

### 28-26-04 Fuel Boost Pump - Removal / Installation

#### General

The fuel boost pumps are on the rear spar in the left and right main wheel wells. The main boost pumps are inboard and the alternate boost pumps are outboard.

This maintenance procedure is related to a Critical Design Configuration Control Limitation (CDCCL). The intended goal of the CDCCL is to prevent the development of ignition sources in or adjacent to the fuel tank. For more information on the CDCCL, refer to [Airworthiness Limitations, 05-10-10](#).

Record the hardware type, quantity and location during removal. Attach a removal tag to the component and keep the hardware for installation, unless told to discard. The installation hardware must be the equivalent of Gulfstream Engineering approved hardware. Refer to the appropriate Illustrated Parts Catalog figure for details. Use Gulfstream Engineering approved procedures to install the hardware. Refer to the Wiring Diagram Manual for procedures to address any wiring discrepancies..

#### Support Equipment

Nomenclature	Part Number	Quantity
Circuit breaker safety clips	GSE2400984 or equivalent	As necessary
Container, approved for fuel	Standard	1
Digital low resistance ohmmeter	GSE2401147 or equivalent	1
Protective caps and plugs	Standard	As necessary
Torque wrench, 0 - 75 inch-pounds (0 - 8 Nm)	GSE5101145 or equivalent	1

#### Material Required

Nomenclature	Part Number	Quantity
Form-A-Funnel	TT-103 (NOTE: The Form-A-Funnel flexible draining tool is available from Form-A-Funnel, Roscoe, IL 1-815-520-1272.)	As necessary
Lubricant	VV-P-236	As necessary
O-ring	M25988/1-142	2
O-ring	M25988/1-143	1
O-ring	M25988/1-152	2
Sealant	AMS-S-8802, Type II or equivalent	As necessary

#### Reference Materials

[Airworthiness Limitations, 05-10-10](#)

[Refueling Procedure - Refuel, 12-13-01](#)

[Safe Ground Maintenance - General Maintenance, 20-00-00](#)

[Electrical Power Application - General Maintenance, 20-20-01](#)

[SSPC - General Maintenance, 20-20-02](#)

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## MAINTENANCE MANUAL

Electrical Bonding - General Maintenance, 20-24-01

Sealing Standard Practices - General Maintenance, 20-42-01

Fuel Boost Pump - Prime, 28-26-04

Landing Gear Door - Normal Operation, 32-00-04

### Fuel Boost Pump – Preparation

#### Preliminary Requirements

Do [Safe Ground Maintenance - General Maintenance, 20-00-00](#).

#### Safety Conditions

##### **WARNING**

**MAKE SURE THAT ALL LANDING GEAR AND LANDING GEAR DOOR SAFETY DEVICES ARE INSTALLED BEFORE WORK IS DONE IN A WHEEL WELL OR IT CAN RESULT IN SERIOUS INJURY OR DEATH.**

##### **NOTE**

For information on the operation of the SSPCs, refer to [SSPC - General Maintenance, 20-20-02](#)

#### Procedure

- 1 Make sure that the intertank valve is closed. See Figure 1. Fuel Boost Pump.

##### **WARNING**

**MAKE SURE THAT ALL PERSONNEL AND EQUIPMENT ARE CLEAR OF THE FLIGHT CONTROL SURFACES BEFORE ELECTRICAL POWER IS APPLIED OR IT CAN RESULT IN SERIOUS INJURY / DEATH TO PERSONNEL OR DAMAGE TO THE AIRCRAFT. WHEN ELECTRICAL POWER IS APPLIED TO THE AIRCRAFT, IT CAN CAUSE THE FLIGHT CONTROL SURFACES TO MOVE.**

- 2 Apply electrical power to the aircraft. Refer to [Electrical Power Application - General Maintenance, 20-20-01](#).
- 3 Pull, tag and install the safety clips / collars on the circuit breakers and SSPCs:

NOMENCLATURE	PANEL	LOCATION
L MAIN FUEL PUMP	Left PDB	LEFT ESS DC
L FIRE BOT L ENG	TSC	2609

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NOMENCLATURE	PANEL	LOCATION
L FIRE BOT R ENG	TSC	2610
R FIRE BOT L ENG	TSC	2611
R FIRE BOT R ENG	TSC	2612
R MAIN FUEL PUMP	Right PDB	RIGHT ESS DC
ALT FUEL PUMP L	TSC	2808
ALT FUEL PUMP R	TSC	2809

- 4 Open the applicable main landing gear door(s). Refer to [Landing Gear Door - Normal Operation, 32-00-04](#).

