

CHAPTER 28**FUEL SYSTEM**

<u>Section</u>	<u>Title</u>	<u>Page</u>
28-00	Description	28.1
28-10	Bladder Assembly	28.3
28-11	Rollover Valves	28.5
28-12	Sump Valve	28.6
28-20	Fuel Quantity	28.7
28-21	Fuel Quantity Sender	28.7
28-22	Low-Fuel Switch Assembly	28.10
28-30	Fuel Valve	28.13
28-31	Fuel Valve Control Rigging	28.13
28-40	Fuel Flow Check	28.14
28-50	Aux Fuel System	28.17
28-51	Tank Assembly	28.18
28-52	Support Assembly	28.20
28-53	Bladder	28.21
28-54	Fuel Quantity Sender	28.25
28-55	Pump Assembly	28.25

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CHAPTER 28

FUEL SYSTEM

28-00 Description

A single bladder-type crash-resistant fuel cell supplies fuel via gravity flow to the engine. The fuel cell incorporates left and right vent fittings, a filler port, a fuel gage sender, a low-fuel switch assembly, a sump drain, and a finger strainer at the fuel outlet. The low-fuel switch assembly activates the LOW FUEL segment on the annunciator panel, indicating approximately five gallons of usable fuel remaining. The vent fittings each have a rollover valve to prevent fuel leakage in any attitude.

The fuel cell is secured inside an aluminum structure. The filler cap is located under a cowl door. The left and right side vent fittings are interconnected and vent through two risers within the mast fairing. A fuel valve is located on the forward side of the firewall and is controlled by a push-pull cable control at the base of the pilot's collective stick.

The engine incorporates a fuel pump assembly with an inlet filter. A differential pressure switch illuminates the FUEL FILTER warning light if the filter becomes contaminated.

A single drain allows fuel sampling from the low point in the fuel cell. The drain tube is accessible via a left side cowl door. The drain is opened by extending the plastic tube clear of the aircraft and pushing up on the drain.

Refer to § 28-50 for optional aux fuel tank installation system description.

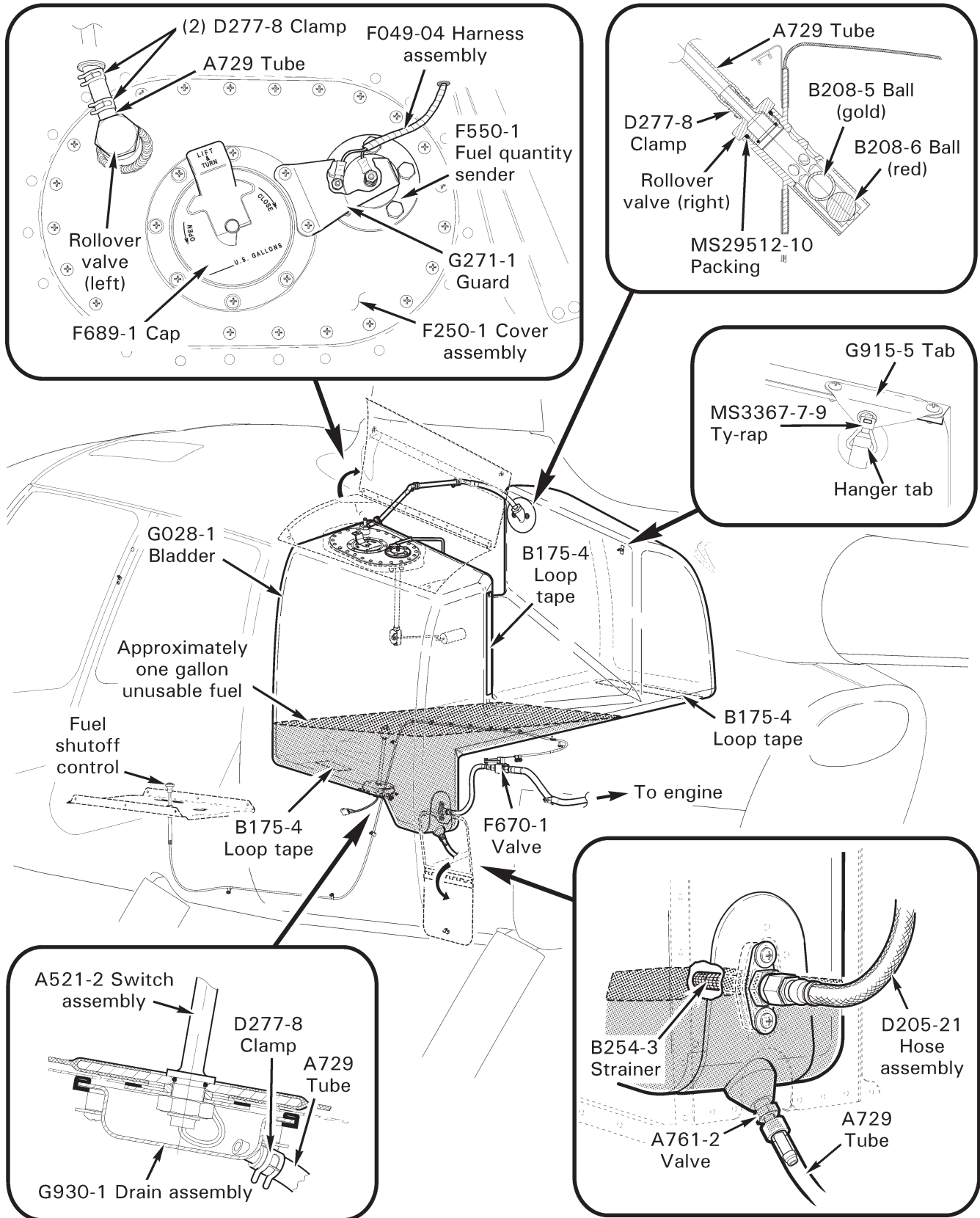


FIGURE 28-1 MAIN FUEL SYSTEM

28-10 Bladder Assembly**CAUTION**

G028-1 bladder assembly temperature should be above 65°F before removing, installing, or flexing bladder.

A. Removal

1. Defuel helicopter per § 12-42.
2. Remove tailcone cowling assembly per § 53-23.
3. Remove fuel quantity sender per § 28-21.
4. Refer to Figure 28-1. Remove D277-8 clamps or cut and discard safety wire securing A729 tube to left rollover valve and pull tube off of valve. Remove screws securing F250-1 cover assembly to G028-1 bladder assembly and F028-1 support assembly and remove cover. Remove and discard o-ring.
5. Remove D277-8 clamp or cut and discard safety wire securing A729 tube to right rollover valve and pull tube off of valve. Remove screws and washers securing valve to bladder and support. Cut and discard ty-rap securing 35486 hanger tab to G915-5 tab.
6. Remove low-fuel switch assembly per § 28-22. Tape bladder openings.
7. Disconnect D205-21 (fuel outlet) hose assembly from B254-3 strainer and cap fittings. Remove screws and washers securing strainer to bladder and support. Remove strainer and tape bladder opening.
8. Remove sump valve per § 28-12.
9. Remove hardware securing G004-4 (right side, aft fuselage) skin to cabin and remove skin. Detach bladder hook tape from support loop tape, and remove bladder through right side opening.

