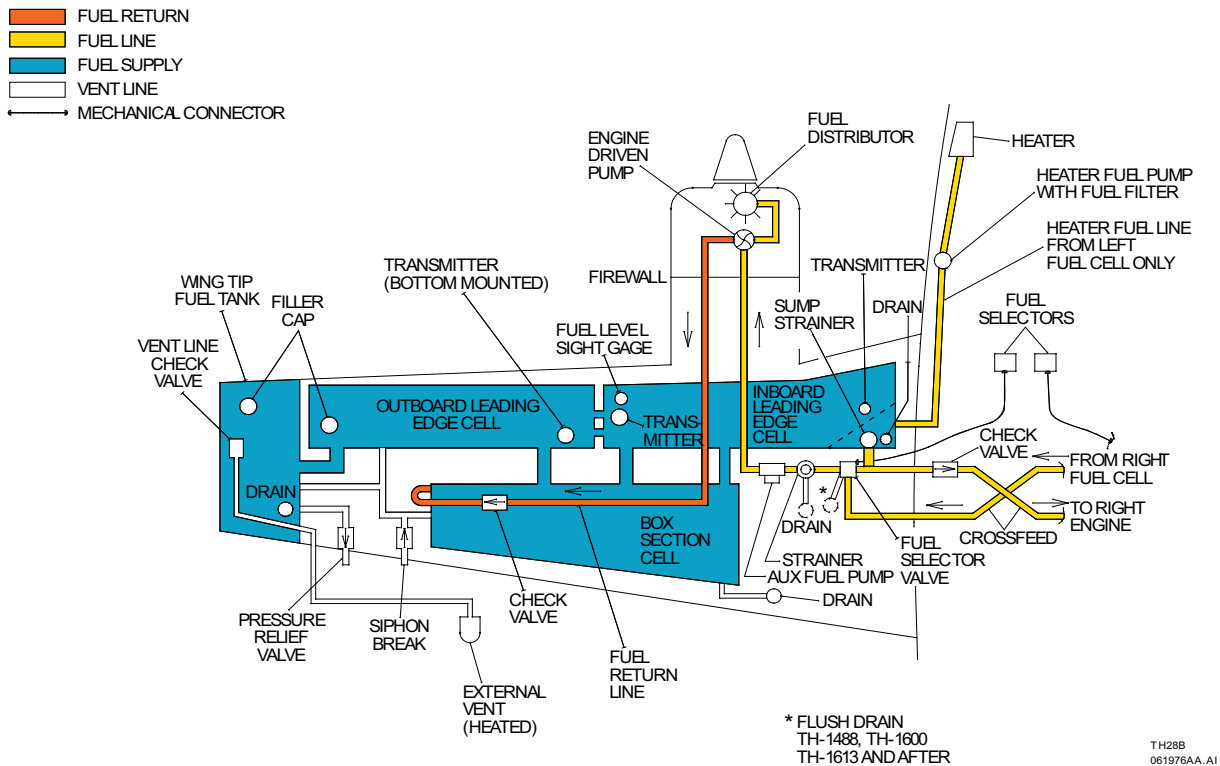
- FUEL RETURN
- FUEL LINE
- FUEL SUPPLY
- VENT LINE
- MECHANICAL CONNECTOR



TH28B
061975AA.A1

Figure 010 : Sheet 1 : Fig 10 - 200 Gallon, Interconnected Fuel System Schematic (TH-766, TH-773 and After)

E21848



FUEL GENERAL MAINTENANCE PRACTICES

1. FUEL - GENERAL - MAINTENANCE PRACTICES

A. Fuel System Safety Precautions

Observe the following safety precautions when performing maintenance on the fuel system.

Warning: The following fuel warnings are general in nature and shall be observed at all times to avoid personnel injury:

Fuel is highly flammable and must be kept away from all sources of heat, open flame, electrical sparks, and static electricity.

Review all local fire and safety regulations prior to performing any maintenance on the fuel system.

Used fuel may cause skin irritation. Any fuel that contacts the skin must be washed off immediately. Clothing that has fuel contamination must be thoroughly cleaned before being worn.

Do not wear nylon or synthetic clothes as they will generate static electricity.

Not adhering to the following specific warnings when performing inspections, servicing, operational test, fueling/defueling, and/or maintenance on the airplane's fuel system could result in injury to personnel and/or damage to the airplane.

When performing servicing and/or maintenance on the fuel system place the airplane in a well ventilated area.

Stop all other maintenance on the airplane while performing any maintenance involving opening the fuel system.

Make sure that the airplane, all ground servicing equipment, and jacks/work stands are properly grounded prior to performing any maintenance or servicing on the fuel system.

Grounded, metal containers shall be placed below work areas to catch dripping fuel.

Remove from the airplane and the surrounding vapor hazard area any spark-producing items such as electrical power tools or electronic test equipment.

Make sure that all fuel system components are electrically bonded as required.

Drain and ventilate fuel storage cells and fuel tanks prior to performing any maintenance on them.

Dispose of any drained or spilled fuel in accordance with required rules and regulations.

Caution: Close all fuel cells and tanks when work is not in progress on them to prevent contamination.

When fuel lines and hoses are disconnected and/or components are removed, cover all exposed ends, openings, or ports to prevent contamination.

B. Fuel Flared Fitting Installation

When installing flared fittings and hoses, make sure the threads are lubricated properly with antiseize compound. Refer to [20-10-00, Table 203, TABLE OF THREAD LUBRICANTS](#) and the Lubrication of Threads illustration. When previously installed fittings are removed, they should be wiped clean and lubricated before they are reinstalled. Torque all fittings. Refer to [20-10-00, Table 201, FLARE FITTING TORQUE TABLE, TORQUE - INCH POUND](#).

All fuel lines should be leak checked whenever removed and reinstalled.

C. Airplane Defueling

Warning: Read and understand the FUEL SYSTEM SAFETY PRECAUTIONS listed in this Chapter, before doing any work on the fuel system.

To make sure that all fuel is removed from the fuel system, the fuel should be drained through the boost pump. To expedite the defueling operation, the boost pump may be used to pump the fuel out of the system. The following steps must be accomplished before energizing the pump.

Caution: When inserting or removing the fuel nozzle, use extreme care to prevent the fuel hose from rubbing against the deicer boot. Also, do not allow fuel to contact the deicer boot.

- (1) Apply external power to the airplane electrical system. Refer to [Chapter 24-36-00, 301, ELECTRICAL POWER - CONNECT](#).
- (2) Place the fuel selector valve in the ON position and the mixture lever in IDLE CUT-OFF.
- (3) Remove the filler caps to vent the system.
- (4) Disconnect the main fuel line at the firewall and attach a drain hose. Provide a suitable container for the fuel.
- (5) Energize the boost pump.
- (6) When the fuel is no longer pumped from the airplane, open the sump drains to complete the defueling operation.

FUEL STORAGE MAINTENANCE PRACTICES

1. GENERAL HANDLING PROCEDURES FOR FUEL CELLS

Warning: Read and understand the FUEL SYSTEM SAFETY PRECAUTIONS listed in Chapter 28-00-00, 201, before doing any work on the fuel system.

Caution: Do not use magnetic hardware within 18 inches of a flux valve or magnetometer.

The following information provides general information and procedures when handling bladder-type fuel cells.

When synthetic rubber fuel cells are placed in service, the gasoline has a tendency to extract the plasticizer from the inner liner of the cell. This extraction of plasticizer is not detrimental as long as gasoline remains in the fuel cell, in as much as the gasoline itself will act as a suitable plasticizer.

If Goodyear fuel cells manufactured after 1961 are installed (Construction No. BTC-39, BTC-54A and BTC-67), no preservation procedures are necessary when the cell is to be empty for an indefinite period of time. The fuel cell should not be open to the atmosphere except for the normal vent lines in the airplane. Goodyear fuel cells manufactured prior to 1961 and Uniroyal fuel cells must be filled every ten days or the walls coated with a thin coat of light engine oil.

If serviceable fuel cells (all Uniroyal fuel cells and all Goodyear fuel cells manufactured Prior to 1961) are left empty of fuel for longer than ten days (whether installed on the airplane or not) or if the fuel cells are to be collapsed or deformed inside their bays, a thin coating of light engine oil should be flushed, sprayed, or rubbed on the inner liners of fuel cells. The oil will act as a temporary plasticizer and will help prevent the inner liner from drying out and cracking. The fuel cell should not be removed or handled until 24 hours after the oil has been applied.

Do not store fuel cells in the vicinity of electrical equipment, such as generators and motors. The movement of brushes across the commutators of these units results in minute sparks that cause the formation of ozone gas. Ozone has a highly destructive effect on fuel cells. Although it leaves no visible indication, ozone makes the material of which the cells are formed brittle so that the cells will disintegrate upon the application of stress.

Tape the edges of access opening that fuel cell must pass through during removal and installation procedures in order to prevent damage to the fuel cell.

2. WING MAIN FUEL CELL (TC-1 THRU TC-1607; TE-1 THRU TE-942 EXCEPT TE-938)

Warning: Read and understand the FUEL SYSTEM SAFETY PRECAUTIONS listed in Chapter 28-00-00, 201, before doing any work on the fuel system.

A. Removal

The following procedure is applicable to airplane serials TC-1 thru TC-1607; and TE-1 thru TE-942 except TE-938.

- (1) Remove electrical power from the airplane (Ref. 24-36-00, 301, ELECTRICAL POWER - DISCONNECT).
- (2) Drain and purge the fuel cell. Refer to Chapter 28-00-00, 201, AIRPLANE DEFUELING for procedures on completely defueling the airplane.
- (3) Remove the access plate at the fuel cell filler cap adapter and transmitter.
- (4) Remove the transmitter, the liner access cover, and inboard fuel cell cover plate.
- (5) Remove the jack pad cover plate.
- (6) Remove the fuel strainer.
- (7) Remove the fuel cell drain plug.
- (8) Remove the fuel cell access door on the underside of the wing.
- (9) Gaining access through the fuel cell access door, disconnect the fuel cell plumbing at the outboard end.

Caution: Ensure that the edges of the access openings have been wrapped with masking tape in order to prevent damage to the fuel cell during removal.

- (10) Wrap the edges of the access hole with masking tape (20-40-00, Table 1, 73).
- (11) Release the snap hangers that secure the cell to the wing cavity.

- (12) Collapse and fold the fuel cell.
- (13) Pull the fuel cell through the access opening.

B. Installation

The following procedure is applicable to airplane serials TC-1 thru TC-1607; and TE-1 thru TE-942 except TE-938.

Note: When installing a left, baffled fuel cell (PN 35-380135-9 or -11) as a spares requirement - first time ONLY, Kit No. 35-9009 shall be installed.

When installing a right, baffled fuel cell (PN 35-380135-10 or -11) as a spares requirement - first time ONLY, Kit No. 35-9009 shall be installed.

- (1) Be sure that electrical power has been removed from the airplane (Ref. 24-36-00, 301, ELECTRICAL POWER - DISCONNECT).
- (2) Place the fuel cell in an area where the temperature is at least 60°F and allow a sufficient heat soak period to ensure flexibility of the fuel cell. Although this step is not a necessity, it does make installing the fuel cell easier.

Caution: Before installing the fuel cells, ensure the fuel cell cavities are clean and free of debris.

- (3) Clean the fuel cell cavity of all debris.

Caution: Be sure that the edges of the access openings are wrapped with masking tape to prevent damage to the fuel cell during installation.

- (4) Carefully insert the fuel cell through the access hole and snap the cell in place.
- (5) Connect the fuel cell plumbing at the access hole on the underside of the wing.
- (6) Install the fuel cell drain plug.
- (7) Install the fuel strainer.
- (8) Install the transmitter.
- (9) Install the clamps on the interconnects. Torque the nipple clamps to 11 ± 1 inch-pounds (in-lbs) on Uniroyal cells and 25 ± 5 in-lbs on Goodyear cells.
- (10) Install the jack pad cover plate.
- (11) Install the fuel cell access door.
- (12) Install the liner access cover and the inboard fuel cell cover plate.
- (13) Install the access plate at the fuel cell filler cap adapter and transmitter.
- (14) Restore electrical power to the airplane (Ref. 24-36-00, 301, ELECTRICAL POWER - CONNECT).

3. WING AUXILIARY FUEL CELL (TC-1 THRU TC-1607; TE-1 THRU TE-942 EXCEPT TE-938)

Warning: Read and understand the FUEL SYSTEM SAFETY PRECAUTIONS listed in Chapter 28-00-00, 201, before doing any work on the fuel system.

A. Removal

The following procedure is applicable to airplane serials TC-1 thru TC-1607; and TE-1 thru TE-942 except TE-938.

- (1) Remove electrical power from the airplane (Ref. 24-36-00, 301, ELECTRICAL POWER - DISCONNECT).
- (2) Drain and purge the fuel cell.
- (3) Open the inspection door in the upper nacelle skin.
- (4) Gaining access through the inspection door, detach the fuel cell cap adapter from the wing and remove the inboard and outboard fuel cell transmitters.
- (5) Remove the fuel cell access plates on the underside of the wing.
- (6) Disconnect the plumbing at the inboard and outboard ends of the fuel cell.

- (7) Remove the drain valve tube from the inboard aft corner of the fuel cell.

Caution: Be sure that the edges of the access openings have been wrapped with masking tape in order to prevent damage to the fuel cell during removal.

- (8) Wrap the edges of the access hole with masking tape (20-40-00, Table 1, 73).
- (9) Release the snap hangers that secure the cell to the wing cavity.
- (10) Collapse and fold the fuel cell.
- (11) Pull the fuel cell through the access opening.

B. Installation

The following procedure is applicable to airplane serials TC-1 thru TC-1607; and TE-1 thru TE-942 except TE-938.

- (1) Be sure that electrical power has been removed from the airplane (Ref. 24-36-00, 301, ELECTRICAL POWER - DISCONNECT).
- (2) Place the fuel cell in an area where the temperature is at least 60°F and allow a sufficient heat soak period to ensure flexibility of the fuel cell. Although this step is not a necessity, it does make installing the fuel cell easier.

Caution: Before installing the fuel cells, ensure the fuel cell cavities are clean and free of debris.

- (3) Clean the fuel cell cavity of all debris.

Caution: Be sure that the edges of the access openings are wrapped with masking tape to prevent damage to the fuel cell during installation.

- (4) Carefully insert the fuel cell through the access hole and snap the cell in place.
- (5) Install the drain valve tube in the inboard aft corner of the fuel cell.
- (6) Connect the plumbing at the inboard and outward ends of the fuel cell.
- (7) Install the fuel cell access plates, located under the fuel cell access plates on the underside of the wing.
- (8) Install the inboard and outboard fuel cell transmitters. The inboard transmitter is accessible through the inspection door in the upper nacelle skin.
- (9) Install the fuel cell cap adapter to the wing. Apply Permatex No. 2 (20-40-00, Table 1, 3) between the adapter and skin attach.
- (10) Install the clamps on the interconnects. Torque the nipple clamps to 11 ± 1 in-lbs on Uniroyal and 25 ± 5 in-lbs on Goodyear cells.
- (11) Install the access covers.
- (12) Restore electrical power to the airplane (Ref. 24-36-00, 301, ELECTRICAL POWER - CONNECT).