### **CAUTION**

DO NOT TURN THE FIRE PULL HANDLES OR ACCIDENTAL DISCHARGE OF FIRE BOTTLE MAY OCCUR.

- 5 On the forward pedestal, push down on the manual release button for the applicable fire pull handle and pull the handle up. Do not turn the fire pull handle.
- 6 Pull and install the collars on the SSPCs:

NOMENCLATURE	PANEL	LOCATION
FUEL S/O VLV L	TSC	2819
FUEL S/O VLV R	TSC	2812

- 7 Push the fire pull handle down to stow it. Do not turn the fire pull handle.
- 8 Carefully pull up on the fire pull handle to make sure it is stowed.
- 9 Remove electrical power from the aircraft. Refer to [Electrical Power Application - General Maintenance, 20-20-01](#).

### **Requirements After Job Completion**

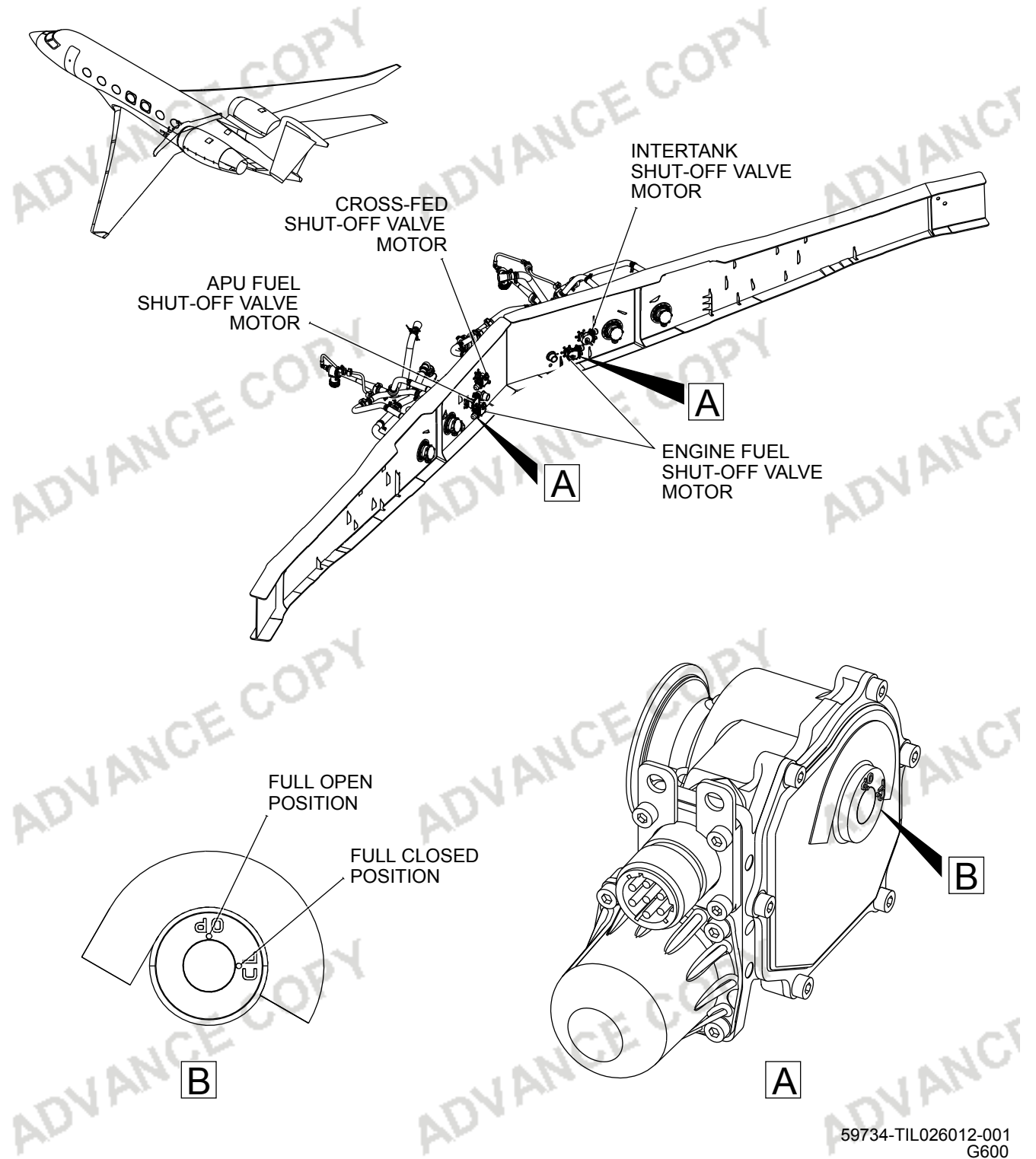
Inspect the work area for foreign objects and damage.