28-10 Bladder Assembly (continued)**B. Installation**

1. Refer to Figure 28-1. Dust exterior of G028-1 bladder assembly and F028-1 support assembly floor with talcum powder to facilitate bladder slippage along metal surface. Do not allow powder to enter bladder.
2. Note locations of hook and loop tape on bladder lower surface and support floor. Orient bladder, fold into thirds, place in center of support, and unfold into position.
3. Apply light coat A257-9 anti-seize to screw threads and install screws and washers securing right rollover valve to bladder and support; verify security. Secure A729 tube to valve using D277-8 clamp; verify security.
4. Install (new) MS3367-7-9 ty-rap securing 35486 hanger tab to G915-5 tab. Cinch ty-rap until snug without over-tightening, and trim tip flush with head.

NOTE

Verify bladder is free of wrinkles across lower surface and properly located before attaching hook and loop tape. Bladder may be pressurized with air to 1 psi max to assist installation.

CAUTION

Avoid contaminating bladder assembly interior. Cover arms with sleeves and use lint-free gloves when working inside bladder.

5. Remove tape from bladder assembly openings. Insert a clean, smooth, blunt wooden dowel through bladder's fuel port opening and press on bladder lower surface to attach hook and loop tape. Verify security.
6. Install low-fuel switch assembly per § 28-22.
7. Apply light coat A257-9 anti-seize to screw threads and install screws and washers securing bladder outlet to support. Lubricate new MS29512-06 packing using A257-6 grease and install on B254-3 strainer. Install strainer in bladder and special torque strainer per § 20-33.
8. Remove caps and connect D205-21 hose assembly to strainer. Using backup wrench, special torque hose nut per § 20-33, and torque stripe per Figure 5-1.
9. Install sump valve per § 28-12.
10. Lubricate (new) MS29513-270 packing using A257-6 grease and install packing in recess at bladder's fuel port opening. Apply light coat A257-9 anti-seize to screw threads and install screws securing F250-1 cover assembly to bladder and support; verify security. Secure A729 tube to left rollover valve using D277-8 clamps; verify security.
11. Install fuel quantity sender per § 28-21.

28-10 Bladder Assembly (continued)**B. Installation (continued)**

12. Service helicopter with minimum two gallons fuel per § 12-41. Verify no leaks, especially at bladder outlets. Install G004-4 (right side, aft fuselage) skin and install hardware securing skin to cabin; verify security.
13. Perform fuel flow check per § 28-40.
14. Install tailcone cowling assembly per § 53-23.

28-11 Rollover Valves**WARNING**

Orientation of rollover valve balls is critical to valve operation. The gold ball on top (earlier ball on top was blue) floats and seals the vent in the event of inadvertent over-filling or in-flight sloshing. The red ball on bottom presses the top ball against the vent seat if the aircraft is inverted.

A. Packing Replacement and Valve Inspection

1. Remove tailcone cowling assembly per § 53-23, as required.
2. Refer to Figure 28-1. Remove D277-8 clamp(s) or cut and discard safety wire securing A729 tube to rollover valve and pull tube off of valve.
3. Remove G254-2 fitting or G254-6 retainer. Remove and discard MS29512-10 packing (G254-2 fitting only) and A215-015 o-ring.
4. Carefully remove B208-5 and B208-6 balls using a suction cup attached to a syringe. Inspect condition of balls, valve body, and fitting or retainer. Clean parts and verify no nicks, scratches, gouges, dents, cracks, or corrosion.
5. Carefully install B208-6 ball (red, solid) on bottom and B208-5 ball (gold or blue, hollow) on top in valve body using a suction cup attached to a syringe.
6. Install new A215-015 o-ring in groove inside fitting or retainer. Lubricate new MS29512-10 packing using A257-6 grease and install over G254-2 fitting threads.
7. Install fitting or retainer and special torque per § 20-33.
8. Secure A729 tube to valve using D277-8 clamp; verify security.
9. Install tailcone cowling assembly per § 53-23, as required.

28-12 Sump Valve**A. Removal**

1. Defuel helicopter per § 12-42.
2. Refer to Figure 28-1. Cut and discard safety wire (if installed) securing A729 tube to A761-2 or 1250H (sump) valve and remove tube.
3. Remove valve from G154-1 outlet assembly; tape bladder opening.
4. Actuate and lock valve to expose stem; remove and discard o-ring.

B. Installation

1. Actuate and lock A761-2 or 1250H (sump) valve to expose stem; install (new) o-ring in stem seat.
2. Refer to Figure 28-1. Lightly coat valve threads using B270-6 sealant. Remove tape and install valve in bladder outlet. Standard torque valve per § 20-32 and torque stripe per Figure 5-1.
3. Secure A729 to valve stem. Note: safety wire is not required.
4. Service helicopter with minimum two gallons fuel per § 12-41. Verify no leaks.

28-20 Fuel Quantity28-21 Fuel Quantity Sender**CAUTION**

Avoid contaminating bladder interior. Cover arms with sleeves and use lint-free gloves when working inside bladder.

A. Removal

1. Turn battery switch off and pull out (2 amp) GAGES circuit breaker at panel.
2. a. Main tank: Refer to Figure 28-1. Remove screws securing G271-1 guard to F250 cover assembly and remove guard.
b. Aux tank: Refer to Figure 28-5. Remove screws securing G271-1 guard to G759-1 cover assembly and remove guard.

CAUTION

Rotation of fuel sender center stud or base nut is not permitted.

3. a. Main tank: Using a backup wrench, remove hardware securing F049-04 harness assembly to F550-1 fuel quantity sender.
b. Aux tank: Disconnect G768-4 harness assembly from airframe harness at connectors.
4. Remove bolts securing fuel sender to cover assembly. Carefully pull fuel sender lever through opening. Tape bladder opening.

B. Installation

1. Perform fuel sender check per Part C.
2. Turn battery switch off and pull out (2 amp) GAGES circuit breaker at panel.
3. a. Main tank: Refer to Figure 28-1. Remove tape and carefully lower F550-1 fuel quantity sender lever through F250-1 cover assembly opening.
b. Aux tank: Refer to Figure 28-5. Remove tape and carefully lower F550-2 fuel quantity sender lever through G759-1 cover assembly opening.
4. Install bolts securing fuel sender to cover assembly. Special torque bolts in criss-cross pattern per § 20-33 and torque stripe per Figure 5-1.