4. WING INBOARD LEADING EDGE FUEL CELL (TC-1608 AND AFTER; TE-938, TE-943 AND AFTER; TH-1 AND AFTER)

Warning: Read and understand the FUEL SYSTEM SAFETY PRECAUTIONS listed in Chapter 28-00-00, 201, before doing any work on the fuel system.

A. Removal

The following procedure is applicable to airplane serials TC-1608 and After; TE-938, TE-943 and After; and TH-1 and After.

- (1) Remove electrical power from the airplane (Ref. 24-36-00, 301, ELECTRICAL POWER - CONNECT).
- (2) With the selector valves in the OFF position, drain the wing fuel cells.
- (3) Remove the access cover, the outboard fuel cell transmitter (outboard in top of the wing), and fuel level sight gage if installed. (Ref. 28-40-00, 201, FUEL CELL TRANSMITTER - REMOVAL).
- (4) Remove the access cover and the inboard fuel cell transmitter (inboard on top of the wing). (Ref. 28-40-00, 201, FUEL CELL TRANSMITTER - REMOVAL).
- (5) Remove the exhaust heat shield and the access cover on the underside of the wing.
- (6) Remove the fuel cell access plate.

- (7) Remove the cotter pin which holds the flapper valve inside the inboard interconnect tube if installed.
- (8) Disconnect the inboard and outboard interconnect tubes through the access doors.
- (9) On airplane serials TC-1970, TC-2003 and After; TE-1081, TE-1084 and After; TH-1 thru TH-384, TH-766, TH-773 and After, perform the following procedures:
 - (a) Disconnect the hose to the sump assembly through the inboard access door.
 - (b) Remove the hose, sump assembly and the fuel outlet.
 - (c) Disconnect the heater fuel line (LH fuel cell only).
- (10) On airplane serials TC-1608 thru TC-2002 except TC-1970; TE-938, TE-943 thru TE-1083 except TE-1081; and TH-385 thru TH-772 except TH-766, remove fuel cell reservoir and fuel connector. (Ref. [FUEL CELL RESERVOIR - REMOVAL](#)).
- (11) Disconnect the vent lines at the outboard end of the cell.

Caution: Be sure that the edges of the access openings have been wrapped with masking tape in order to prevent damage to the fuel cell during removal.

- (12) Wrap the edges of the access hole with masking tape ([20-40-00, Table 1, 73](#)).
- (13) Release the snap hangers that secure the cell to the upper wing.
- (14) Collapse and fold the fuel cell.
- (15) Pull the fuel cell through the top of the outboard access opening.

B. Installation

The following procedure is applicable to airplane serials TC-1608 and After; TE-938, TE-943 and After; and TH-1 and After:

Note: On airplane serials TH-1 thru TH-199 note the following:

When installing a right, baffled fuel cell (PN 58-380030-8 or -10) as a spares requirement - first time ONLY, Kit No. 60-9002 shall be installed.

When installing a left, baffled fuel cell (PN 58-380030-7 or -9) as a spares requirement - first time ONLY, Kit No. 60-9002 shall be installed.

- (1) Be sure that electrical power has been removed from the airplane (Ref. [24-36-00, 301, ELECTRICAL POWER - DISCONNECT](#)).
- (2) For ease of installation, place the fuel cell in an area where the temperature is at least 60°F, and allow a sufficient heat soak period to ensure flexibility of the cell.
- (3) On airplane serials TE-768 and After and TH-385 and After, that are equipped with wing outboard leading edge fuel cells (172 gallon and 200 gallon systems), note and perform the following: A new wing inboard leading edge fuel cell contains an internal nipple that is covered by a web which is integral to the fuel cell. When installing this fuel cell on these noted airplanes, the nipple shall be located and the web carefully cut-out to access the nipple. The nipple is located at the outboard end of the fuel cell, 2.87 inches forward of the lower, aft corner. A removable yellow tag is also located on the fuel cell near the nipple.

Caution: Before installing fuel cells, ensure that cell cavities are clean and free of debris.

- (4) Clean the fuel cell cavity of all debris.

Caution: Be sure that the edges of the access openings are wrapped with masking tape to prevent damage to the fuel cell during installation.

- (5) Install the cell through the top outboard access opening.
- (6) Align the snap hangers that secure the cell to the upper wing and fasten it in place.
- (7) Connect the vent lines.
- (8) On airplane serials TC-1970, TC-2003 and After; TE-1081, TE-1084 and After; TH-1 thru TH-384, TH-766, TH-773 and After, perform the following:
 - (a) Position the fuel cell in place and press the velcro pile and hook together pressing outward in the area of the velcro tape.
 - (b) Inspect flapper valve (Ref. [INSPECTION OF MAIN FUEL CELL FLAPPER VALVE](#)).

- (c) Install hose, sump assembly and fuel outlet.
- (d) Install heater fuel line (LH only).
- (9) On airplane serials TC-1608 thru TC-2002 except TC-1970; TE-938, TE-943 thru TE-1083 except TE-1081; TH-385 thru TH-772 except TH-766, install the fuel cell reservoir and fuel connector. Refer to FUEL CELL RESERVOIR - INSTALLATION.

Caution: This caution does not apply to airplanes serials TH-1 thru TH-384. To prevent pushing the interconnect tubes out of place when installing the wing inboard leading edge fuel cell, it may be necessary to hold the interconnect tubes through the access opening in the box section cell.

- (10) Connect the fuel outlet. Torque to 20 to 30 in-lbs and lockwire (Ref. 20-07-00, 201, SAFETY WIRE/LOCKWIRE).
- (11) Install the clamps on the interconnect tubes. Torque the nipple clamps to 11 ± 1 in-lbs on Uniroyal cells and 25 ± 5 in-lbs on Goodyear cells.

Note: On airplane serials TC-1608 thru TC-1654; TE-938, TE-943 thru TE-964; and TH-1 thru TH-432, that were originally equipped with inboard interconnect flapper valves, there is no need to replace the flapper valve should either or both be removed.

- (12) Install the fuel cell access plates and lockwire (Ref. 20-07-00, 201, SAFETY WIRE/LOCKWIRE).
- (13) Install the inboard and outboard fuel cell transmitters (Ref. 28-40-00, 201, FUEL CELL TRANSMITTER - INSTALLATION).
- (14) Install the access covers.
- (15) Restore electrical power to the airplane (Ref. 24-36-00, 301, ELECTRICAL POWER - CONNECT).

5. FUEL CELL RESERVOIR (TC-1608 THRU TC-2002, EXCEPT TC-1970; TE-938, TE-943 THRU TE-1083 EXCEPT TE-1081; TH-385 THRU TH-772 EXCEPT TH-766)

Warning: Read and understand the FUEL SYSTEM SAFETY PRECAUTIONS listed in Chapter 28-00-00, 201, before doing any work on the fuel system.

A. Removal

The following procedure is applicable to airplane serials TC-1608 thru TC-2002; TE-938, TE-943 thru TE-1083 except TE-1081; and TH-385 thru TH-772 except TH-766:

- (1) Remove electrical power from the airplane (Ref. 24-36-00, 301, ELECTRICAL POWER - DISCONNECT).
- (2) With the fuel selector valves in the OFF position, drain the fuel cells.
- (3) Remove the wing access cover and plate.
- (4) Remove the jack pad cover plate.
- (5) Loosen the nipple clamp and disconnect the fuel line to the connector assembly (Ref. Figure 201).

Caution: Be sure that the edges of the access openings have been wrapped with masking tape in order to prevent damage to the fuel cell during removal.

- (6) Wrap the edges of the access hole with masking tape (20-40-00, Table 1, 73).
- (7) Remove the connector assembly from the reservoir while tilting both the reservoir and connector assembly upward.
- (8) Compress the reservoir (squeeze by hand) into a small circumference and pass it through the fuel access ring to remove from the fuel cell.

B. Installation

The following procedure is applicable to airplane serials TC-1608 thru TC-2002; TE-938, TE-943 thru TE-1083 except TE-1081; and TH-385 thru TH-772 except TH-766:

Caution: The parts of the aerobatics reservoir type fuel cells, baffled fuel cells, and non-baffled fuel cells are not interchangeable. When installing a new fuel cell, use only those items pertaining to that particular cell being installed. Extreme care should be used when installing the finger fuel strainer to prevent damage to the fuel cell. The long finger fuel strainer (approximately 9 inches) is used only in the aerobatics reservoir type fuel cell as provided in Kit 35-9012. All other inboard main fuel cells that use a finger fuel strainer use the short type finger fuel strainer (approximately 4 inches long). Refer to the applicable Baron Illustrated Parts Catalog (IPC) for the particular

installation. The reference to AEROBATIC in this CAUTION refers only to the type of reservoir fuel cells and does NOT express or imply that the airplanes involved are to be flown in an aerobatics configuration. The Baron airplanes are NOT certified for aerobatics flight; refer to the applicable Pilot's Operating Manual for certified flight operations.

Note: Install the fuel cell reservoir after the wing leading edge fuel cell is in the wing and before the access plate is installed.

- (1) Be sure the electrical power has been removed from the airplane (Ref. 24-36-00, 301, ELECTRICAL POWER - DISCONNECT).
- (2) Tape the reservoir flapper valve shut before installing the reservoir.
- (3) Compress the reservoir (squeeze by hand) into a small circumference and pass it through the fuel access ring into the fuel cell.
- (4) Release the reservoir, allowing it to assume its original shape.
- (5) Insert the connector assembly into the reservoir while tilting both the reservoir and connector assembly upward.

Caution: Care should be exercised to avoid cross threading the connector into the reservoir. Also avoid bending or distorting the fuel strainer which is attached to the end of the connector, for it may become entangled in the foam inside the reservoir.

- (6) Thread the connector assembly into the reservoir until it will advance no further. No specific torque is required (Ref. Figure 201).
- (7) Tighten the nipple clamp.
- (8) Connect the fuel line to the connector assembly.
- (9) Remove the tape from the flapper valve and check the valve for free play and a good seal.
- (10) Check to make sure the reservoir is positioned properly on the bottom of the fuel cell.
- (11) Close all accesses.
- (12) Restore electrical power to the airplane (Ref. 24-36-00, 301, ELECTRICAL POWER - CONNECT).

6. WING BOX SECTION FUEL CELL (TC-1608 AND AFTER; TE-938, TE-943 AND AFTER; TH-1 AND AFTER)

Warning: Read and understand the FUEL SYSTEM SAFETY PRECAUTIONS listed in Chapter 28-00-00, 201, before doing any work on the fuel system.

A. Removal

The following procedure is applicable to airplane serials TC-1608 and After; TE-938, TE-943 and After; and TH-1 and After:

- (1) Remove electrical power from the airplane (Ref. 24-36-00, 301, ELECTRICAL POWER - DISCONNECT).
- (2) With the selector valves in the OFF position, drain all wing cells.
- (3) Remove the screws securing the fuel cell filler cap adapter or access cover to the wing skin.
- (4) Remove the inboard and outboard access covers on the underside of the wing.
- (5) Remove the inboard and outboard fuel cell access plates.
- (6) Remove the interconnect clamps.

Caution: This Caution does not apply to airplane serials TH-1 thru TH-234. When removing fuel cells from the interconnect tubes, exercise caution to prevent pulling interconnect tubes out of the inboard and/or outboard leading edge cells.

- (7) Disconnect the drain and vent plumbing.

Caution: Be sure that the edges of the access openings have been wrapped with masking tape in order to prevent damage to the fuel cell during removal.

- (8) Wrap the edges of the access hole with masking tape (20-40-00, Table 1, 73).
- (9) Release the snap hangers that secure the cell to the upper wing skin.
- (10) Collapse and fold the fuel cell.

- (11) Pull the fuel cell through the outboard access opening.

B. Installation

The following procedure is applicable to airplane serials TC-1608 and After; and TE-938, TE-943 and After; and TH-1 and After.

- (1) Be sure that electrical power has been removed from the airplane (Ref. [24-36-00, 301, ELECTRICAL POWER - DISCONNECT](#)).
- (2) For ease of installation, place the fuel cell in an area where the temperature is at least 60°F, and allow a sufficient heat soak period to ensure flexibility of the cell.

Caution: Before installing fuel cells, ensure that cell cavities are clean and free of debris.

- (3) Clean the fuel cell cavity of all debris.
- (4) Apply Permatex No. 2 ([20-40-00, Table 1, 3](#)) between the filler cap adapter and airplane skin.
- (5) Install the filler cap adapter or access plate to the fuel cell. Torque to 45 to 55 in-lbs and **lockwire** (Ref. [20-07-00, 201, SAFETY WIRE/LOCKWIRE](#)).

Caution: Be sure that the edges of the access openings are wrapped with masking tape to prevent damage to the fuel cell during installation.

- (6) Install the cell through the outboard access opening.
- (7) Align the snap hangers that secure the cell to the upper wing skin and fasten it in place.
- (8) Connect the vent and drain lines.
- (9) Install the clamps on the interconnect tubes. Torque the nipple clamp 11 ± 1 in-lbs on Uniroyal cells and 25 ± 5 in-lbs on Goodyear cells.
- (10) Install the cell access plates with bolts and torque 45 to 55 inch-pounds then **lockwire** (Ref. [20-07-00, 201, SAFETY WIRE/LOCKWIRE](#)).
- (11) Install the screws securing the fuel cell filler cap adapter or access cover to the wing skin.
- (12) Restore electrical power to the airplane (Ref. [24-36-00, 301, ELECTRICAL POWER - CONNECT](#)).

7. WING OUTBOARD LEADING EDGE FUEL CELL - 172 AND 200 GALLON SYSTEMS (TE-938, TE-943 AND AFTER; TH-1 AND AFTER)

Warning: Read and understand the FUEL SYSTEM SAFETY PRECAUTIONS listed in [Chapter 28-00-00, 201](#), before doing any work on the fuel system.

A. Removal

The following procedure is applicable to airplane serials TE-938, TE-943 and After; and TH-1 and After that are equipped with a 172 or 200 gallon fuel system.

- (1) Remove electrical power from the airplane (Ref. [24-36-00, 301, ELECTRICAL POWER - DISCONNECT](#)).
- (2) With the selector valves in the OFF position, drain the wing cells.
- (3) Remove the screws securing the filler cap adapter to the wing skin.
- (4) Remove the access cover and the fuel cell transmitter (Ref. [28-40-00, 201, FUEL CELL TRANSMITTER - REMOVAL](#)).
- (5) Remove the inboard and outboard access covers on the underside of the wing.
- (6) Remove the inboard and outboard fuel cell access plates.
- (7) Disconnect the vent lines and interconnect tubes. The vent lines are located aft, near the outboard end.

Caution: Be sure that the edges of the access openings are wrapped with masking tape to prevent damage to the fuel cell during its removal.

- (8) Wrap the edges of the access hole with masking tape ([20-40-00, Table 1, 73](#)).
- (9) Release the snap hangers that secure the cell to the upper wing skin.
- (10) Collapse and fold the fuel cell.