Do [Fuel Boost Pump – Removal](#).

Record all maintenance in compliance with the National Aviation Authority Regulations.

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## MAINTENANCE MANUAL



Fuel Boost Pump  
Figure 1

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### Fuel Boost Pump – Removal

#### Preliminary Requirements

Do [Safe Ground Maintenance - General Maintenance, 20-00-00](#).

Do [Fuel Boost Pump – Preparation](#).

#### Safety Conditions

##### **WARNING**

THIS MAINTENANCE PROCEDURE IS RELATED TO A CRITICAL DESIGN CONFIGURATION CONTROL LIMITATION (CDCCL) INTENDED TO PREVENT DEVELOPMENT OF IGNITION SOURCES IN OR ADJACENT TO THE FUEL TANK. DO THIS MAINTENANCE PROCEDURE CORRECTLY AND MAKE SURE THAT APPROVED PARTS AND MATERIALS ARE USED. IF THIS IS NOT DONE, IT CAN RESULT IN A FAILURE, MALFUNCTION OR DEFECT THAT ENDANGERS THE SAFE OPERATION OF THE AIRPLANE.

MAKE SURE THAT ALL LANDING GEAR AND LANDING GEAR DOOR SAFETY DEVICES ARE INSTALLED BEFORE WORK IS DONE IN A WHEEL WELL OR IT CAN RESULT IN SERIOUS INJURY OR DEATH.

SOME OF THE NECESSARY MATERIALS HAVE SAFETY, HEALTH AND ENVIRONMENTAL REQUIREMENTS. READ THE MATERIAL SAFETY DATA SHEETS FOR ALL MATERIALS. THE USER HAS THE RESPONSIBILITY FOR PROTECTION FROM INJURY AND EXPOSURE TO MATERIALS. THE USER HAS THE RESPONSIBILITY FOR COMPLIANCE WITH NATIONAL, FEDERAL, STATE AND LOCAL REQUIREMENTS FOR THE MATERIALS THAT ARE SPECIFIED.

TO PREVENT A FIRE HAZARD FROM A FUEL SPILL, MAKE SURE THAT AN APPROVED CONTAINER IS AVAILABLE TO CATCH SPILLED FUEL BEFORE ALL FASTENERS ARE REMOVED.

DO NOT ALLOW THE DRAINED FUEL TO STAY ON THE SKIN. WASH THE FUEL FROM THE SKIN WITH WATER. THE FUEL IS POISONOUS AND CAN BE ABSORBED INTO THE BODY.

#### Procedure

##### **CAUTION**

PUT A TAG ON ALL ELECTRICAL CONNECTORS BEFORE THEY ARE DISCONNECTED TO PREVENT DAMAGE TO THE SYSTEM.

##### **NOTE**

Use the numbers in parentheses ( ) in connection with Figure 2. Fuel Boost Pump.

- 1 Disconnect the electrical connector (5) from the pump (4).

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- 2 Remove the sealant from the bolts (1).
- 3 If necessary, position the Form-A-Funnel flexible draining tool below the pump (4).

### **NOTE**

The Form-A-Funnel flexible draining tool is used to block the wind from the fuel being drained and to prevent the fuel from draining into the WTBF.

- 4 Remove the inner row of bolts (1) and washers (2) that attach the pump (4) to the canister (6).
- 5 Use two of the bolts (1) and put into the threaded hole locators (3) of the pump (4).
- 6 Alternately, tighten the bolts in 1/2 turn increments until the pump (4) can be pulled straight out of the canister (6).