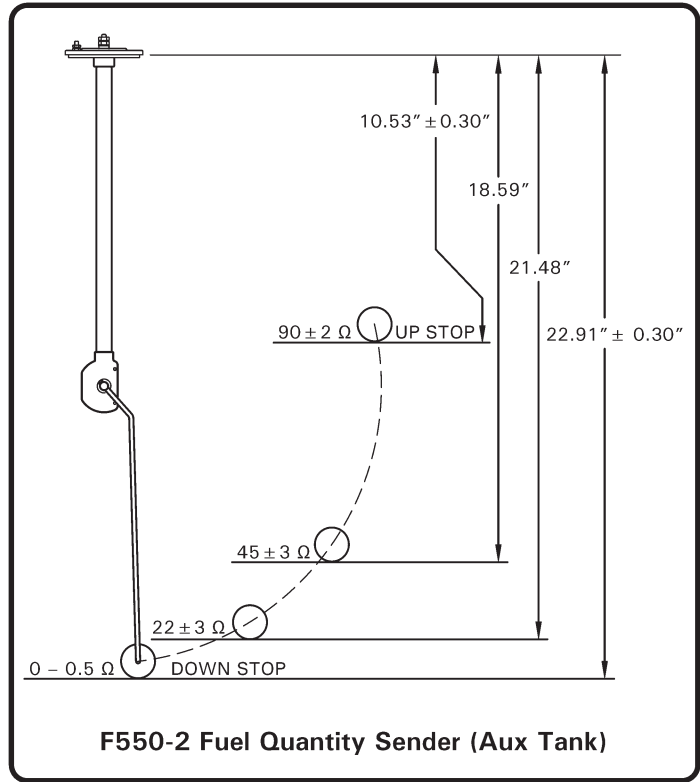
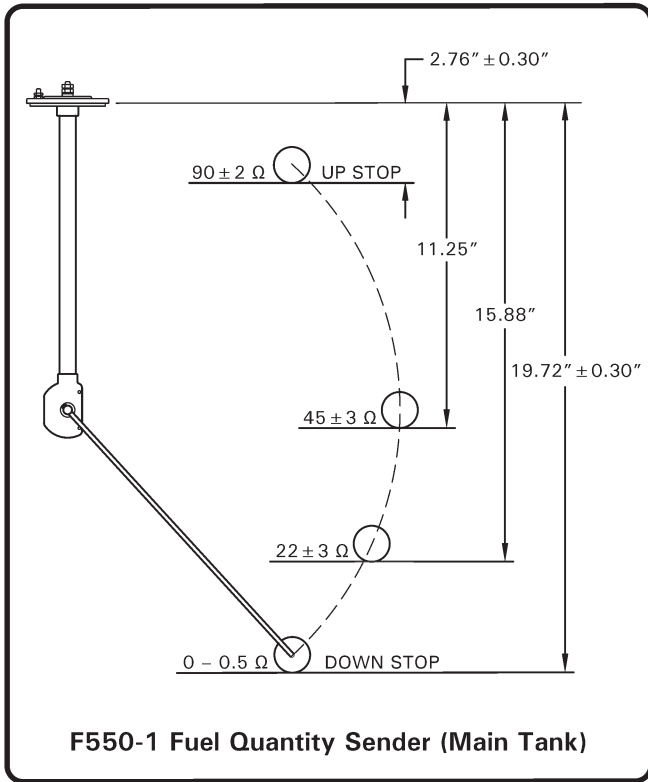


FIGURE 28-2 FUEL SENDER CHECK

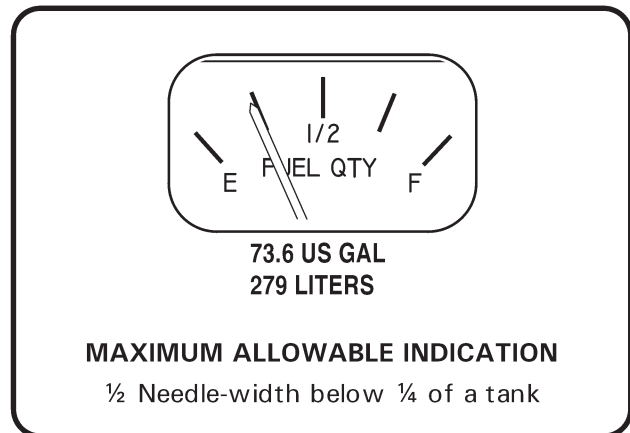
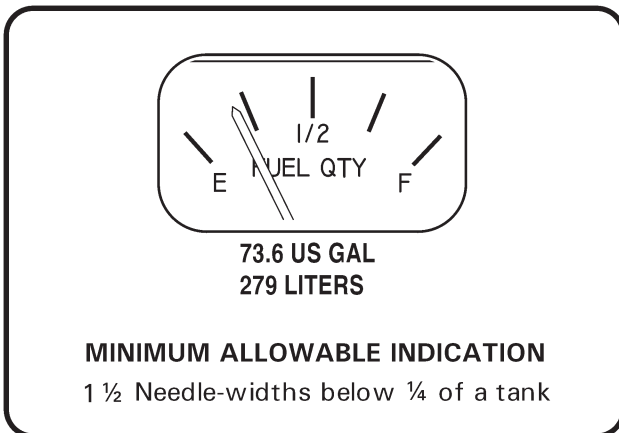


FIGURE 28-3 FUEL INDICATION CHECK

28-21 Fuel Quantity Sender (continued)**B. Installation (continued)****CAUTION**

Rotation of fuel sender center stud or base nut is not permitted.

5. a. Main tank: Using a backup wrench, install hardware securing F049-04 harness assembly to fuel sender. Special torque nuts per § 20-33, standard torque palnuts per § 20-32, and torque stripe per Figure 5-1.
- b. Aux tank: Connect G768-4 harness assembly to airframe harness at connectors. Verify security.
6. Apply light coat A257-9 anti-seize to threads and install screws securing G271-1 guard to cover assembly. Verify security.
7. Perform fuel indication check per Part D.

C. Fuel Sender Check

1. Remove fuel sender per Part A.
2. Simulate mounting position of appropriate F550 fuel quantity sender per Figure 28-2. Position float arm as shown and measure the resistance with a multimeter. Verify resistance is within tolerance at each noted height.
3. If resistance is out of tolerance at any height, bend float arm up for a fuel sender with excessive resistance, or bend float arm down for a fuel sender with too little resistance. Repeat steps until fuel sender resistance is within tolerance.
4. Install fuel sender per Part B.