- (11) Pull the fuel cell through the outboard access opening.

B. Installation

The following procedure is applicable to airplane serials TE-938, TE-943 and After; and TH-1 and After that are equipped with a 172 gallon or 200 gallon systems.

Note: The following portion of this note is not applicable on airplane serials TH-1 thru TH-384. Prior to installing a new outboard leading edge fuel cell, particular attention should be paid to the removable yellow tag which is attached to the cell, near the nipple.

- (1) Be sure that electrical power has been removed from the airplane (Ref. 24-36-00, 301, ELECTRICAL POWER - DISCONNECT).
- (2) Collapse the cell and install it through the outboard access opening.
- (3) On airplane serials TE-768 and After and TH-385 and After that are equipped with wing outboard leading edge fuel cells (172 gallon and 200 gallon systems), note and perform the following: A new wing inboard leading edge fuel cell contains an internal nipple that is covered by a web which is integral to the fuel cell. When installing this fuel cell on these noted airplanes, the nipple shall be located and the web carefully cut-out to access the nipple. The nipple is located at the outboard end of the fuel cell, 2.87 inches forward of the lower, aft corner. A removable yellow tag is also located on the fuel cell near the nipple.
- (4) For ease of installation, place the fuel cell in an area where the temperature is at least 60°F, and allow a sufficient heat soak period to ensure flexibility of the cell.

Caution: Before installing fuel cells, be sure that cell cavities are clean and free of debris.

- (5) Clean the fuel cell cavity of all debris.

Caution: Be sure that the edges of the access openings are wrapped with masking tape to prevent damage to the fuel cell during installation.

- (6) Align the snap hangers that secure the cell to the upper wing skin and fasten it in place.
- (7) Connect the vent lines.
- (8) Install the clamps on the interconnect tubes. Torque the nipple clamps to 11 ± 1 in-lbs on Uniroyal cells and 25 ± 5 in-lbs on Goodyear cells.
- (9) Install the fuel cell transmitter (Ref. 28-40-00, 201, FUEL CELL TRANSMITTER - INSTALLATION) and lockwire (Ref. 20-07-00, 201, SAFETY WIRE/LOCKWIRE).
- (10) Install the cell access plates with bolts and torque 45 to 55 inch-pounds then lockwire (Ref. 20-07-00, 201, SAFETY WIRE/LOCKWIRE).
- (11) Install the access covers.
- (12) Restore electrical power to the airplane (Ref. 24-36-00, 301, ELECTRICAL POWER - CONNECT).

8. FUEL CELLS

A. Inspection

Warning: Read and understand the FUEL SYSTEM SAFETY PRECAUTIONS listed in Chapter 28-00-00, 201, before doing any work on the fuel system.

Inspect fuel cells paying close attention to the following items:

- Inspect the vent and drain nipple areas at the lower wing surface for fuel stains.
- Remove the fuel access plates on the lower wing if evidence of fuel seepage is found.
- Inspect the areas between the fuel cell liners and the wing skins for fuel seepage.
- Inspect the fuel cells for deterioration and cracks, particularly around the vent, drain outlet and interconnect nipples.
- Interconnect nipples that are not hard or cracked must be inspected by scraping with a finger nail. If materials can be scraped off, the cells must be replaced.
- Bladder type fuel cells which have been in service for extended periods may become hard and brittle. These fuel cells must be inspected very carefully. An inspection of a hard or brittle fuel cell may cause cracks in the material which could

cause fuel seepage from the cracks.

- If seepage from the cell is confirmed, the cell must either be repaired or replaced. Fuel cells that have become hard and are not pliable shall be replaced. While those that are pliable and not hard may be considered repairable.
- If Goodyear BTC-39 construction type fuel cells are removed from the airplane for any reason they must be replaced. This type of fuel cell shall not be repaired or reinstalled in the airplane. Specific inspection instructions for BTC-39 construction fuel cells are contained in Service Instructions No. 0895.
- Fuel cells that have been repaired must be inspected for the condition of the repair by draining and purging, removing the access plates and inspect it with a mirror and non-explosive flashlight. The cell must be replaced if blistering is evident or any edge is loose.

B. Repair

Warning: Read and understand the FUEL SYSTEM SAFETY PRECAUTIONS listed in Chapter 28-00-00, 201, before doing any work on the fuel system.

(1) Uniroyal

No repairs are to be made on the radius of a Uniroyal fuel cell or in the fitting area of the fuel cell. Fuel cells with such damage are to be returned to Uniroyal Inc., Fuel Cell Division, Mishawaka, Indiana, for repair. Additionally, no damage area larger than 2 inches may be repaired in the field.

For information pertaining to the repair, handling and storage of Uniroyal Fuel Cells, refer to Report FC-1473-73 titled RECOMMENDED HANDLING AND STORAGE PROCEDURES FOR BLADDER TYPE FUEL AND OIL CELLS. This report is published by Uniroyal Inc., Engineered Systems Department, Mishawaka, Indiana.

(2) Goodyear

For information pertaining to repair, handling and storage of Goodyear Fuel cells, refer to Manual AP368 titled REPAIR AND MAINTENANCE MANUAL FOR VITHANE FUEL CELLS, which is published by Goodyear Aerospace Corporation, Engineering Fabrics Division, Rockmart, Georgia.

(a) Chemical Test of Fuel Cells.

Note: In conducting the following chemical test, the cell need not be confined by a cage or jig, providing the 1/4 psi pressure is not exceeded.

- 1 Attach test plates to all fitting openings except one.
- 2 Pour ammonia on the absorbent cloth in the ratio of 3 cc per cubic foot of cell capacity. Place the saturated cloth inside the cell and install the remaining test plate.
- 3 Make up a phenolphthalein solution as follows: add 40 grams phenolphthalein crystals to 1/2 gallon of ethyl alcohol, mix, then add 1/2 gallon of water.
- 4 Inflate the cell with air to a pressure of 1/4 psi maximum.
- 5 Soak a large white cloth in the phenolphthalein solution, then wring it out thoroughly and spread it smoothly on the outer surface of the cell. Press the cloth down to insure detection of minute leaks.
- 6 Check the cloth for red spots which will indicate a leak. Mark any leaks found and move the cloth to a new location. Repeat this procedure until the entire exterior surface of the cell has been covered. If red spots appear on the cloth, they may be removed by resoaking the cloth in the solution.
- 7 The solution and test cloth are satisfactory only as long as they remain clean. Indicator solution that is not in immediate use should be stored in a closed container to prevent evaporation and deterioration.
- 8 After the test, remove all plates and test equipment. Allow the cell to air out.

(b) Pressure Test Of Fuel Cells Installed On The Airplane.

Fuel cells and vent systems installed on the airplane shall be pressure tested to 0.75 +0.25/ -0.00 for 15 minutes with no drop in pressure.

9. BAFFLED MAIN FUEL CELL FLAPPER VALVE OR RESERVOIR FLAPPER VALVE

Warning: Read and understand the FUEL SYSTEM SAFETY PRECAUTIONS listed in Chapter 28-00-00, 201, before doing any work on the fuel system.

On airplanes that are equipped with baffled main fuel cells or fuel cell reservoirs, the flapper valves should be inspected periodically (Beechcraft Corporation recommends that the inspection be accomplished every three years) for freedom of operation and proper seating.

A. Inspection

- (1) Remove electrical power from the airplane (Ref. 24-36-00, 301, ELECTRICAL POWER - DISCONNECT).
- (2) Drain all fuel from the airplane.
- (3) Remove the rectangular access cover located just outboard of the fuselage on the upper skin of each wing leading edge.

Note: On airplane serials TH-1 thru TH-384 the fuel cell access plate is circular and located just outboard of the fuselage on the lower skin of each wing leading edge.

- (4) Cut the lockwire and remove the attaching bolts from the fuel cell access plate.

Note: Clean the area around the access plate before removing the plate.

- (5) Remove the fuel cell access plate and open the zipper in the baffle of the main fuel cell.
- (6) Locate the flapper valve in the lower outboard section of the baffle or reservoir and determine if the flapper valve is metal or phenolic.
- (7) If the flapper valve is metal, it should be inspected and repaired, if necessary, as described below.
 - (a) Move the flapper element of the valve through its full travel. There should be no binding and the element should seat securely against the valve plate.
 - (b) If the flapper element binds and/or does not seat properly, the flapper element arm could be bent. The arm can be straightened by placing a screwdriver between the arm and the element and pressing the element toward the closed position.
 - (c) If after straightening the arm, the flapper element still binds and/or does not seat properly, the flapper valve must be removed.

Note: For information on the installation of Velcro Tap on airplane serials TC-1 thru TC-1298 and TE-1 thru TE-767, refer to Figure 202.

- (8) If the flapper valve is phenolic, it should be inspected and reworked, if necessary, as described below.
 - (a) Move the flapper valve element through its full travel. There should be no binding and the element should seat securely against the valve plate.
 - (b) If the flapper element binds and/or does not seat properly, the upper rear side of the flapper element may be binding against the valve plate.
 - (c) The flapper valve element may be relieved from binding by filing a small radius on the upper rear side of the element.

Note: A shop towel saturated with light oil may be placed directly below the flapper valve to absorb the phenolic dust during rework.

- (d) After determining that the flapper valve is functioning properly, thoroughly wipe the area in the vicinity of the flapper valve with an oil saturated shop towel.
- (9) Clean the gasket contact area on the fuel cell and fuel cell access plate.
- (10) Close the zipper in the baffle.
- (11) Install a new gasket, and secure the fuel cell access plate in place.
- (12) Tighten the fuel cell access plate attaching bolts to a torque of 45 to 50 in-lbs and lockwire (Ref. 20-07-00, 201, SAFETY WIRE/LOCKWIRE).
- (13) Reinstall the access plate on the wing leading edge skin.
- (14) Restore electrical power to the airplane (Ref. 24-36-00, 301, ELECTRICAL POWER - CONNECT).

10. WET WING TIP FUEL CELL - LEAKAGE TESTING AND REPAIR

Warning: Read and understand the FUEL SYSTEM SAFETY PRECAUTIONS listed in Chapter 28-00-00, 201, before doing any work on the fuel system.

For information on wet wing tip fuel cell leakage indication, leak test set up and minor repair instructions, refer to Figure 203, 204 and

205.

11. FUEL FILLER CAP AND FUEL FILLER CAP ADAPTER INSPECTIONS

The fuel filler caps and fuel filler cap adapters are located on the wing leading edges.

Note: Inspect the fuel filler cap outer packing for flexibility, splits, cracks or distortion. If the packing is damaged in any way, replace or overhaul the fuel filler cap.

Applicable to airplanes TE-1202 and After; and TH-1451 and After.

A. Fuel Filler Cap

Visually inspect the fuel filler cap to make sure that all visible packings are in good condition and the hook, bead chain coupling and bead chain are secure. With the fuel filler cap installed on the fuel filler cap adapter, check the force required to lift the handle assembly. The force required to lift the handle shall be 15 ± 3 pound applied perpendicular to the handle and applied 0.20 ± 0.03 inches from the edge of the handle at its center (Ref. [Figure 206](#)).

B. Fuel Filler Cap Adapter

Make sure the two rivets (Ref. [Figure 206](#)) attaching the FULL plate assembly to the fuel filler cap adapter are secure. Loose rivets should be tightened or replaced. Rivet heads should be sealed with sealer/accelerator CS-3204 Class A/B ([20-40-00, Table 1, 114](#)).

Figure 201 : Sheet 1 : Fig 201 - Fuel Cell Reservoir (TC-1608 thru TC-2002 except TC-1970; TE-0938, TE-943 thru TE-1083 except TE-1081; TH-385 thru TH-772 except TH-766)

E21836

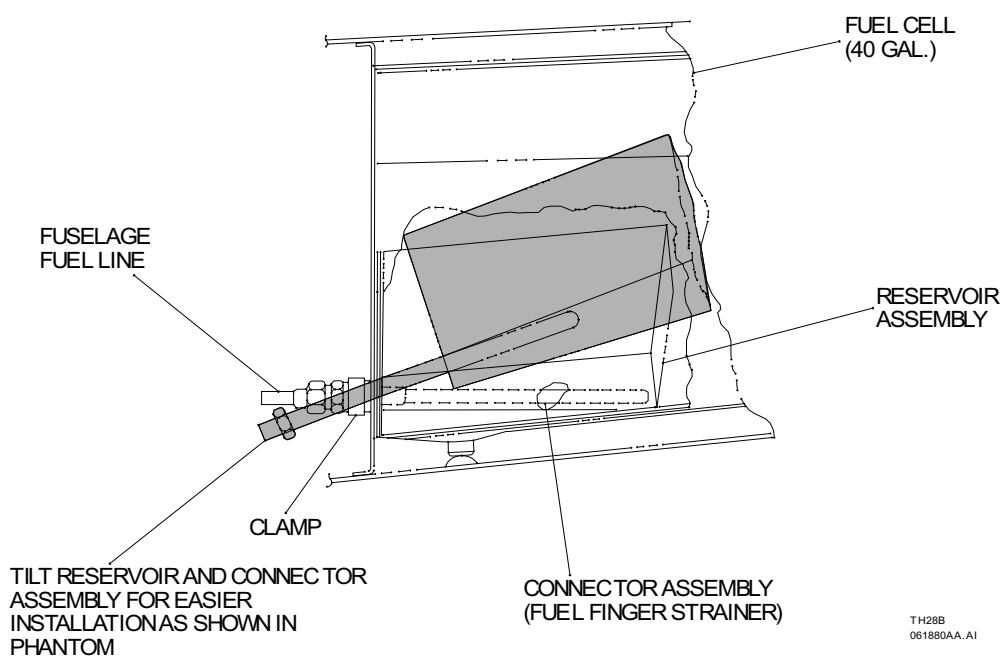
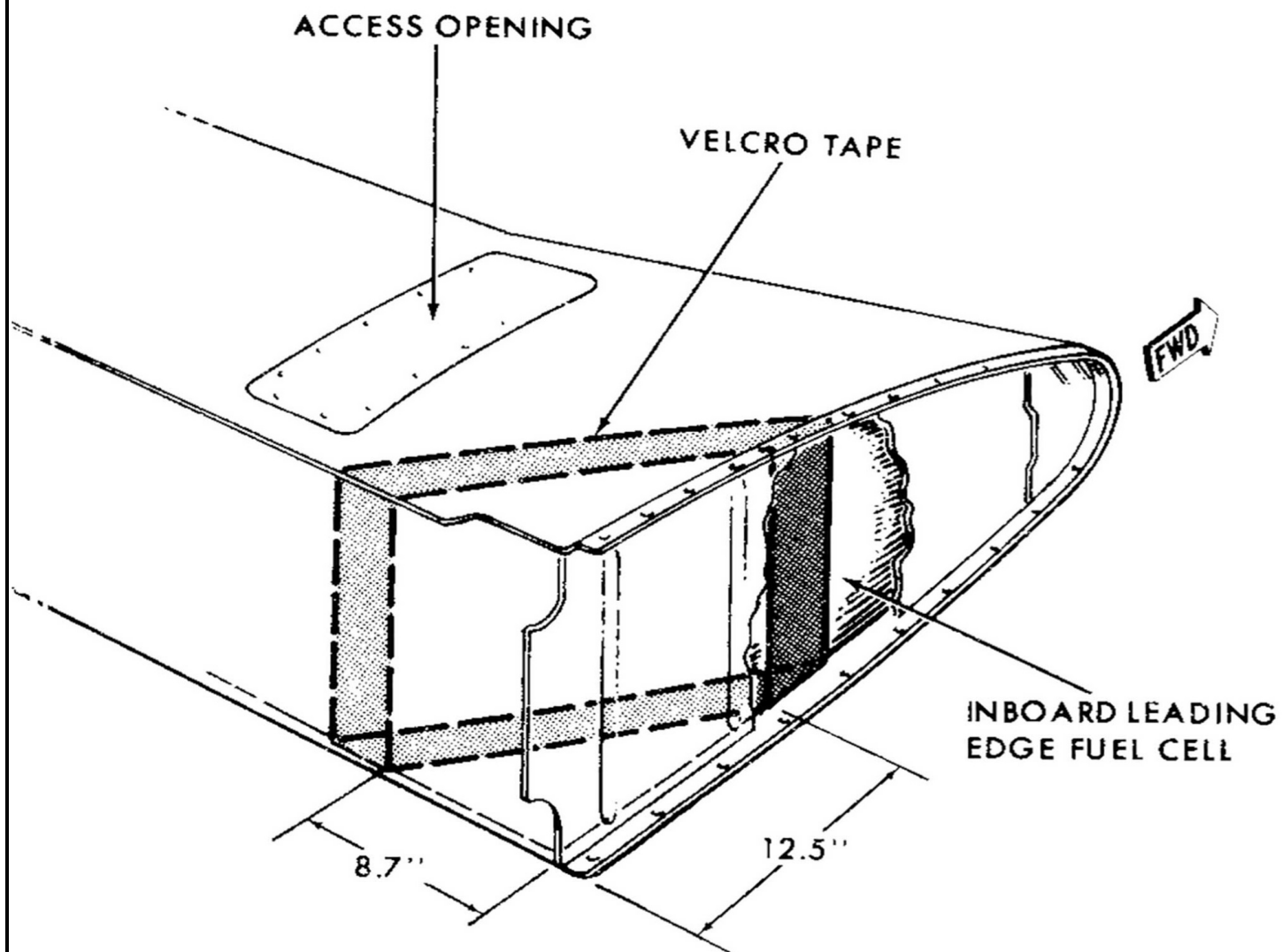