### **CAUTION**

BEFORE THE FUEL BOOST PUMP IS REMOVED, PLACE THE CONTAINER UNDER THE BOOST PUMP TO CATCH THE SPILLED FUEL. THE FUEL BOOST PUMP AND CANISTER CONTAIN APPROXIMATELY 1/2 - 1 CUP OF FUEL. WHEN THE PUMP IS INITIALLY REMOVED THE FUEL CAN SPILL INTO THE REAR BEAM AREA AND LEAK INTO THE WING TO BODY FAIRING AREA.

- 7 Position the container under the pump and allow the fuel to drain from the pump.
- 8 Remove the O-rings (7) from the pump.
- 9 Discard the O-rings.

### **CAUTION**

INSTALL THE CORRECT PROTECTIVE CAPS AND PLUGS ON THE ELECTRICAL CONNECTORS, LINES, TUBES, PORTS AND FITTINGS TO PREVENT EQUIPMENT DAMAGE.

- 10 Install protective caps and plugs on all open the ports and electrical connectors.
- 11 Remove the two bolts (1) from the pump (4) that were used in Step 5.

## **Requirements After Job Completion**

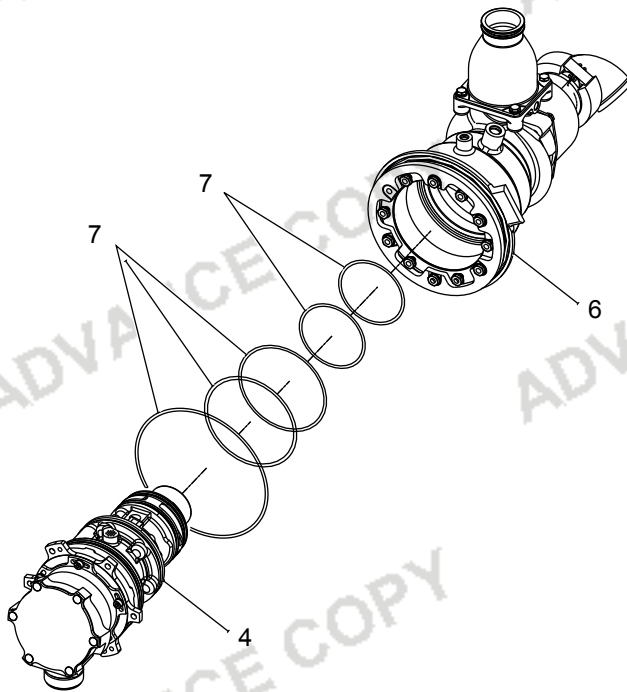
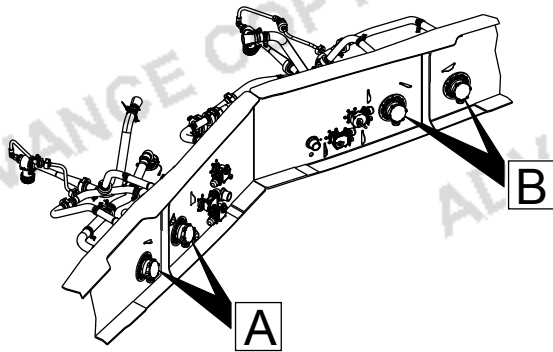
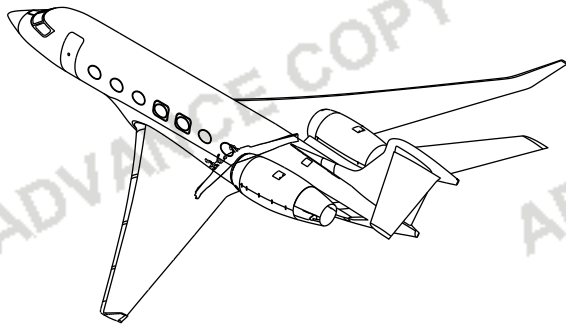
Inspect the work area for foreign objects and damage.

Do [Fuel Boost Pump – Installation](#).