D. Fuel Indication Check

1. Defuel helicopter per § 12-42.
2. Pull fuel valve into off position. Service helicopter with 19.4 gallons (main tank) or 10.1 gallons (aux tank) of fuel per § 12-41.
3. Refer to Figure 28-3. Push in (2 amp) GAGES circuit breaker at panel and turn battery switch on. (Press QUANTITY button on aux fuel control panel for aux tank quantity, displayed on fuel quantity gage.) Verify gage reads one-half needle width to one & one-half needle widths below one-quarter mark. If fuel gage indication is correct, proceed to step 5.
4. If fuel gage indication is incorrect, remove fuel quantity sender per Part A. Slightly bend sender lever up for a gage that reads too high, or down for a gage that reads too low. Install fuel quantity sender per Part B.
5. Turn battery switch off and push fuel valve into on position.

28-22 Low-Fuel Switch Assembly**CAUTION**

Avoid contaminating bladder interior. Cover arms with sleeves and use lint-free gloves when working inside bladder.

A. Removal

1. Defuel helicopter per § 12-42.
2. Open baggage compartment door. Remove G248-1 (battery compartment) cover.
3. Refer to Figure 28-1. Remove D277-6 clamp or cut and discard safety wire securing A729 tube to G930-1 drain assembly. Remove screws securing G930-4 retainer and drain assembly to G250-1 sump tray.
4. Remove fuel cap. Carefully capture A521-2 switch assembly body with clean mechanical fingers (avoid capturing float).
5. Inside baggage compartment, remove nut, washer assembly, and spacer securing A521-2 switch assembly to tray. Disconnect F049 harness assembly from switch assembly at connectors; extract switch assembly pins from housing.
6. Carefully pull switch assembly through (fuel cap) opening, avoiding fuel sender. Install fuel cap and tape bladder opening.

B. Installation

1. Install (new) MS29512-05 packing over switch assembly threads.
2. Refer to Figure 28-1. Remove fuel cap. Tape A521-1 switch assembly wiring to 4-ft length of lockwire; insert other end of wire through fuel cap opening and through switch assembly opening. Carefully grip switch assembly body with mechanical fingers and lower switch assembly to bottom of bladder. Inside baggage compartment, remove tape, guide wiring through opening, and install spacer, washer assembly, and nut securing switch assembly to G250-1 sump tray. Special torque nut per § 20-33 and torque stripe per Figure 5-1. Remove tape and lockwire. Release and remove mechanical fingers, and install fuel cap.
3. Assemble switch assembly pins in housing per Figure 98-1; connect F049 harness assembly to switch assembly at connectors. Fit wiring through gap in G930-1 drain assembly seal; install G930-4 retainer and screws securing retainer and drain assembly to tray. Verify security. Seal gap in drain assembly seal where wires pass thru using B270-5 sealant.
4. Secure A729 tube to drain assembly using D277-6 clamp; verify security.
5. Service helicopter with 7 gallons fuel per § 12-41. Verify no leaks around switch assembly. Open sump drain access door and verify no leaks from (low-fuel switch) drain tube. Perform operation check per Part C.
6. Install G248-1 (battery compartment) cover; verify security.

28-22 Low-Fuel Switch Assembly (continued)**C. Operation Check**

1. Turn battery switch on.
2. Remove fuel cap. Insert a clean, non-sparking rod through (fuel cap) opening and gently depress A521-2 switch assembly float; verify LOW FUEL annunciator segment illuminates.
3. Remove rod and install fuel cap.
4. Turn battery switch off.

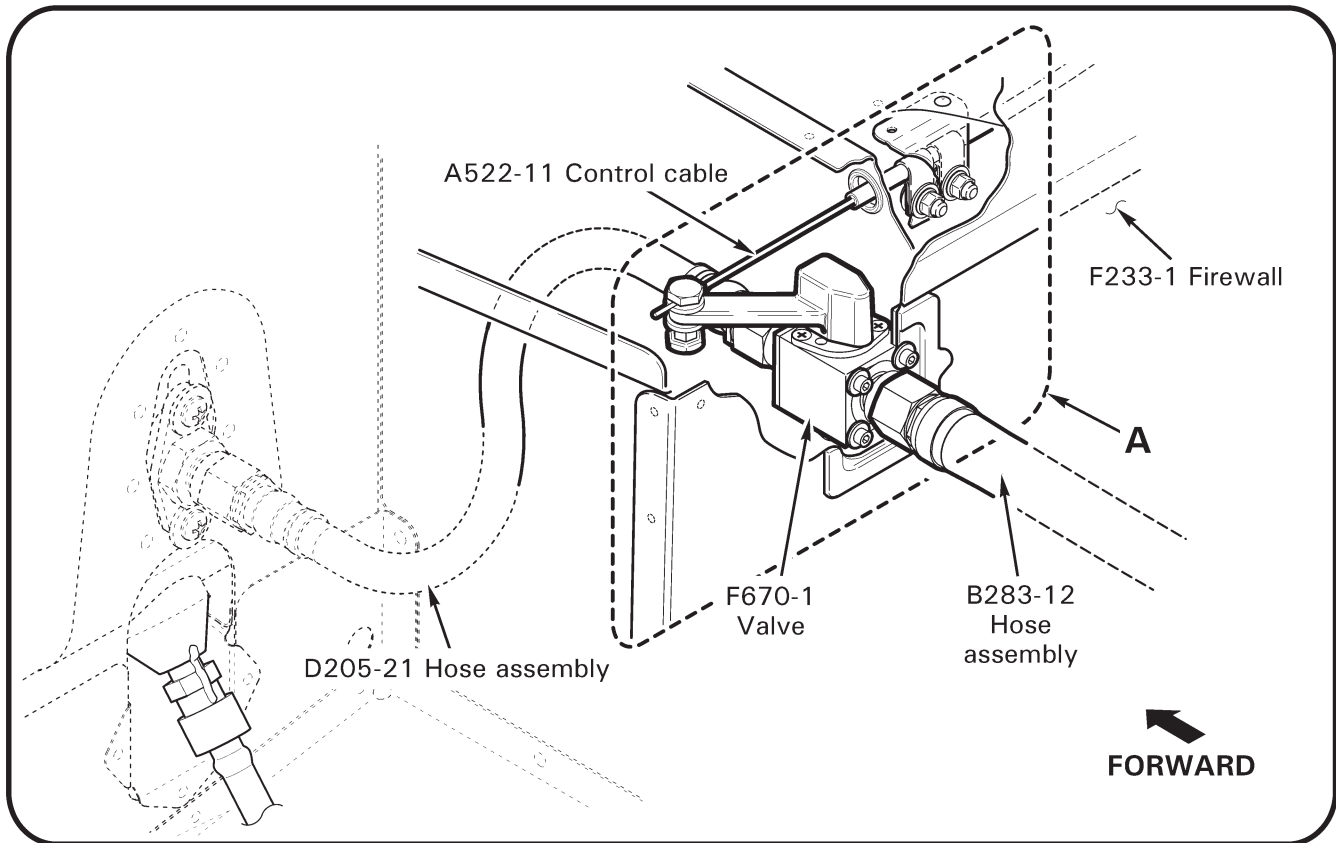
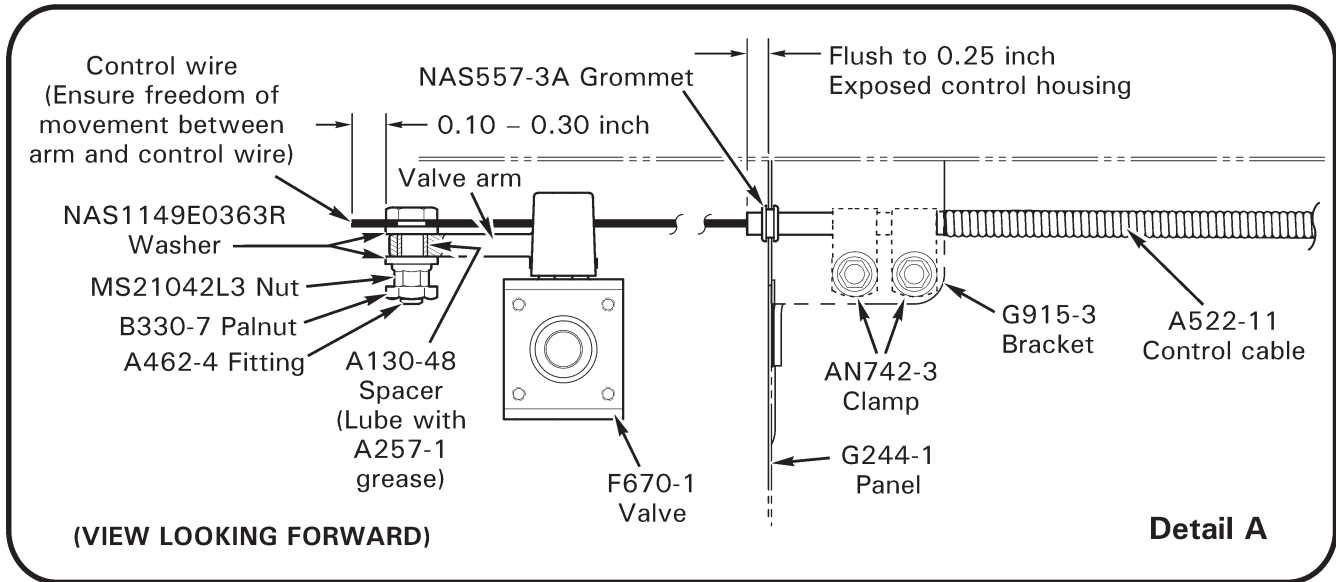