Figure 202 : Sheet 1 : Fig 202 - Installation of Velcro Tape (TC-1 thru TC-1298, TE-1 thru TE-767)

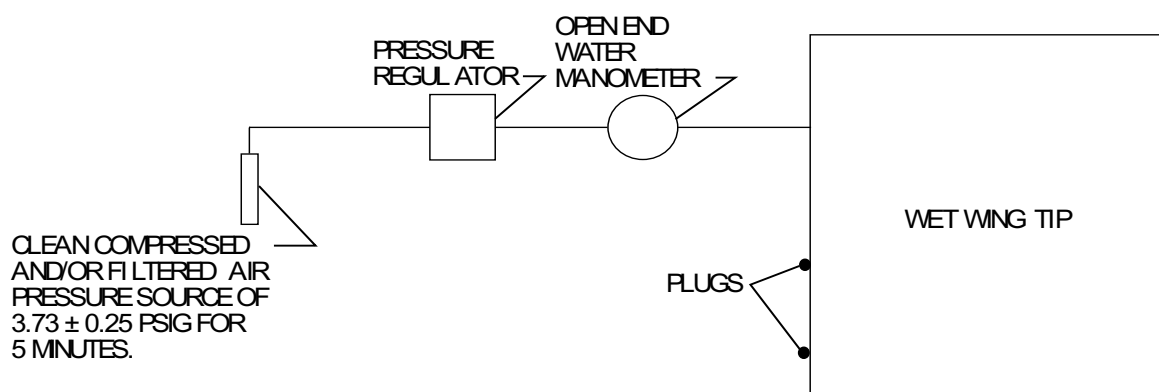
E15805



33-36-1

Figure 203 : Sheet 1 : Fig 203 (Revised) - Leak Test Set Up (TH-669 and After)

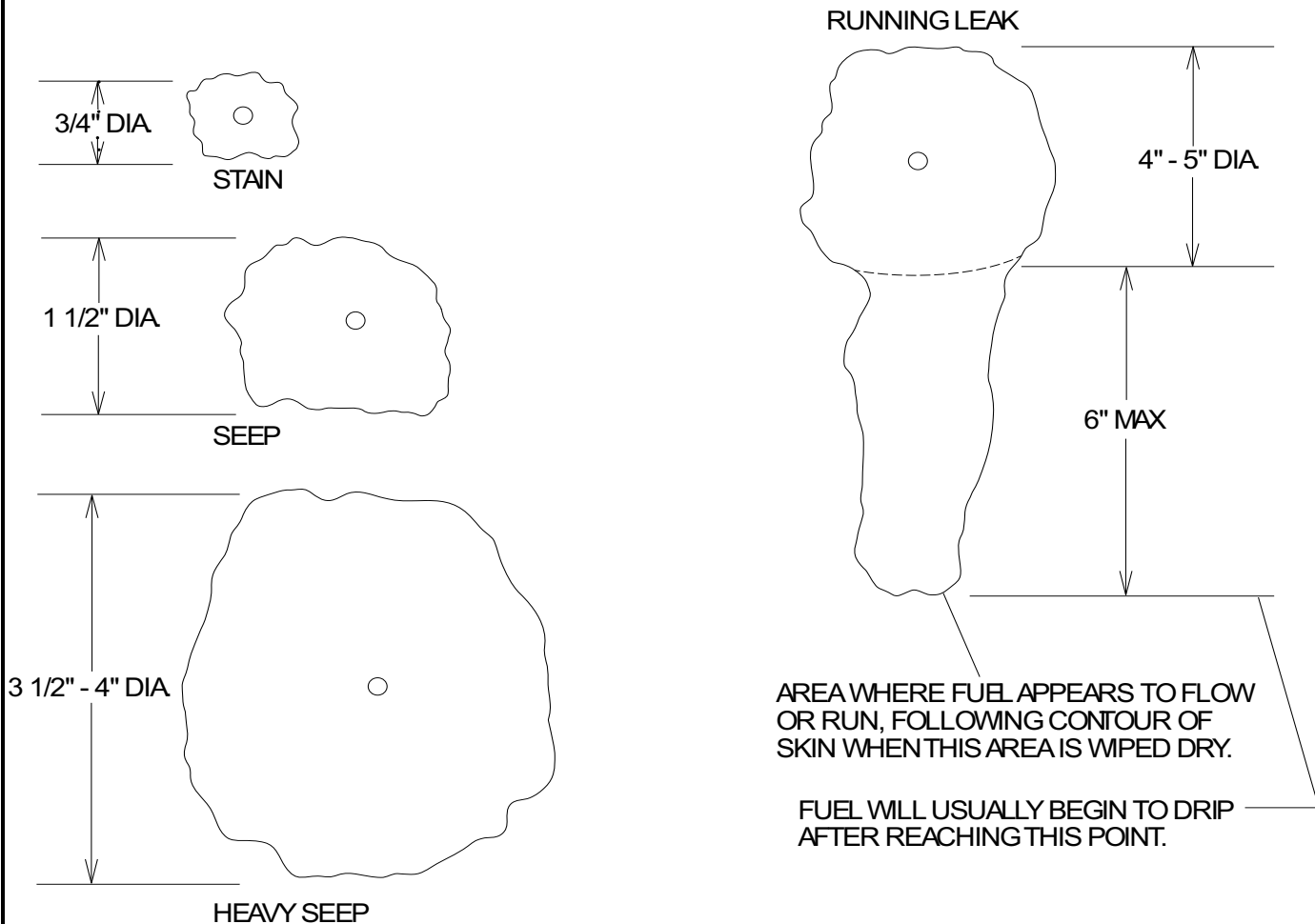
E21958



60-608-2.A1

Figure 204 : Sheet 1 : Fig 204 - Leakage of Wet Wing Tip Fuel Cell (TH-669 and After)

E21828



A100-281-23.A1

Figure 205 : Sheet 1 : Fig 205 - Wet Wing Tip Fuel Tank, Minor Repair (TH-669 and After, and Prior airplanes equipped with Wet Wing Tip Kit)

E21976

NOTE

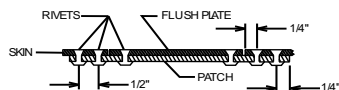
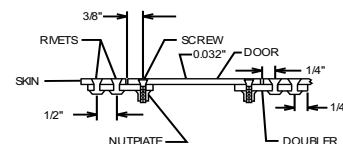
REPAIR OF THE WET WING TIP IS PERMISSIBLE PROVIDING THE DAMAGED AREA IS FAR ENOUGH FROM THE RIB TO ALLOW A DOUBLER OR PLATE TO BE INSTALLED. HOLES CUT TO REMOVE DAMAGED AREA MUST BE ROUND OR AT LEAST HAVE GENEROUS RADIUS. SHOULD A STRINGER BE DAMAGED OR FALL WITHIN THE REPAIR AREA IT MUST BE BRIDGED ACROSS AND BE ATTACHED TO THE REPAIR.

CAUTION

IT MUST BE REALIZED THE WET WING TIP IS A HIGHLY STRESSED AREA. CONSEQUENTLY, THE REPAIR STRUCTURE MUST BE OF EQUAL CAPABILITY.

GENERAL INSTRUCTIONS

1. SEAL EDGES OF DOUBLER OR PLATE, RIVET BUTTS AND NUT PLATES WITH SEALER (ITEMS 32 OR 33, CONSUMABLE MATERIAL TABLE)
2. FILL THE RIVET HEADS, SCREW HEADS AND THE PATCH/SKIN JOINTS WITH SEALER (ITEMS 32 AND 33, CONSUMABLE MATERIAL TABLE)
3. PRESSURE TEST (0.50 + 0.25/- 0.00 PSIG) BEFORE APPLYING FILLER TO OUTER SURFACE



REPAIR OF ACCESSIBLE AREAS

1. RIVETS - AN426AD4-5
2. PATCH MATERIAL - 0.032 2024 T3 ALUMINUM CLAD PLATE MATERIAL - 0.032 2024 T3 ALUMINUM CLAD
3. TWO ROWS RIVETS THROUGH PATCH AND SKIN (PATCH PLATE TO BE ON INNER SURFACE OF CELL. IF THE PLATE IS TOO LARGE FOR ENTRY THROUGH ACCESS OPENINGS, USE METHOD FOR INACCESSIBLE AREA)
4. RIVET ED 1/4\"
5. FIT FLUSH PLATE AND SECURE WITH ONLY ENOUGH RIVETS TO PREVENT FILLER FROM CRACKING.

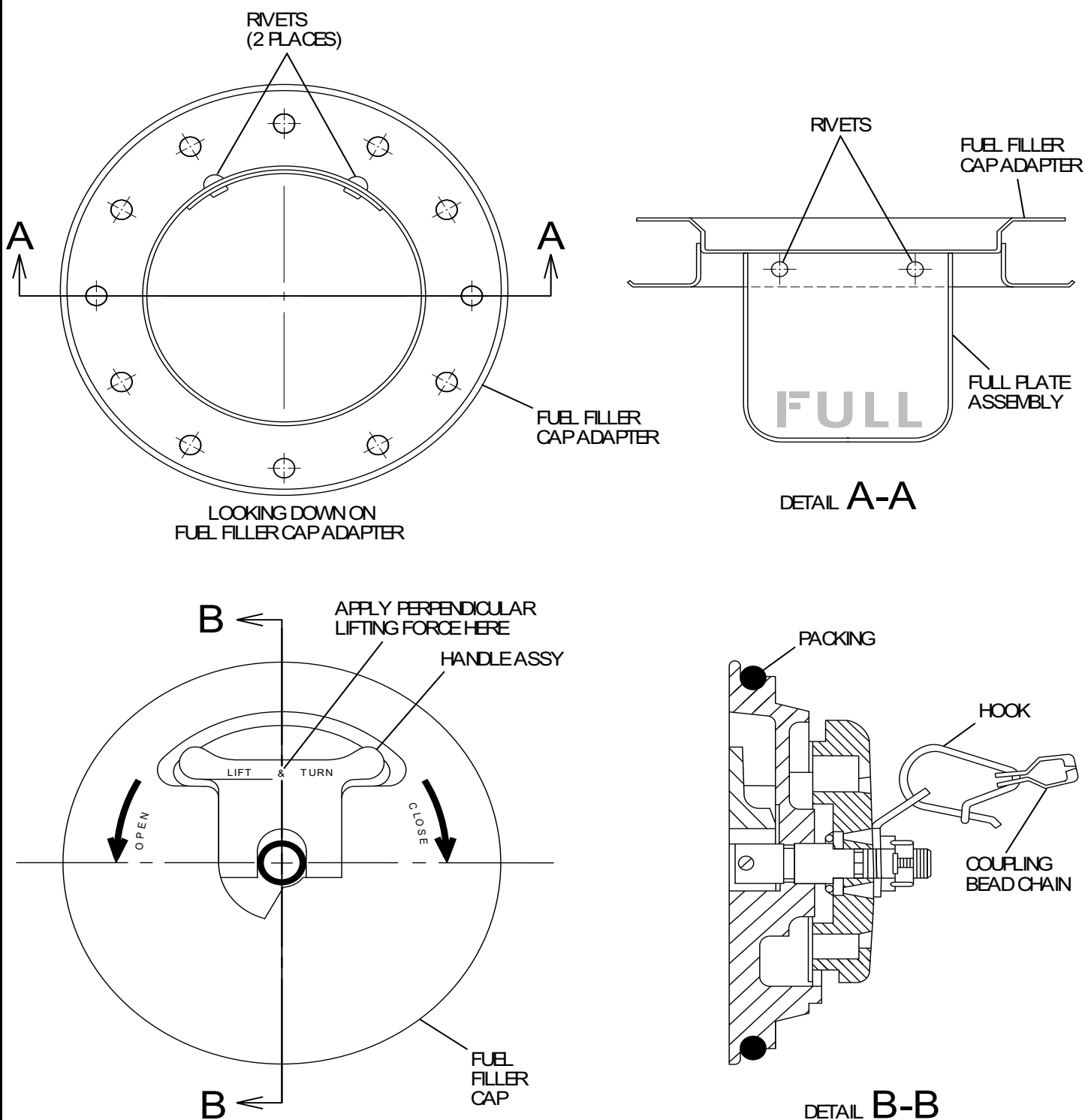
REPAIR OF INACCESSIBLE AREAS

1. DOOR MATERIAL - 0.032 2024 T3 ALUMINUM CLAD. DOUBLER MATERIAL - 0.051 2024 T3 ALUMINUM CLAD. NUT PLATES - K1000-832 OR EQUIVALENT. SCREWS - AN507-6R - LENGTH TO BE DETERMINED. RIVETS - AN426AD3 - FOR ATTACHING NUT PLATES. RIVETS - AN426AD4 - FOR ATTACHING DOUBLER.
2. TWO ROWS RIVETS IN DOUBLER AND SKIN - 1/4\"
3. SINGLE ROW OF SCREWS THROUGH DOUBLER AND DOOR - 3/8\"
4. DOUBLER MAY BE CUT ON ONE SIDE ONLY IN ORDER TO PLACE IT ON INSIDE OF CELL. CUT SIDE OF DOUBLER TO BE PLACED ON INBOARD OR OUTBOARD SIDE OF REPAIR.