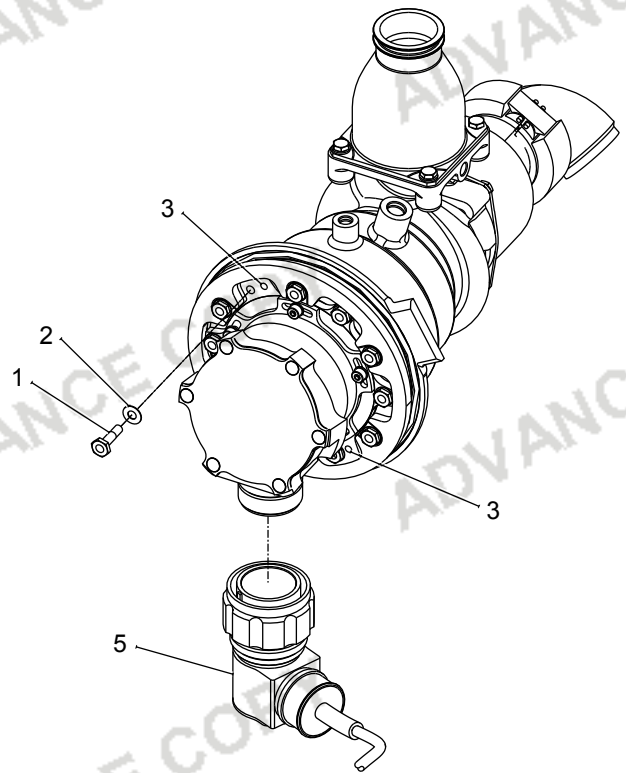
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**B**



**A**

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Fuel Boost Pump  
Figure 2

### Fuel Boost Pump – Installation

#### Preliminary Requirements

Do [Safe Ground Maintenance - General Maintenance, 20-00-00](#).

Do [Fuel Boost Pump – Preparation](#).

#### Safety Conditions

##### **WARNING**

THIS MAINTENANCE PROCEDURE IS RELATED TO A CRITICAL DESIGN CONFIGURATION CONTROL LIMITATION (CDCCL) INTENDED TO PREVENT DEVELOPMENT OF IGNITION SOURCES IN OR ADJACENT TO THE FUEL TANK. DO THIS MAINTENANCE PROCEDURE CORRECTLY AND MAKE SURE THAT APPROVED PARTS AND MATERIALS ARE USED. IF THIS IS NOT DONE, IT CAN RESULT IN A FAILURE, MALFUNCTION OR DEFECT THAT ENDANGERS THE SAFE OPERATION OF THE AIRPLANE.

MAKE SURE THAT ALL LANDING GEAR AND LANDING GEAR DOOR SAFETY DEVICES ARE INSTALLED BEFORE WORK IS DONE IN A WHEEL WELL OR IT CAN RESULT IN SERIOUS INJURY OR DEATH.

SOME OF THE NECESSARY MATERIALS HAVE SAFETY, HEALTH AND ENVIRONMENTAL REQUIREMENTS. READ THE MATERIAL SAFETY DATA SHEETS FOR ALL MATERIALS. THE USER HAS THE RESPONSIBILITY FOR PROTECTION FROM INJURY AND EXPOSURE TO MATERIALS. THE USER HAS THE RESPONSIBILITY FOR COMPLIANCE WITH NATIONAL, FEDERAL, STATE AND LOCAL REQUIREMENTS FOR THE MATERIALS THAT ARE SPECIFIED.

TO PREVENT A FIRE HAZARD FROM A FUEL SPILL, MAKE SURE AN APPROVED CONTAINER IS AVAILABLE TO CATCH SPILLED FUEL.

DO NOT ALLOW DRAINED FUEL TO STAY ON THE SKIN. WASH THE FUEL FROM THE SKIN WITH WATER. THE FUEL IS POISONOUS AND MAY BE ABSORBED INTO THE BODY.

#### Procedure

##### **NOTE**

For the initial installation of the fuel pump, make sure that the pump liquid ring has been primed per the manufacturers instructions before installation. Failure to prime the liquid ring can result in the pump not priming and producing pressure.

Use the numbers in parentheses ( ) in connection with Figure 3. Fuel Boost Pump.

- 1 Apply a thin layer of lubricant to the O-rings (6).
- 2 Remove the protective caps and plugs from the ports.
- 3 Install the O-rings (6) on the pump (3).