FIGURE 28-4 FUEL VALVE

28-30 Fuel Valve**A. Removal**

1. Defuel helicopter per § 12-42.
2. Refer to Figures 28-1 and 28-4. Open sump drain access door. Remove palnut and loosen nut securing A462-4 fitting and A522-11 (fuel valve) control inner wire to F670-1 fuel valve arm.
3. Disconnect D205-21 and B283-12 hose assemblies from fuel valve and cap fittings.
4. Remove screws and washers securing fuel valve to F233-1 firewall and remove fuel valve through sump drain access door.

B. Installation

1. Refer to Figures 28-1 and 28-4. Install screws and washers securing F670-1 fuel valve to F233-1 firewall. Verify security.
2. Remove caps and connect D205-21 and B283-12 hose assemblies to fuel valve. Special torque hose nuts per § 20-33 and torque stripe per Figure 5-1.
3. Perform fuel valve control rigging per § 28-31.
4. Perform fuel flow check per § 28-40.

28-31 Fuel Valve Control Rigging

1. Refer to Figures 28-1 and 28-4. Open sump drain access door. Remove palnut and loosen nut securing A462-4 fitting and A522-11 (fuel valve) control inner wire to F670-1 fuel valve arm.
2. Open baggage compartment door. As required, loosen hardware securing AN742-3 clamps and control housing to G915-3 bracket. Position end of control housing flush to 0.25 inch at or beyond edge of G244-1 panel and install fasteners. Verify security.
3. Refer to detail in Figure 76-3. Push fuel valve into on position then pull up slightly to create 0.03-0.10 clearance under control knob. Position fuel valve arm in full open detent. Verify sufficient inner wire beyond outboard edge of fitting and special torque fitting nut per § 20-33.
4. Pull fuel valve into off position and verify valve arm fully contacts OFF detent. Push fuel valve into on position and verify valve arm fully contacts ON detent, meeting clearance requirement. Reposition fitting per previous steps, as required.
5. Install fitting palnut, standard torque per § 20-32, and torque stripe per Figure 5-1. Trim control wire 0.10-0.30 inch beyond aft edge of fitting.
6. Close sump drain access door. Close and latch baggage compartment door.

28-40 Fuel Flow Check

1. Open mast fairing per § 53-22. Remove engine cowling per § 53-21.
2. Refer to Figure 28-1. Attach a temporary hose to one of the vent weldment openings. With the fuel cap installed, blow into the hose (do not use compressed air) and verify air blows out the other vent opening. If air does not blow out the other vent, remove obstruction(s) in vent line(s) or in fuel bladder and repeat check.
3. Defuel helicopter per § 12-42, then service helicopter with 19.4 gallons of fuel per § 12-41.
4. Weigh a suitable, empty container having a volume of at least one gallon. Record weight of empty container in table below.
5. Pull fuel valve into off position and disconnect B283-12 hose assembly from the engine fuel inlet fitting.
6. Using a second, suitable container, push fuel valve into on position and drain fuel into second container for a few seconds to purge system of air. Then fill the weighed container for 60 seconds. Weigh and record weight of empty container & 60 seconds of fuel flow in table below.
7. Perform the following calculation:

Combined weight of empty container & 60 seconds fuel flow: _____ lb
Subtract Weight of empty container: - _____ lb
Equals Weight of 60 seconds fuel: = _____ lb

8. Minimum fuel flow (at 19.4 gallons of fuel) is 4.75 lb/min (60 seconds). If fuel flow is less than 4.75 lb/min, remove obstruction(s) in vent line(s), fuel bladder, fuel hoses, fuel valve, or fuel strainer (inside bladder at outlet), and repeat check until fuel flow is satisfactory.
9. Close mast fairing per § 53-22. Install engine cowling per § 53-21.