FIG 205
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Figure 206 : Sheet 1 : Fig 206 - Fuel Filler Cap and Fuel Filler Cap Adapter Inspections

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FUEL DISTRIBUTION MAINTENANCE PRACTICES

1. FUEL - DISTRIBUTION - MAINTENANCE PRACTICES

A. Fuel Selector Valve (Control)

The fuel selector valves (control) are located in the cockpit.

Warning: Read and understand the FUEL SYSTEM SAFETY PRECAUTIONS listed in Chapter 28-00-00, 201, before doing any work on the fuel system.

(1) Fuel Selector Valve (Control) - Removal (TC-1 thru TC-2002 Except TC-1970; TE-1 thru TE-1084 Except TE-1081)

- (a) Remove electrical power from the airplane (Ref. 24-36-00, 301, ELECTRICAL POWER - DISCONNECT).
- (b) Turn both fuel selector handles to off.
- (c) Unsnap the floor mat.

Warning: Be sure phone jacks and other electrical devices are disconnected (if installed) before removing the fuel selector cover.

- (d) Remove phone jacks and other electrical devices (if installed).
- (e) Remove the screws securing the fuel selector valve cover and remove the cover.
- (f) Make sure the fuel has been drained from the fuel plumbing.
- (g) Label and disconnect the fuel selector valve plumbing.
- (h) Note the position of the fuel selector valve in the mounting bracket, the position of the applicable fuel selector handle, and the position of the connector shaft between the valve and the handle. For an illustration of the fuel selector valve on airplane serials TC-1 thru TC-1607; TE-1 thru TE-942 Except TE-938, refer to Figure 201.
- (i) Remove the connector shaft and the fuel selector handle from the valve by removing the pins.
- (j) Remove the fuel selector valve attaching screws.
- (k) Remove the fuel selector valve.

(2) Fuel Selector Valve (Control) - Installation (TC-1 thru TC-2002 Except TC-1970; TE-1 thru TE-1084 Except TE-1081)

- (a) Be sure electrical power has been removed from the airplane (Ref. 24-36-00, 301, ELECTRICAL POWER - DISCONNECT).
- (b) Position the fuel selector valve in the mounting bracket. Make sure that the valve is positioned as it was removed. For an illustration of the fuel selector valve on airplane serials TC-1 thru TC-1607; TE-1 thru TE-942 Except TE-938, refer to Figure 201.
- (c) Install the valve connector shaft and the fuel selector handle. Make sure the connector shaft and the handle are installed in the same position as removed.
- (d) After making sure that the fuel selector valve, connector shaft, and fuel selector handle are positioned correctly and properly engaged, install the pins that secure the valve, shaft, and handle.
- (e) Install the fuel selector valve attaching screws.
- (f) Install the fuel selector valve plumbing. Make sure the plumbing is in the same location as when removed. Remove plumbing identity tags.
- (g) If equipped, install phone jacks, etc., on fuel selector valve cover.
- (h) Install the fuel selector valve cover and attaching screws.
- (i) Install the floor mat. The mat snaps into place.
- (j) Restore electrical power to the airplane (Ref. 24-36-00, 301, ELECTRICAL POWER - CONNECT).

B. Fuel Selector Valves

The fuel selector valves are located in the left and right wheel wells.

Warning: Read and understand the FUEL SYSTEM SAFETY PRECAUTIONS listed in Chapter 28-00-00, 201, before doing any work on the fuel system.

(1) Fuel Selector Valve - Removal (TC-1970, TC-2003 and After; TE-1081, TE-1084 and After; TH-1 thru TH-1487, TH-1489 thru TH-1599, TH-1601 thru TH-1612)

Refer to [Figure 202](#).

- (a) Remove electrical power from the airplane (Ref. [24-36-00, 301, ELECTRICAL POWER - DISCONNECT](#)).
- (b) Drain the fuel system.
- (c) Place the airplane on jacks and partially retract the gear until the inboard main gear door is fully extended.
- (d) Perform the [FUEL SELECTOR VALVE CONTROL CABLE - REMOVAL](#) procedures.
- (e) Remove the fuel selector valve plumbing.
- (f) Remove the bolts securing the fuel selector valve to the mounting bracket.
- (g) Remove the fuel selector valve from the mounting bracket.

(2) Fuel Selector Valve - Installation (TC-1970, TC-2003 and After; TE-1081, TE-1084 and After; TH-1 thru TH-1487, TH-1489 thru TH-1599, TH-1601 thru TH-1612)

Refer to [Figure 202](#).

- (a) Be sure electrical power has been removed from the airplane (Ref. [24-36-00, 301, ELECTRICAL POWER - DISCONNECT](#)).
- (b) Lubricate the fuel line threads with antiseize compound before installation (Ref. [20-10-00, 201, Table 203, TABLE OF THREAD LUBRICANTS](#)).
- (c) Position the fuel selector valve to the mounting bracket and install the attaching bolts.
- (d) Install the fuel selector valve plumbing.
- (e) Rig the fuel selector valve control cable. (Ref. [FUEL SELECTOR VALVE CONTROL CABLE - INSTALLATION AND RIGGING](#)).
- (f) Restore electrical power to the airplane (Ref. [24-36-00, 301, ELECTRICAL POWER - CONNECT](#)).
- (g) Do the [FUEL SELECTOR VALVE - INSPECTION AND OPERATIONAL CHECK](#)

(3) Fuel Selector Valve - Removal (TH-1488, TH-1600, TH-1613 and After)

Refer to [Figure 203](#).

- (a) Remove electrical power from the airplane (Ref. [24-36-00, 301, ELECTRICAL POWER - DISCONNECT](#)).
- (b) Drain the fuel system.
- (c) Place the airplane on jacks and partially retract the gear until the inboard main gear door is fully extended.
- (d) Do the [FUEL SELECTOR VALVE/GEARBOX CONTROL CABLE - REMOVAL](#) procedure.

Caution: The coupler (item 7) does not need to be removed for the removal of the fuel selector valve (item 2) from the system. If, for any reason, the coupler is turned the set screw (item 6) MUST FIRST BE REMOVED otherwise damage to the fuel selector valve (item 2) will occur.

- (e) Remove the fuel selector valve plumbing.
- (f) Remove the bolts securing the fuel selector valve to the mounting bracket.
- (g) Remove the fuel selector valve from the mounting bracket.

(4) Fuel Selector Valve - Installation (TH-1488, TH-1600, TH-1613 and After)

Refer to [Figure 203](#).

- (a) Be sure electrical power has been removed from the airplane (Ref. [24-36-00, 301, ELECTRICAL POWER - DISCONNECT](#)).
- (b) Lubricate the fuel line threads with antiseize compound before installation (Ref. [20-10-00, 201, Table 202, TABLE OF](#)

THREAD LUBRICANTS).

- (c) Position the fuel selector valve (item 2) to the mounting bracket and install the attaching bolts.
- (d) Install and torque the fuel selector valve plumbing connections.
- (e) Rig the fuel selector valve control cable (item 1). (Ref. FUEL SELECTOR VALVE/GEARBOX CONTROL CABLE - INSTALLION AND RIGGING).
- (f) Restore electrical power to the airplane (Ref. 24-36-00, 301, ELECTRICAL POWER - CONNECT).
- (g) Do the FUEL SELECTOR VALVE - INSPECTION AND OPERATIONAL CHECK

(5) Fuel Selector Valve - Plumbing Leakage Repair (TH-1488, TH-1600, TH-1613 and After)

Refer to Figure 203.

- (a) Remove the fuel selector valve (Ref. FUEL SELECTOR VALVE - REMOVAL (TH-1488, TH-1600, TH-1613 AND AFTER)).
- (b) Remove the set screw (item 6).
- (c) Remove the coupler (item 7).
- (d) Check the screw threads on the coupler (item 7) and the fuel selector valve (item 2). If threads are damaged, replace component(s). If threads are okay, go to step (e).
- (e) Check O-ring, replace if damaged.
- (f) Install the coupler (item 7).
- (g) Install the set screw (item 6).
- (h) Install the fuel selector valve (Ref. FUEL SELECTOR VALVE - INSTALLATION (TH-1488, TH-1600, TH-1613 AND AFTER)).

C. Fuel Selector Valve - Inspection and Operational Check

Check to be sure that the gearbox assembly properly selects all fuel selector valve assembly positions (OFF-ON-CROSSFEED) and that positive detents are felt in all positions. The gearbox handle is properly installed if the handle pointer swings in the arc forward toward the nose end of the aircraft. The handle is improperly installed if the pointer swings in the arc aft toward the tail end of the aircraft.

D. Fuel Selector Valve Control Cable (TC-1970, TC-2003 and After; TE-1081, TE-1084 and After; TH-1 thru TH-1487, TH-1489 thru TH-1599, TH-1601 thru TH-1612)

Warning: Read and understand the FUEL SYSTEM SAFETY PRECAUTIONS listed in Chapter 28-00-00, 201, before doing any work on the fuel system.

(1) Fuel Selector Valve Control Cable - Removal

- (a) Remove electrical power from the airplane (Ref. 24-36-00, 301, ELECTRICAL POWER - DISCONNECT).

Note: The slider is secured by a snap-ring.

- (b) Remove cover plate, overtravel tube, and slider from the fuel selector valve gear box (Ref. Figure 202). The fuel selector gear box is part of the fuel selector valve and is located in the wheel well.
- (c) Rotate selector handle pointer (located in the fuel panel) to the OFF position.
- (d) Rotate the fuel selector cable (located in the wheel well) by hand until the cable is disengaged from the fuel selector panel.

Caution: Handle the fuel selector cable with care to prevent damage.

- (e) Slide the fuel selector cable out of housing and the fuel selector valve gear box.

(2) Fuel Selector Valve Control Cable - Installation and Rigging

- (a) Before installing and rigging the fuel selector valve control cable, make sure the fuel selector control panel assembly has been installed, the cable housing is routed through the structure, and the fuel selector valve has been installed in wheel well.
- (b) Make sure that electrical power has been removed from the airplane (Ref. 24-36-00, 301, ELECTRICAL POWER - DISCONNECT).

- (c) Remove the cover plate, overtravel tube and slider (held by a snap-ring) from selector valve gear box (located in wheel well) (Ref. [Figure 202](#)).

Note: To aid in the rigging procedure, a locally manufactured Rigging Tool may be constructed for turning the selector gear (Ref. [Figure 204](#)). The handle is constructed of 1/4 or 3/8 inch diameter tubing. The 1/8 inch diameter, 1/4 inch long pins shall be constructed of steel. These pins make contact with the selector gear.

- (d) Set the selector valve (using a spanner wrench or rigging tool) to the CROSSFEED position (arrow on selector gear at 12 o'clock).

Caution: Handle the fuel selector cable carefully to prevent kinks and damage to the cable.

- (e) Insert the cable through the overtravel port and slide through the gear box and cable housing. Make sure the cable slides freely with no hang-ups.
- (f) Slide the cable inboard until the inboard end makes contact with the gear in the selector. The outboard end of the cable should be approximately 4 in. from the gear box surface.
- (g) Set the selector handle pointer (located in the fuel selector panel) to the CROSSFEED position (pointing inboard). Hold in position.
- (h) Rotate the cable (LH threads) until the tip end of the cable is 2.8 inches minimum to 3.2 inches maximum from the gear box surface.
- (i) Install the slider and secure with the snap-ring (removed in Step c.).
- (j) Install the overtravel tube (removed in Step c.).
- (k) Cycle the selector handle to all positions and check for proper operation and selection.
- (l) Safety wire ([Ref. 20-07-00, 201, SAFETY WIRE/LOCKWIRE](#)) the overtravel tube.
- (m) Install and safety wire ([Ref. 20-07-00, 201, SAFETY WIRE/LOCKWIRE](#)) cover plate screws.
- (n) Do not apply grease or oil to gear.
- (o) Restore electrical power to the airplane ([Ref. 24-36-00, 301, ELECTRICAL POWER - CONNECT](#)).
- (p) Do the [FUEL SELECTOR VALVE - INSPECTION AND OPERATIONAL CHECK](#)

E. Fuel Selector Valve/Gearbox Control Cable (TH-1488, TH-1600, TH-1613 and After)

Refer to [Figure 205](#)

The gearbox assembly, with selector handles, is located in the cabin. The fuel selector valves are located in the left and right wheel wells.

Warning: Read and understand the FUEL SYSTEM SAFETY PRECAUTIONS listed in [Chapter 28-00-00, 201](#), before doing any work on the fuel system.

(1) Removal

- (a) Remove electrical power from the airplane ([Ref. 24-36-00, 301, ELECTRICAL POWER - DISCONNECT](#)).

To remove the control cable from the fuel selector valve in the wheel well(s):

- (b) Rotate the cabin mounted gearbox assembly handle(s) to the OFF position (full counterclockwise for LH gearbox assembly; full clockwise for RH gearbox assembly).
- (c) The fuel selector valve will be received in the OFF position.
- (d) Remove the cable assembly covernut from the fuel selector valve coupler.

Caution: Handle the fuel selector cable with care to prevent damage.

- (e) With the cabin mounted gearbox assembly handle in the OFF position, the fuel selector valve rack should extend outward enough to allow the removal of the cable end fitting and cable retainer from the fuel selector valve coupler.

To remove the control cable(s) from the gearbox in the cabin:

- (f) Rotate the cabin mounted gearbox assembly handle to the CROSS-FEED position (full clockwise for LH gearbox assembly; full counterclockwise for RH gearbox assembly).

- (g) Remove the cable assembly covernut from the gearbox assembly coupler.

Caution: Handle the fuel selector cable with care to prevent damage.

- (h) With the gearbox assembly in the CROSS-FEED position, the gearbox assembly rack should extend outward enough to allow the removal of the cable end fitting and cable retainer from the gearbox assembly coupler.

(2) Installation and Rigging

- (a) Before installing and rigging the fuel selector valve/gearbox control cable, make sure the fuel selector control panel assembly has been installed, that the cable housing is routed through the structure, and the fuel selector valve has been installed in wheel well.
- (b) Make sure that electrical power has been removed from the airplane (Ref. [24-36-00, 301, ELECTRICAL POWER - DISCONNECT](#)).

To install the control cable to the gearbox in the cabin:

- (c) Make sure the cabin mounted gearbox assembly handle is still in the CROSS-FEED position (full clockwise for LH gearbox assembly; full counterclockwise for RH gearbox assembly). If required, rotate the rack so that the slotted area is positioned as shown.
- (d) In this position, the gearbox assembly rack should extend outward enough to allow the attachment of the cable assembly. If required, rotate the rack so the slotted area is positioned as shown (Ref. [Figure 205, Sheet 1 and 2](#)).

Caution: Handle the fuel selector cable with care to prevent damage.

Note: When installing the cable assembly covernut on the gearbox assembly coupler, the covernut should only be hand-tightened.

- (e) With the cable assembly in the retracted position, insert the cable end fitting into the rack and simultaneously insert the cable retainer into the gearbox assembly coupler. Install the cable assembly covernut on the gearbox assembly coupler (Ref. [Figure 205, Sheet 1 and 2](#)).

To install the control cable to the fuel selector valve in the wheel well:

- (f) Rotate the cabin mounted gearbox assembly handle to the OFF position (full counterclockwise for LH gearbox assembly; full clockwise for RH gearbox assembly).
- (g) The fuel selector valve should still be in the OFF position (Ref. REMOVAL, step b.). In this position, the selector valve rack should extend outward enough to allow the attachment of the cable assembly. If required, rotate the rack to position the slot (Ref. [Figure 205, Sheet 1 and 2](#)).

Caution: Handle the fuel selector cable with care to prevent damage.

Note: When installing the cable assembly covernut on the fuel selector valve coupler, the covernut should only be hand-tightened.

- (h) With the cable assembly in the retracted position, insert the cable end fitting into the fuel selector valve rack and simultaneously insert the cable retainer into the fuel selector valve coupler. Install the cable assembly covernut on the fuel selector valve coupler (Ref. [Figure 205, Sheet 1 and 2](#)).
- (i) Restore electrical power to the airplane (Ref. [24-36-00, 301, ELECTRICAL POWER - CONNECT](#)).
- (j) Do the [FUEL SELECTOR VALVE - INSPECTION AND OPERATIONAL CHECK](#).
- (k) When it is established that the system is operating correctly, safety wire ([Ref. 20-07-00, 201, SAFETY WIRE/LOCKWIRE](#)) the cable assembly covernuts to the gearbox assembly in the cabin and the fuel selector valve assembly in the wheel well.

F. Fuel Selector Valve Cable Housing - Installation (TC-1970, TC-2003 thru TC-2103, TC-2123 thru TC-2128; TE-1018, TE-1084 thru TE-1118, TE-1123 thru TE-1125; TH-766, TH-773 thru TH-824)

Warning: Read and understand the FUEL SYSTEM SAFETY PRECAUTIONS listed in [Chapter 28-00-00, 201](#), before doing any work on the fuel system.

- (1) Remove electrical power from the airplane (Ref. [24-36-00, 301, ELECTRICAL POWER - DISCONNECT](#)).
- (2) Remove floorboards and/or panels to gain access.
- (3) Remove the cover plate and the slider from the fuel selector valve in the wheel well.

Note: To reduce flexing and help maintain the life of the cable housing, clamps may be installed on the cable assembly. Refer to Figure 206 for installation of clamps.

- (4) Unscrew both ends of the cable housing and disengage both ends of the cable from the valve and from the control panel assembly.
- (5) Remove all clamps which may secure cable assembly
- (6) Remove the complete cable assembly.
- (7) Remove the cable from the cable housing and discard the housing.
- (8) Lubricate the cable with a light film of anti-seize compound (20-40-00, Table 1, 83).
- (9) Install the cable in the cable housing.
- (10) Install the cable assembly.
- (11) Connect cable to the fuel control panel and to the fuel selector valve.
- (12) Rig the fuel selector valve cable(s) (Ref. [FUEL SELECTOR VALVE CONTROL CABLE - INSTALLATION AND RIGGING](#) (TC-1970, TC-2003 and After; TE-1081, TE-1084 and After; TH-1 thru TH-1487, TH-1489 thru TH-1599, TH-1601 thru TH-1612).
- (13) Install the cover plate and the slider from the fuel selector valve in the wheel well.
- (14) Do [FUEL SELECTOR VALVE CONTROL CABLE HOUSING - INSPECTION](#).
- (15) Install floorboards and panels.
- (16) Restore electrical power to the airplane (Ref. [24-36-00, 301, ELECTRICAL POWER - CONNECT](#)).

G. Fuel Selector Valve Control Cable Housing - Inspection (TC-1970, TC-2003 thru TC-2103, TC-2123 thru TC-2128; TE-1018, TE-1084 thru TE-1118, TE-1123 thru TE-1125; TH-766, TH-773 thru TH-824)

Warning: Read and understand the FUEL SYSTEM SAFETY PRECAUTIONS listed in Chapter 28-00-00, 201, before doing any work on the fuel system.

- (1) Operate the fuel selector controls to determine ease of operation. If operation is smooth and firm without control handle overtravel, the control cable housing is in good condition. If operation is rough and/or spongy, or if there is control handle overtravel, the control cable housing must be inspected in accordance with the following steps:
- (2) Remove electrical power from the airplane (Ref. [24-36-00, 301, ELECTRICAL POWER - DISCONNECT](#)).
- (3) Remove chairs, floorboards, and/or panels to gain access to the fuel selector cables.
- (4) Visually inspect the swaged cable housing ends in the wheel wells while operating the control handle. If movement or looseness is found, replace the housing (Ref. [FUEL SELECTOR VALVE CABLE HOUSING - INSTALLATION](#)).
- (5) Install all chairs, floorboards, and panels.
- (6) Restore electrical power to the airplane (Ref. [24-36-00, 301, ELECTRICAL POWER - CONNECT](#)).

H. Fuel Boost Pump

Warning: Read and understand the FUEL SYSTEM SAFETY PRECAUTIONS listed in Chapter 28-00-00, 201, before doing any work on the fuel system.

(1) Fuel Boost pump - Removal

- (a) Remove electrical power from the airplane (Ref. [24-36-00, 301, ELECTRICAL POWER - DISCONNECT](#)).
- (b) Drain the fuel from the wing cells.

Note: When a malfunctioning pump is replaced, the opposing pump plus the crossfeed valve may be utilized to drain the affected wing.

- (c) After the fuel is drained, place the fuel selector valve in the OFF position.
- (d) Disconnect all the electrical power to the airplane.
- (e) Disconnect the electrical lead to the pump.

- (f) Cut the safety wire and loosen the mounting bracket.
- (g) Remove the plumbing to the fuel boost pump. Note inlet and outlet ports position on pump.
- (h) Remove the retaining bolts.
- (i) Remove the pump.

(2) Fuel Boost Pump - Installation

- (a) Be sure that electrical power has been removed from the airplane (Ref. [24-36-00, 301, ELECTRICAL POWER - DISCONNECT](#)).
- (b) Position the pump in place, being certain the inlet and outlet ports are in the same position as when the pump was removed.
- (c) Install the retaining bolts.
- (d) Connect the plumbing and install the bracket. Safety wire ([Ref. 20-07-00, 201, SAFETY WIRE/LOCKWIRE](#)).
- (e) Connect the electrical lead.
- (f) Restore electrical power to the airplane (Ref. [24-36-00, 301, ELECTRICAL POWER - CONNECT](#)).

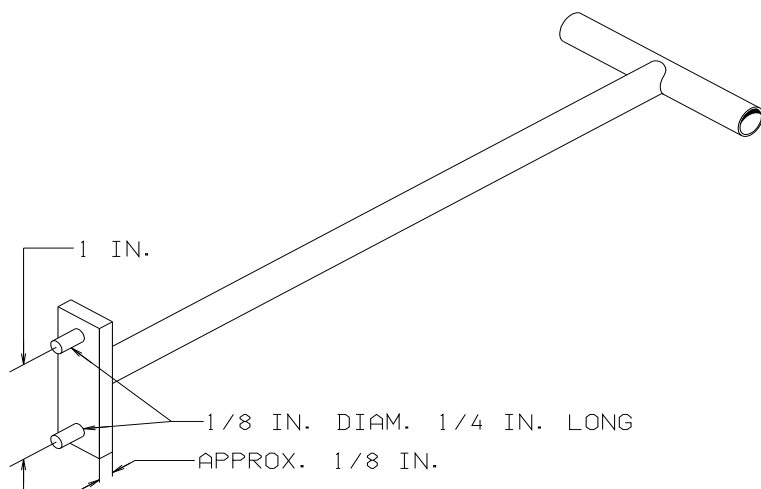
I. External Fuel Cell Vent Line - Inspection

Warning: Read and understand the **FUEL SYSTEM SAFETY PRECAUTIONS** listed in [Chapter 28-00-00, 201](#), before doing any work on the fuel system.

The end of the fuel vent lines should extend 10° forward from vertical for a distance of 1.75 inches below the lower surface of the wing (Ref. [Figure 206](#)). The end of the line is scarfed at a 45° angle facing forward to ensure a positive vent pressure. Any other configuration would create a negative pressure that would pull the air, or air and fuel from the fuel cell. At airplane serials TC-1608 and After; TE-938, TE-943 and After; and TH-1 and After, the external vent tube is electrically heated to protect it from icing conditions. The two major components of the system are the 5-amp circuit breaker in the left subpanel and the heater wrapped around the exposed portion of the vent. The resistance of the heater at room temperature should be between 18.72 and 22.88 ohms for a delivery of 37.5 watts at 28 volts.

Figure 201 : Sheet 1 : Fig 201 - Fuel Selector Valve - Control (TC-1 thru TC-1607; TE-1 thru TE-942 Except TE-938)

E21816



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Figure 202 : Sheet 1 : Fig 202 - Fuel Selector Valve (TC-1970, TC-2003 and After; TE-1081, TE-1084 and After; TH-1 thru TH-1487, TH-1489 thru TH-1599, TH-1601 thru TH-1612)

E21804

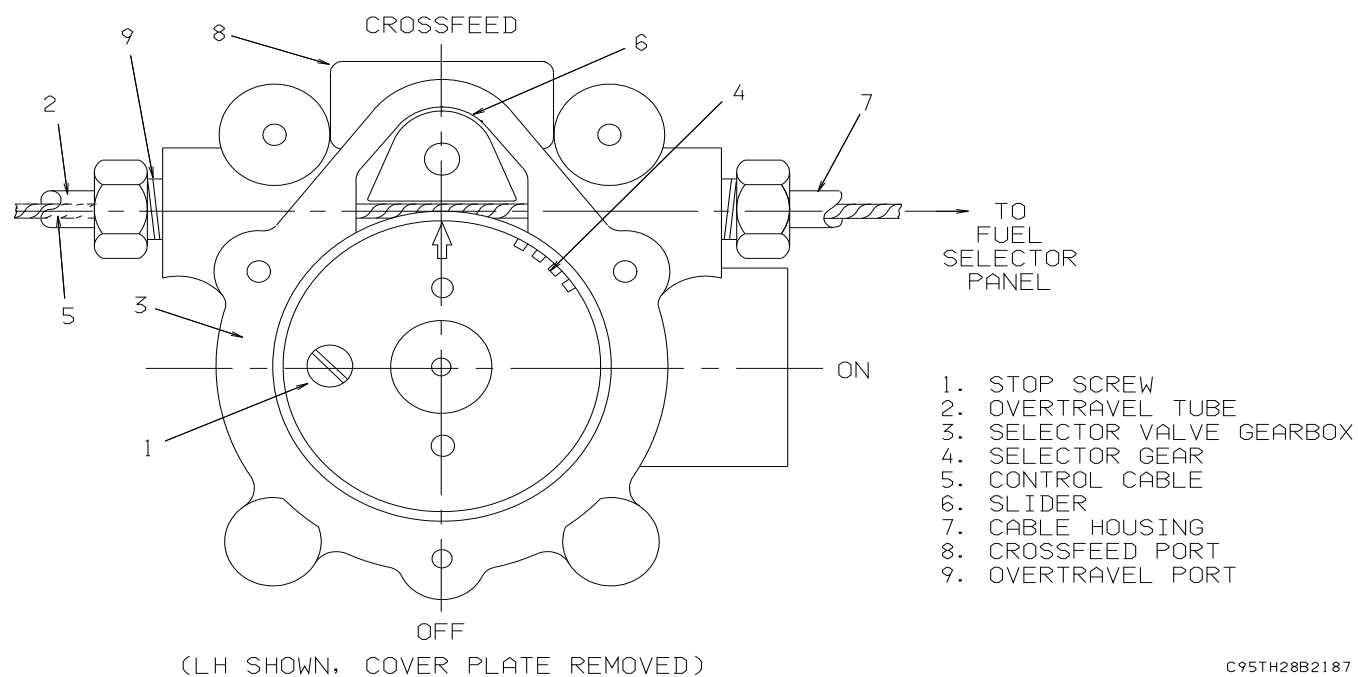
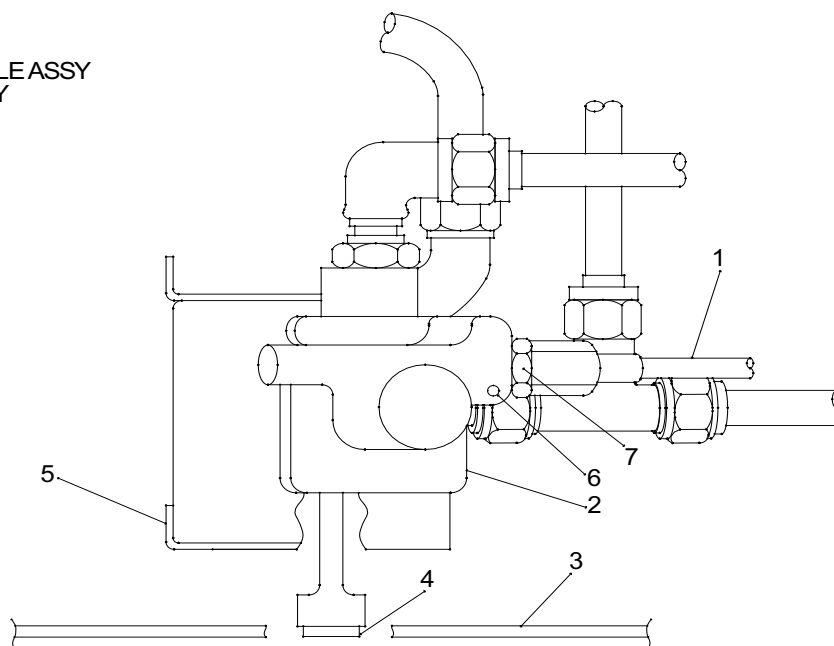


Figure 203 : Sheet 1 : Fig 203 (Revised) - Fuel Selector Valve (TH-1488, TH-1600, TH-1613 and After)

E21795

1. SELECTOR VALVE CABLE ASSY
2. SELECTOR VALVE ASSY
3. LOWER WING SKIN
4. DRAIN VALVE
5. SPAR BRACKET
6. SET SCREW *
7. COUPLER

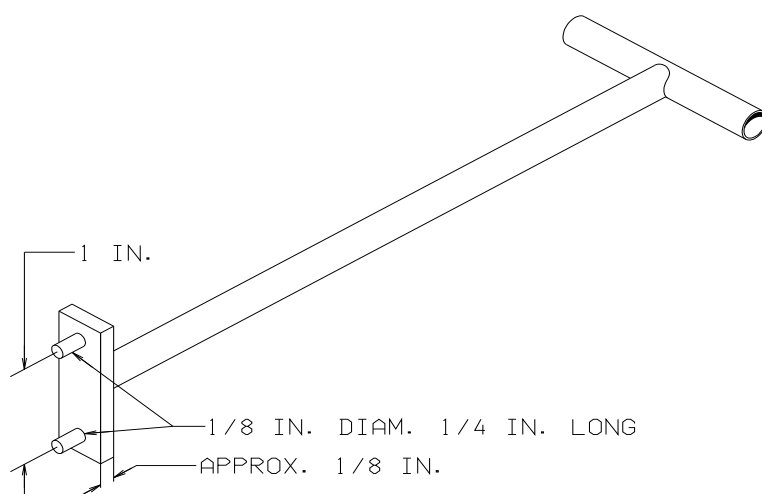


* SET SCREW MUST BE
REMOVED BEFORE
TURNING COUPLER.