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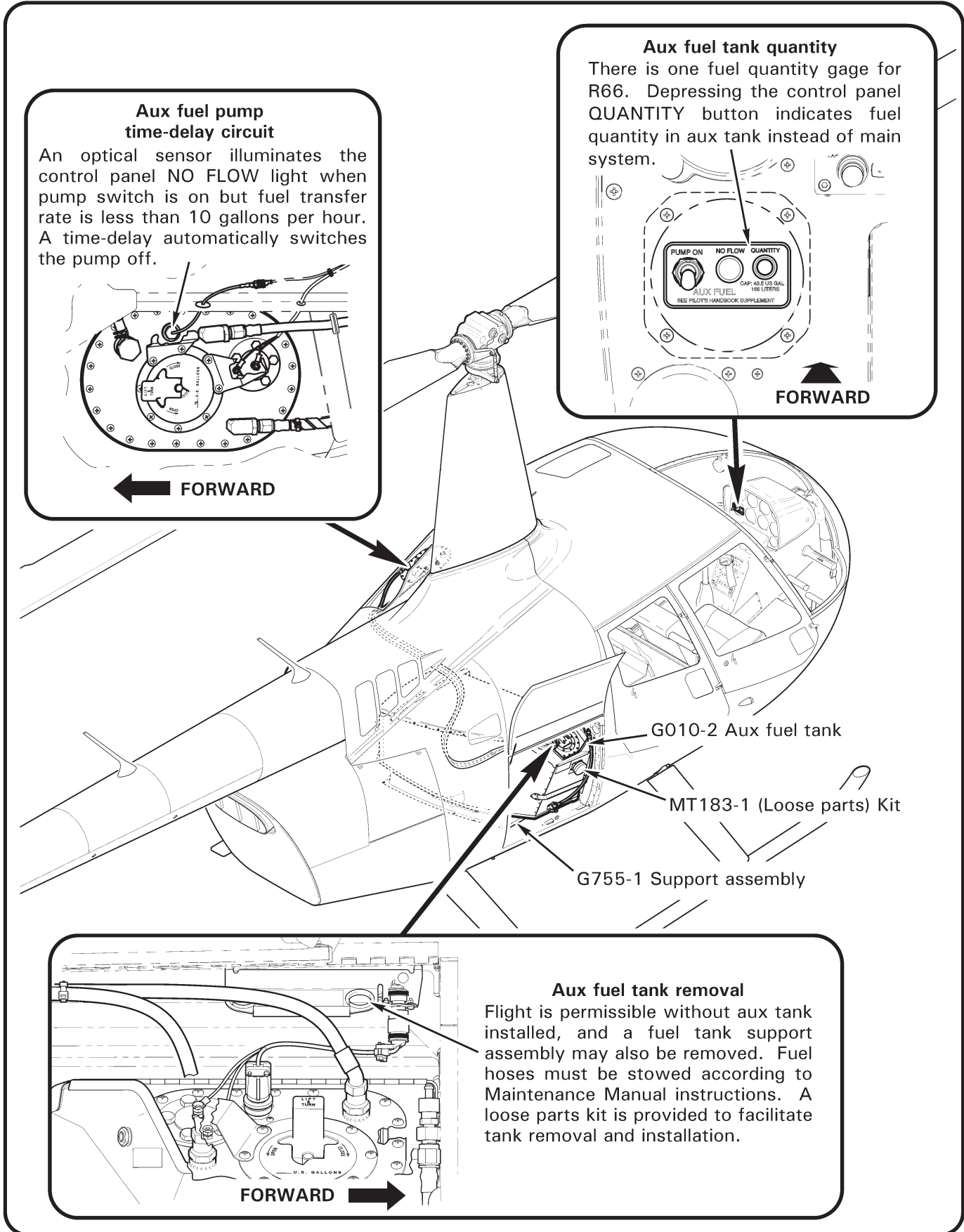


FIGURE 28-5 AUX FUEL SYSTEM

28-50 Aux Fuel System

A. Description

The auxiliary fuel system consists of a removable fuel tank located in the forward section of the baggage compartment, hoses connecting the auxiliary tank to the main fuel tank, and a small control panel on the instrument console.

The auxiliary fuel tank includes a crash-resistant bladder in an aluminum and fiberglass enclosure, an internal fuel transfer pump, a quantity sender, a filler port, and a sump drain. The filler port and sump drain are accessed by opening the baggage door. The tank mounts on a separate fiberglass tray which is also removable.

The pump transfers fuel to the main tank at approximately 40 gallons per hour (150 liters per hour). Venting is provided through a second hose connected to the main tank. If the main tank is full, any excess fuel transferred by the pump returns to the auxiliary tank through the vent hose.

A fuel flow sensor is located at the fitting where transferred auxiliary fuel enters the main tank (hose connection near the main tank filler port). The sensor illuminates the NO FLOW light on the control panel when the pump switch is on but the fuel transfer rate is less than ten gallons per hour.

The AUX FUEL control panel on the console includes a pump switch, a NO FLOW annunciator light, and a QUANTITY button. The pump switch engages the transfer pump. When the pump switch is on, the NO FLOW light indicates fuel is not transferring from auxiliary tank to the main tank, either because the auxiliary tank is empty or the pump has failed. It is normal for the light to illuminate for approximately five seconds when the pump is first switched on while the system is priming.

A time-delay circuit automatically switches the pump off if the NO FLOW light is illuminated for more than ten seconds. The light will remain on even after the time delay has removed power from the pump. Turning the pump switch off will extinguish the light.

While the QUANTITY button is depressed, the fuel quantity gage indicates fuel quantity in the auxiliary tank instead of the main tank. The NO FLOW light also comes on while the QUANTITY button is depressed to provide a test of the circuit and to confirm that the auxiliary tank quantity is being displayed on the fuel gage.

The auxiliary fuel tank has two drains through the belly of the helicopter. Any fuel spilled at the filler port is collected by the surrounding scupper and drains through a hose into the outboard belly drain location. The tank support tray has a drain at the inboard drain location. Fuel leaking from the inboard drain indicates a possible leak in the fuel bladder.

A sump drain hose stowed vertically along the right side of the tank allows preflight fuel sampling from the low point of the tank. To sample fuel, extend hose away from the helicopter and push in on the valve. The valve may be locked open to allow draining of the tank.

28-50 Aux Fuel System (continued)

A. Description (continued)

Operationally, the fuel transfer pump may be switched on any time at the pilot’s discretion. If the main tank is full, any excess fuel transferred from the auxiliary tank will return through the vent/return hose. Note that fuel in the auxiliary tank is not considered usable for flight planning purposes because the fuel transfer system has no redundancy in case of pump failure.

The auxiliary fuel tank may be removed to provide additional baggage space. The separate support tray may also be removed. A small container which may be clipped to the outboard side of the tank is provided for stowing installation hardware.

28-51 Aux Fuel System – Tank Assembly

A. Removal

1. Defuel aux fuel tank per § 12-42.
2. Turn battery switch off and pull out (5 amp) AUX FUEL PUMP circuit breaker at panel. Open main baggage compartment door.
3. Disconnect G768-4 harness assembly from airframe harness at connectors.
4. Using a back-up wrench, disconnect D205-36 (vent/return) and D205-36 (pump) hose assemblies from aux tank fittings in G759-1 cover assembly. Install AN820-6 or AN929-6 caps (included in MT183-1 kit) on aux tank fittings. Install AN806-6D plugs (included in MT183-1 kit) on hose fittings, special torque plugs to 120 in.-lb, and stow hoses in G769-1 bracket assembly.
5. Remove (8) B526-6 screws securing G010-2 aux tank assembly to G259-1 bulkhead and G251-1 panel. Remove tank assembly using straps.