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Figure 204 : Sheet 1 : Fig 204 - Rigging Tool (TC-1970, TC-2003 and After; TE-1081, TE-1084 and After; TH-1 thru TH-1487, TH-1489 thru TH-1599, TH-1601 thru TH-1612)

E21781



C95TH28B2188 C

Figure 205 : Sheet 1 : Fig 205 - Fuel Selector Valve Assembly/Gearbox Assembly - Cable Installation

E21768

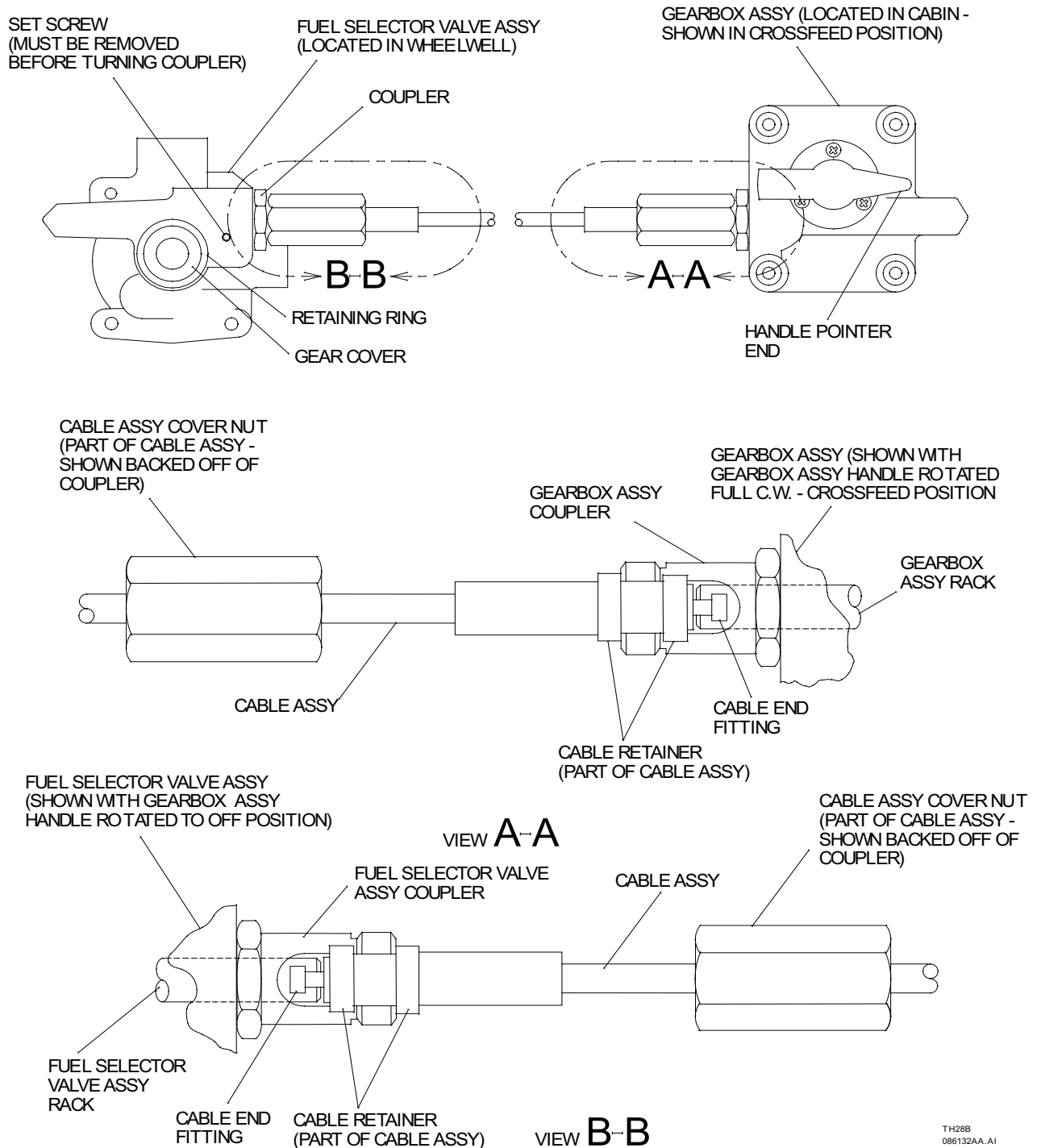
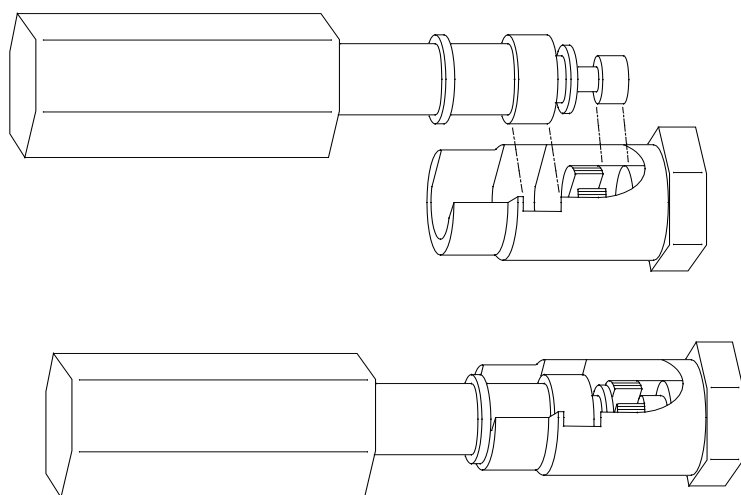
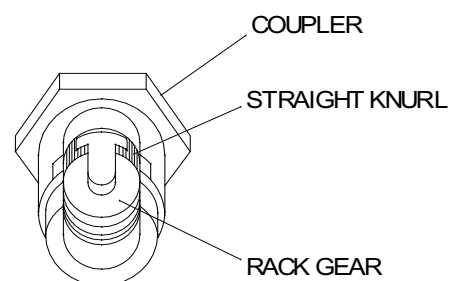


Figure 205 : Sheet 2 : Fig 205 - Fuel Selector Valve Assembly/Gearbox Assembly - Cable Installation

E21762



DETAIL 'A' CORRECT CABLE INSTALLATION



CORRECT SLOT ALIGNMENT SHOWN BETWEEN
RACK GEAR AND COUPLER. TO OBTAIN CORRECT
SLOT ALIGNMENT ROTATE RACK GEAR BY USING
SHARP OBJECT IN STRAIGHT KNURL ON RACK GEAR.

DETAIL 'B' CORRECT RACK GEAR ALIGNMENT

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Figure 206 : Sheet 1 : Fig 206 - Cable Housing Through The Wing Root Rib

E21754

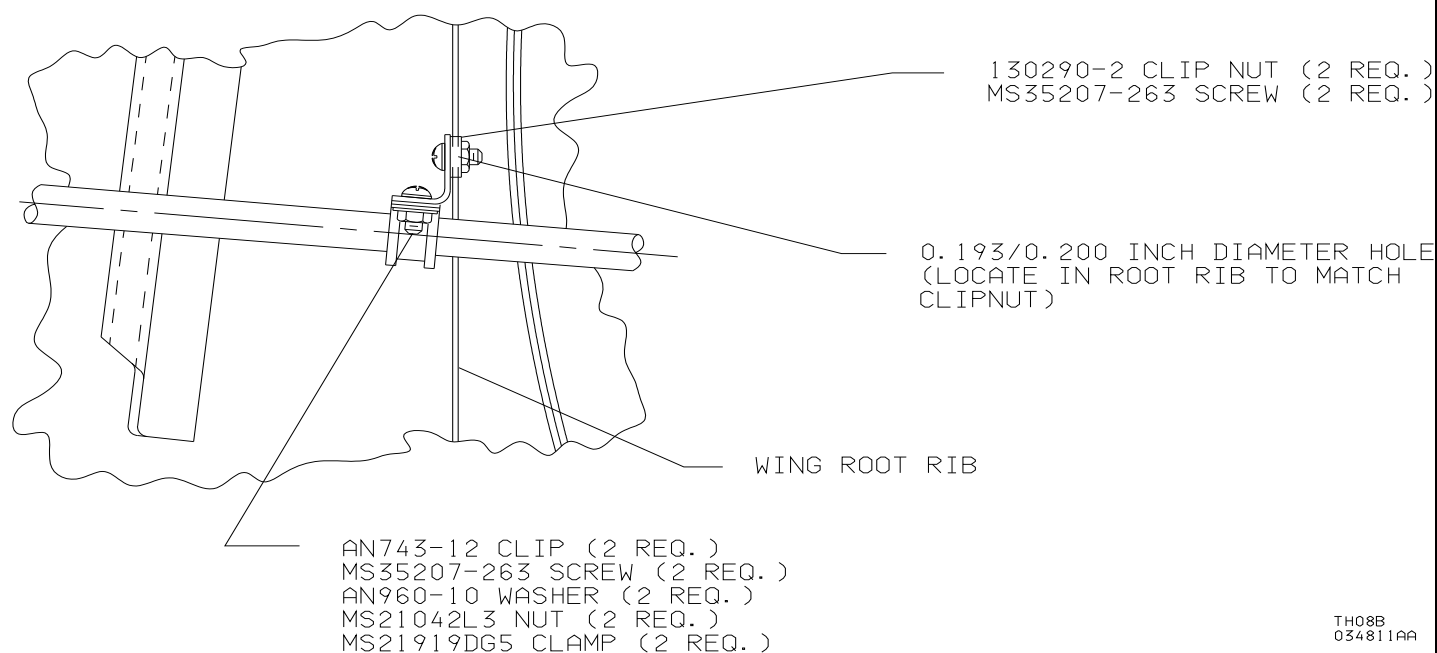
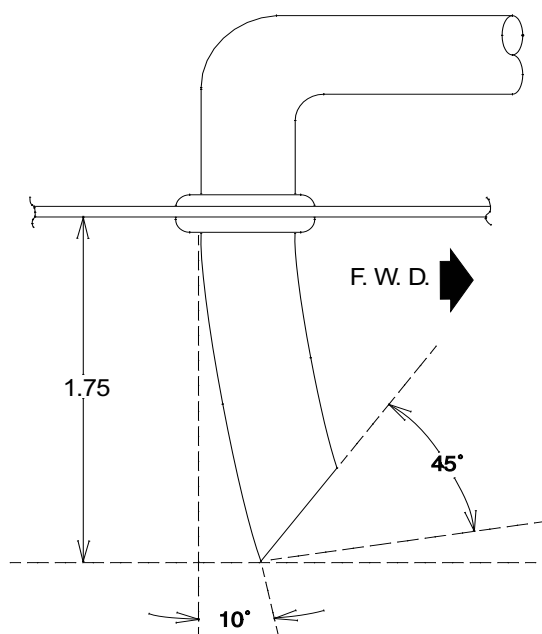


Figure 207 : Sheet 1 : Fig 207 - Fuel Vent Line

E21750



36-280-2.A1

FUEL INDICATING MAINTENANCE PRACTICES

1. FUEL - INDICATING - MAINTENANCE PRACTICES

A. Fuel Cell Transmitter

Warning: Read and understand the FUEL SYSTEM SAFETY PRECAUTIONS listed in Chapter 28-00-00, 201, before doing any work on the fuel system.

(1) Fuel Cell Transmitter - Removal

- (a) Remove electrical power from the airplane (Ref. 24-36-00, 301, ELECTRICAL POWER - DISCONNECT).
- (b) Remove the access cover over the applicable fuel cell transmitter (Ref. Figure 201 for upper fuel cell transmitter access cover location).
- (c) Disconnect the electrical leads from the fuel cell transmitter.
- (d) Remove the screws securing the fuel cell transmitter to the fuel cell.
- (e) Remove the fuel cell transmitter from the fuel cell. Use care to avoid bending the float wire.

(2) Fuel Cell Transmitter - Installation

Note: For airplane serials TC-1 thru TC-1607; and TE-1 thru TE-942 except TE-938, that have P/N 95-380012-1 and 95-380012-3 fuel level transmitters installed, refer to REPLACEMENT FUEL LEVEL TRANSMITTER - INSTALLATION (TC-1 thru TC-1607; and TE-1 thru TE-942 except TE-938) for replacement and installation instructions.

- (a) Before installing the fuel cell transmitter, inspect if liner material is grommet or felt. If grommet, replace as required. If felt is replaced, fold a 1/2 x 1/16 inch strip of felt around the edge of the opening in the liner and cement with sealer (20-40-00, Table 1, 2).
- (b) Be sure electrical power has been removed from the airplane (Ref. 24-36-00, 301, ELECTRICAL POWER - DISCONNECT).
- (c) Position the fuel cell transmitter in the fuel cell.
- (d) Make sure the float arm is mechanically free through its full range of travel. Non-metallic floats must turn freely on the float arm.
- (e) Install and torque the retaining screws to 25 in-lbs and safety wire (Ref. 20-07-00, 201, SAFETY WIRE/LOCKWIRE).
- (f) Connect the electrical leads to the fuel cell transmitter.
- (g) Install the access cover over the fuel cell transmitter
- (h) Restore electrical power to the airplane (Ref. 24-36-00, 301, ELECTRICAL POWER - CONNECT).

(3) Replacement Fuel Level Transmitter - Installation (TC-1 thru TC-1607; TE-1 thru TE-942 except TE-938)

The fuel level transmitters (P/N 95-380012-1 and 95-380012-3) that were originally installed in the inboard leading edge of the main fuel cell on airplane serials TC-1 thru TC-1607; and TE-1 thru TE-942 except TE-938 are not available for spares replacement. The replacement transmitters that are available are not of the same manufacturer and are not compatible with the original inboard and outboard fuel cell transmitters (P/N 95-380012-1 and 95-380012-3) in the same wing indicating system. Because they are not compatible, whenever an original fuel cell transmitter is replaced in a wing, the other fuel cell transmitter in the same wing must also be replaced with a fuel cell transmitter of the same manufacturer. After the initial replacement of both fuel cell transmitters and the accomplishment of the required rewiring, the fuel cell transmitters may be replaced individually as required for maintenance of the airplane.