NOTE

Flight is permissible without G010-2 aux tank assembly installed when (2) AN806-6D plugs installed on D205-36 hose assemblies and hoses are stowed in G769-1 bracket assembly (see above instructions).

6. As required, revise Weight and Balance Record in R66 Pilot’s Operating Handbook (POH) Section 6 to reflect aux tank assembly removal using the following data:

Subtract:

Item	Weight	Long. Arm	Long. Moment	Lat. Arm	Lat. Moment
Aux Tank Assy	-30.0 lb	101.0 in.	-3030 in.-lb	1.5 in.	-45.0 in.-lb

28-51 Aux Fuel System – Tank Assembly (continued)

B. Installation

1. Turn battery switch off and pull out (5 amp) AUX FUEL PUMP circuit breaker at panel. Open main baggage compartment door.
2. Position G010-2 aux tank assembly on G755-1 support assembly (tank pin will align with relief in support); route drain tube into floor weldment. Install (8) B526-6 screws securing aux tank to G259-1 bulkhead and G251-1 panel. Verify security.
3. Remove AN820-6 or AN929-6 caps from aux tank fittings in G759-1 cover assembly, and AN806-6D plugs from D205-36 (vent/return) and D205-36 (pump) hose assemblies. Stow caps and plugs in MT183-1 kit’s jar assembly.
4. Connect hose assemblies to aux tank fittings. Using a back-up wrench on fittings, special torque hose nuts per § 20-33, & torque stripe per Figure 5-1. Verify security.
5. Connect G768-4 harness assembly to airframe harness at connectors. Verify security.
6. As required, revise Weight and Balance Record in R66 Pilot’s Operating Handbook (POH) Section 6 to reflect aux tank assembly installation using the following data:

Add:

Item	Weight	Long. Arm	Long. Moment	Lat. Arm	Lat. Moment
Aux Tank Assy	30.0 lb	101.0 in.	3030 in.-lb	1.5 in.	45.0 in.-lb

7. Fuel as required per § 12-41.
8. Turn battery switch on and push in (5 amp) AUX FUEL PUMP circuit breaker at panel. Turn pump switch on and inspect vent/return, pump, and sump drain hose assemblies where they connect to tank. Verify no fuel leaks.
9. Turn pump and battery switches off. Close and secure main baggage compartment door.

28-52 Aux Fuel System – Support Assembly

A. Removal

1. Remove aux fuel tank per § 28-51.
2. Remove (6) B526-6 screws securing G755-1 support assembly to bulkhead and remove (7) B536-8 screws securing support assembly to floor. Carefully remove support.

NOTE

Flight is permissible without G010-2 aux tank assembly installed when (2) AN806-6D plugs installed on D205-36 hose assemblies and hoses are stowed in G769-1 bracket assembly (refer to § 28-51). G755-1 support assembly installation is optional when tank is removed.

3. As required, revise Weight and Balance Record in R66 Pilot’s Operating Handbook (POH) Section 6 to reflect support assembly removal using the following data:

Subtract:

Item	Weight	Long. Arm	Long. Moment	Lat. Arm	Lat. Moment
Support Assy	-3.0 lb	101.0 in.	-303 in.-lb	-1.2 in.	54.0 in.-lb

B. Installation

1. Verify baggage compartment floor where G755-1 support assembly is to be installed is free of debris. Position support assembly on floor.
2. Install (6) B526-6 screws securing support assembly to bulkhead and install (7) B536-8 screws securing support assembly to floor. Verify security.
3. As required, revise Weight and Balance Record in R66 Pilot’s Operating Handbook (POH) Section 6 to reflect support assembly installation using the following data:

Add:

Item	Weight	Long. Arm	Long. Moment	Lat. Arm	Lat. Moment
Support Assy	3.0 lb	101.0 in.	303 in.-lb	-1.2 in.	-54.0 in.-lb

4. Install aux fuel tank per § 28-51 or refer to NOTE in Part A.

28-53 Aux Fuel System – Bladder**CAUTION**

Avoid contaminating bladder interior. Cover arms with sleeves and use lint-free gloves when working inside bladder.

A. Removal

1. Remove aux fuel tank per § 28-51.
2. Cut ty-rap securing D205-35 (drain) hose assembly to G762-11 scupper. Using a back-up wrench, disconnect hose from drain fitting, release hose at tab, and remove hose. Cap and plug fittings. Remove screws securing G756-1 bladder and scupper to G754-1 enclosure assembly.
3. Remove fuel quantity sender per § 28-21.
4. Remove screws securing G759-1 cover assembly and bladder to enclosure. Lift cover and inside bladder, release clamp securing drain tube to fitting. Inside bladder, remove screws securing G764-1 drain weldment and G765-1 pump assembly to bladder. Remove weldment, pump, and tubes with connected cover assembly.
5. Remove screws securing G758-1 cover to enclosure assembly. Remove G762-12 hinge. Guide cover clear of strap and remove cover.
6. Detach bladder hook tape from enclosure loop tape and remove bladder. Tape bladder openings.

B. Installation

1. Fold forward, aft, and left sides of G756-1 bladder inward; align bladder's G759-4 ring assembly with G754-1 enclosure assembly's servicing panel to clear strap, and press bottom of bladder to enclosure's tray. Unfold bladder, and align bladder and enclosure hook and loop tape.

CAUTION

Verify bladder is free of wrinkles across lower surface and properly located before attaching hook and loop tape. Bladder may be pressurized with air to 1 psi max to assist installation.

2. Remove tape protecting bladder openings. Insert a clean, smooth, blunt wooden dowel through bladder service opening and press on bladder lower surface to attach hook and loop tape. Verify security.
3. Guide G758-1 cover clear of strap and install screws securing cover to enclosure. Install G762-12 hinge. Verify security.

28-53 Aux Fuel System – Bladder (continued)**B. Installation (continued)**

4. Position G765-1 pump assembly, G764-1 drain weldment, and tubes (with connected G759-1 cover assembly) inside bladder and install screws. Verify security.
5. Inside bladder, install clamp securing drain tube to fitting. Verify security.
6. Install screws securing bladder and G762-11 scupper to enclosure at drain. Verify security.
7. Connect D205-35 (drain) hose assembly to drain fitting, aligning hose $8.5^{\circ} \pm 5.0^{\circ}$ from parallel with edge of enclosure's G757-1 tray. Using a back-up wrench, special torque hose nut per § 20-33, and torque stripe per Figure 5-1. Secure hose near drain valve at tab. Install MS336-7-9 ty-rap securing scupper to hose. Cinch ty-rap until snug without overtightening, and trim tip flush with head.
8. Apply light coat A257-9 anti-seize to screw threads and install screws securing G759-1 cover and bladder to enclosure. Verify security.
9. Install fuel quantity sender per § 28-21.
10. Install aux fuel tank per § 28-51.

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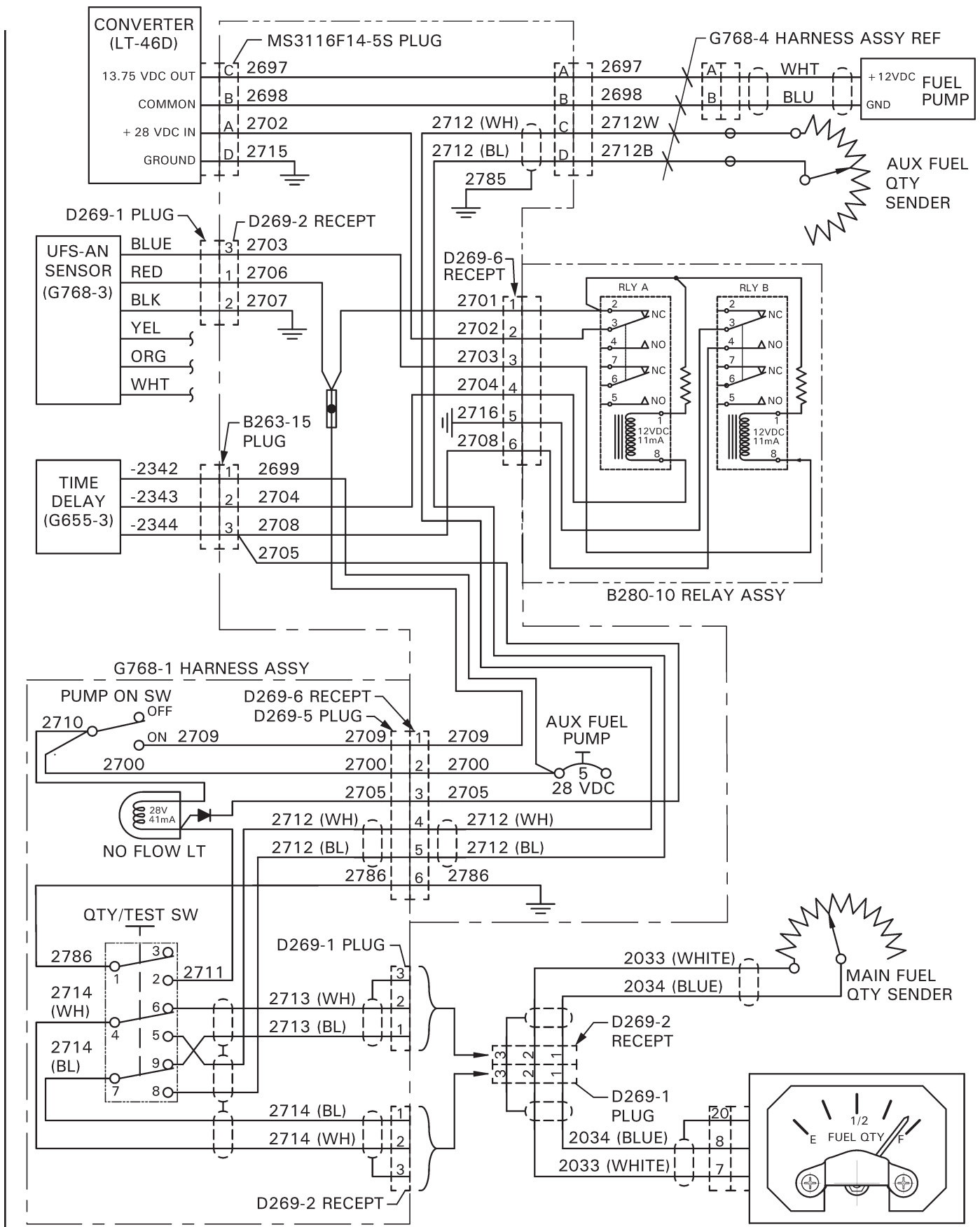


FIGURE 28-5 AUX FUEL SYSTEM ELECTRICAL SCHEMATIC

28-54 Aux Fuel System – Fuel Quantity Sender

Refer to § 28-21 for fuel quantity sender maintenance instructions.

28-55 Aux Fuel System – Pump Assembly**CAUTION**

Avoid contaminating bladder interior. Cover arms with sleeves and use lint-free gloves when working inside bladder.

A. Removal

1. Defuel aux fuel tank per § 12-42.
2. Turn battery switch off and pull out (5 amp) AUX FUEL PUMP circuit breaker at panel. Open main baggage compartment door.
3. Disconnect G768-4 harness assembly from G768-1 harness assembly at connectors.
4. Using a back-up wrench, disconnect D205-36 (vent/return) and D205-36 (supply) hose assemblies from aux tank fittings in G759-1 cover assembly. Temporarily cap and plug fittings (AN820-6 and AN929-6 caps, and AN806-6D plugs are included in MT183-1 kit).
5. Remove screws securing G759-1 cover assembly and G756-1 bladder to G754-1 enclosure assembly. Lift cover and inside bladder, release clamp securing drain tube to fitting. Inside bladder, remove screws securing G764-1 drain weldment and G765-1 pump assembly to bladder. Remove weldment, pump, and tubes with connected cover assembly. Tape opening to prevent contamination of bladder interior.
6. Remove weldment. Unwind B161-108 spirap, removing spirap from pump wiring. Remove two D277-8 clamps securing A729-74 tube to pump and cover and remove tube. Unplug pump from cover at connectors.

28-55 Aux Fuel System – Pump Assembly (continued)**B. Installation**

1. Turn battery switch off and pull out (5 amp) AUX FUEL PUMP circuit breaker at panel. Open main baggage compartment door.
2. Position G010-2 aux tank assembly on G755-1 support assembly (tank pin will align with relief in support); route drain tube into floor weldment. Install (8) B526-6 screws securing aux tank to G259-1 bulkhead and G251-1 panel. Verify security.
3. Remove AN820-6 or AN929-6 caps from aux tank fittings in G759-1 cover assembly, and AN806-6D plugs from D205-36 (vent/return) and D205-36 (supply) hose assemblies. Stow caps and plugs in MT183-1 kit's jar assembly.
4. Connect hose assemblies to aux tank fittings. Using a back-up wrench on fittings, special torque hose nuts per § 20-33, and torque stripe per Figure 5-1. Verify security.
5. Connect G768-4 harness assembly to G768-1 harness assembly at connectors. Verify security.