The current fuel level sensor which should be used as a replacement for the inboard fuel cell transmitter is P/N 95-380012-13. This unit supersedes P/N 95-380012-5 and is a replacement for P/N 95-380012-1.

Note: A serviceable fuel cell transmitter (P/N 95-380012-5) which has been previously installed as a replacement and is stamped with the manufacturers P/N 7740-56, may be reused.

The current fuel level sensor which should be used as a replacement for the outboard fuel cell transmitter is P/N 95-380012-15. This transmitter supersedes P/N 95-380012-7 and is a replacement for P/N 95-380012-3.

Note: A serviceable fuel cell transmitter (P/N 95-380012-7) which has been previously installed as a replacement and is

stamped with the manufacturers P/N 7740-55, may be reused.

The fuel quantity electrical circuit for the inboard leading edge fuel cell must be re-connected whenever the original fuel level transmitters are replaced. The required electrical circuit connections are provided in Figure 202, and are also included in Kit 55-9018 (which is furnished with the purchase of the replacement transmitters). The electrical circuit changes consist of re-connecting the wires in a single wing fuel quantity indicating system using the existing fuel gage and existing wires.

For the physical removal and installation of the fuel cell transmitter, refer to [FUEL CELL TRANSMITTER - REMOVAL](#) and [FUEL CELL TRANSMITTER - INSTALLATION](#).

(4) Fuel Quantity Indicator - Adjustment (TC-1 thru TC-1607; TE-1 thru TE-942 except TE-938)

The fuel quantity system may be adjusted by removing the liquidometer access covers from the cells and bending the float wire up or down slightly to obtain the proper reading in both the full and empty tank conditions.

Note: Do not raise the outboard float in the auxiliary cell or the 40 gallon main cell when the inboard float is on the bottom of the cell and power is applied to the circuit. Never reverse the power leads to the 25 gallon main cell transmitter. These actions will cause excessive current flow in the circuit.

Airplane serials TC-113, TC-129, TC-133, TC-141, TC-148, TC-164, TC-166, TC-168 thru TC-1607; TE-1 thru TE-942 except TE-938, and any prior airplanes incorporating Service Letter No. 4, have two 50-ohm resistors to protect the system components.

Two fuses are installed to protect the system on airplane serials TC-1, TC-2, and TC-34 thru TC-167 except TC-113, TC-129, TC-133, TC-141, TC-148, TC-164, TC-166 and airplanes modified according to Service Letter No. 4.

Airplanes serials TC-3 thru TC-33 not modified according to Service Letter No. 4 have no circuit protection other than the 5 amp circuit breaker. On these airplanes, excessive current may burn out the fuel level transmitter.

B. Inboard Wing Leading Edge Fuel Cell Transmitter Outboard Cover Plate Insulator - Installation (TC-1609 thru TC-1635; TE-943 thru TE-957; TH-386 thru TH-413)

Warning: Read and understand the FUEL SYSTEM SAFETY PRECAUTIONS listed in Chapter 28-00-00, 201, before doing any work on the fuel system.

- (1) Remove electrical power from the airplane (Ref. [24-36-00, 301, ELECTRICAL POWER - DISCONNECT](#)).
- (2) Remove the outboard fuel transmitter cover from the inboard wing leading edge fuel cell (Ref. [Figure 201](#)).
- (3) Install the phenolic insulator on the inner surface of the cover with adhesive ([20-40-00, Table 1, 85](#)).
- (4) Install the outboard fuel transmitter cover.
- (5) Restore electrical power to the airplane (Ref. [24-36-00, 301, ELECTRICAL POWER - CONNECT](#)).

C. Fuel Quantity Gages - Adjustment (TC-1608 and After; TE-938, TE-943 and After; TH-1 and After)

Warning: Read and understand the FUEL SYSTEM SAFETY PRECAUTIONS listed in Chapter 28-00-00, 201, before doing any work on the fuel system.

(1) Adjustment For Full Reading

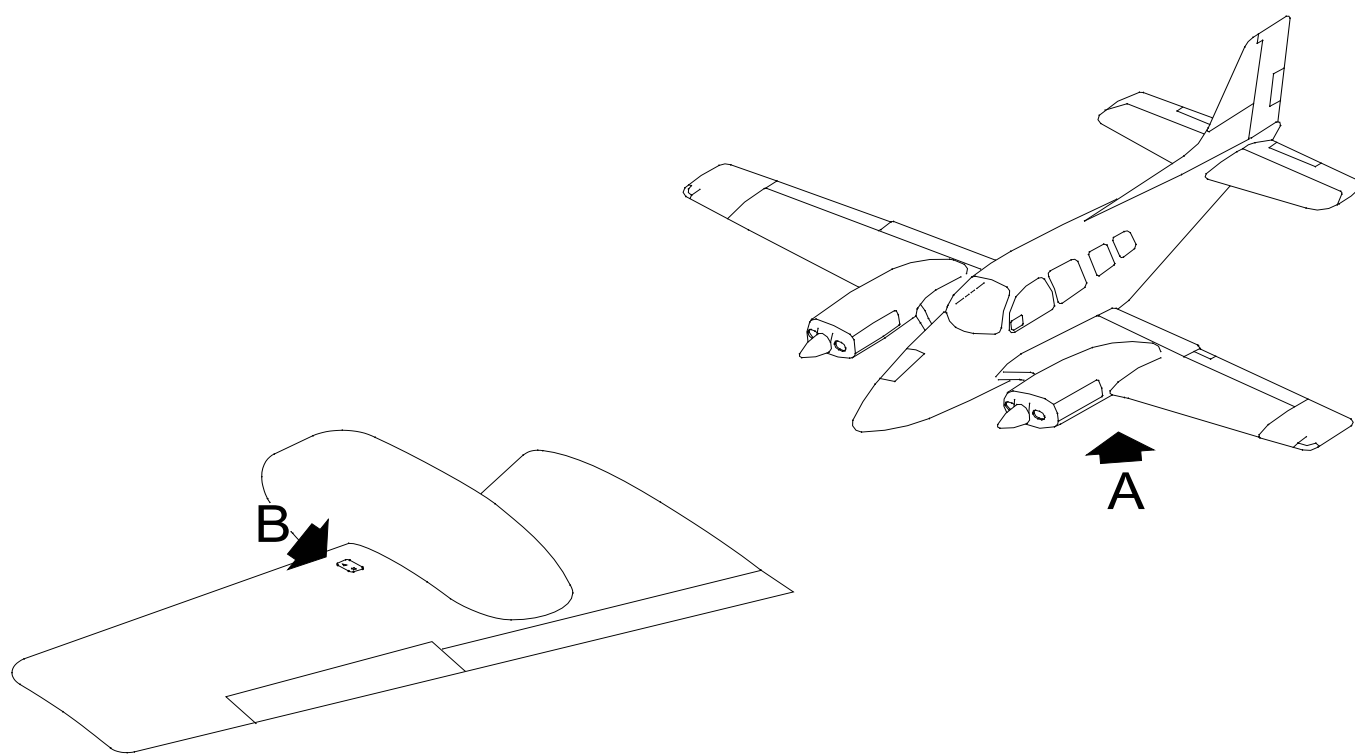
- (a) Make sure that the fuel cell(s) to be calibrated are completely full. The fuel quantity gages shall register a F (full) reading.
- (b) Remove electrical power from the airplane (Ref. [24-36-00, 301, ELECTRICAL POWER - DISCONNECT](#)).
- (c) Remove the glareshield (Ref. [53-00-00, 201, GLARESHIELD - REMOVAL](#)).
- (d) Locate the two printed circuit boards on the back of the instrument panel just to the left of center.
- (e) Locate the calibration screw in the back of each printed circuit board.
- (f) Calibrate the fuel quantity gage by turn the calibration screw in back of the corresponding printed circuit board until the needle on the fuel quantity gage points to the F (full) mark.
- (g) Reinstall the glareshield (Ref. [53-00-00, 201, GLARESHIELD - INSTALLATION](#)).
- (h) Restore electrical power to the airplane (Ref. [24-36-00, 301, ELECTRICAL POWER - CONNECT](#)).

(2) Adjustment For Empty Reading

The fuel quantity gages can be adjusted to register an E (empty) position by carefully bending the float arms of the inboard fuel quantity transmitters. The fuel gages should read E (empty) with three (3) gallons of unusable fuel aboard.

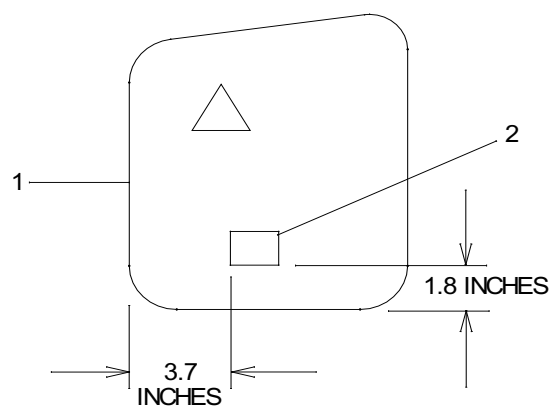
Figure 201 : Sheet 1 : Fig 201 - Insulator Installation

E21748

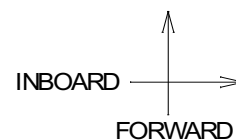


DETAIL A

1. UPPER FUEL CELL TRANSMITTER ACCESS
2. INSULATOR



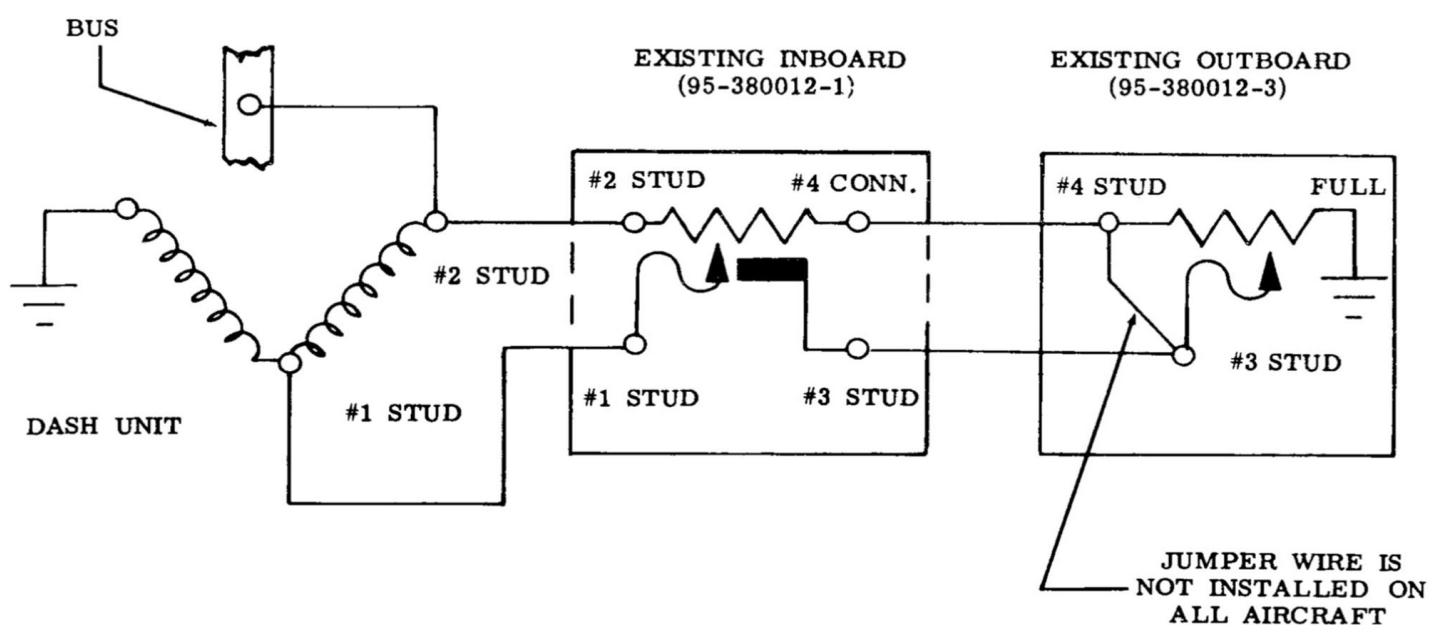
DETAIL B



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Figure 202 : Sheet 1 : Fig 202 - Wiring Diagram (Original Fuel Cell Transmitters) without Kit 55-9018

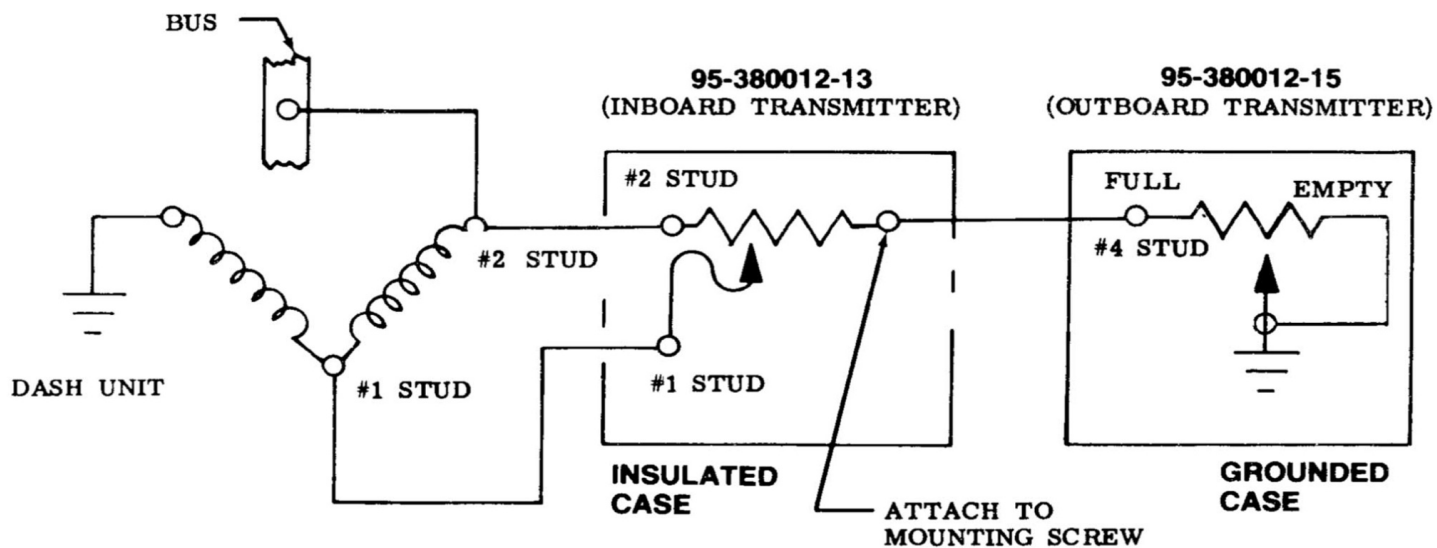
E16166



55-369-265

Figure 203 : Sheet 1 : Fig 203 - Wiring Diagram (Replacement Inboard and Outboard Fuel Cell Transmitters) with Kit 55-9018

E16169



55-369-264