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### **CAUTION**

ONCE THE FUEL BOOST PUMP HAS BEEN INSERTED INTO THE FUEL BOOST PUMP CANISTER, THE CANISTER WILL BE FILLED WITH FUEL. IF IT IS NECESSARY TO PULL THE FUEL BOOST PUMP OUT OF THE FUEL BOOST PUMP CANISTER ONCE IT HAS BEEN INSERTED, PLACE A CONTAINER UNDER THE FUEL BOOST PUMP TO CATCH SPILLED FUEL.

THE BURNISHED MATING SURFACES ON THE PUMP AND CANISTER MUST BE CLEAR OF ALL CONTAMINANTS OR LUBRICANTS SO THAT A ROBUST BONDING SURFACE IS MAINTAINED.

- 4 Install the pump (3) fully into the canister (4). The bolt hole pattern is not symmetrical. Make sure that the proper orientation of the pump with the canister before the pump is inserted into the canister.

### **NOTE**

When the pump is pressed into the canister, there will be some resistance on the pump.

- 5 Hold the pump firmly and attach the pump (3) with the bolts (1) and washers (2).
- 6 Torque the bolts (1) to 40 - 50 inch-pounds (4.5 - 5.6 Nm).  
TECH \_\_\_\_\_ INSP \_\_\_\_\_
- 7 Use the digital low resistance ohmmeter to do the test for electrical bond across the pump (3) and canister (4). Make sure that the resistance is no more than 0.0025 ohms. Refer to [Electrical Bonding - General Maintenance, 20-24-01](#).
- 8 Fillet seal the attachment bolts (1) and washers (2) with sealant. Refer to [Sealing Standard Practices - General Maintenance, 20-42-01](#).
- 9 Remove the protective caps and plugs from the electrical connectors.
- 10 Connect the electrical connector (5) to the pump (3).
- 11 If necessary, remove the Form-A-Funnel flexible draining tool from the aircraft.

### **Requirements After Job Completion**

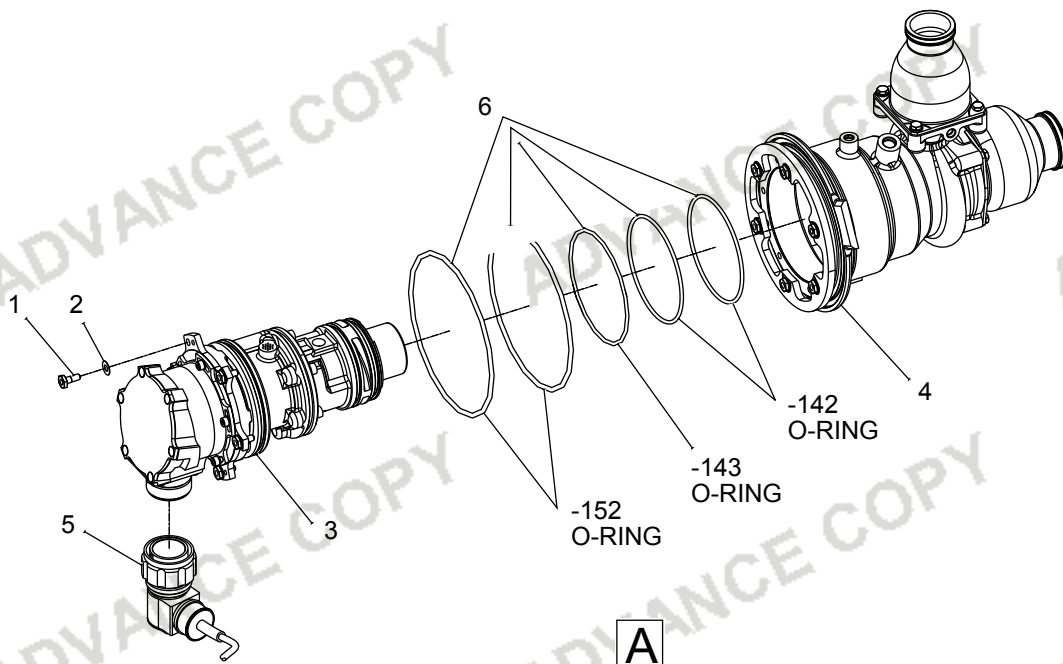
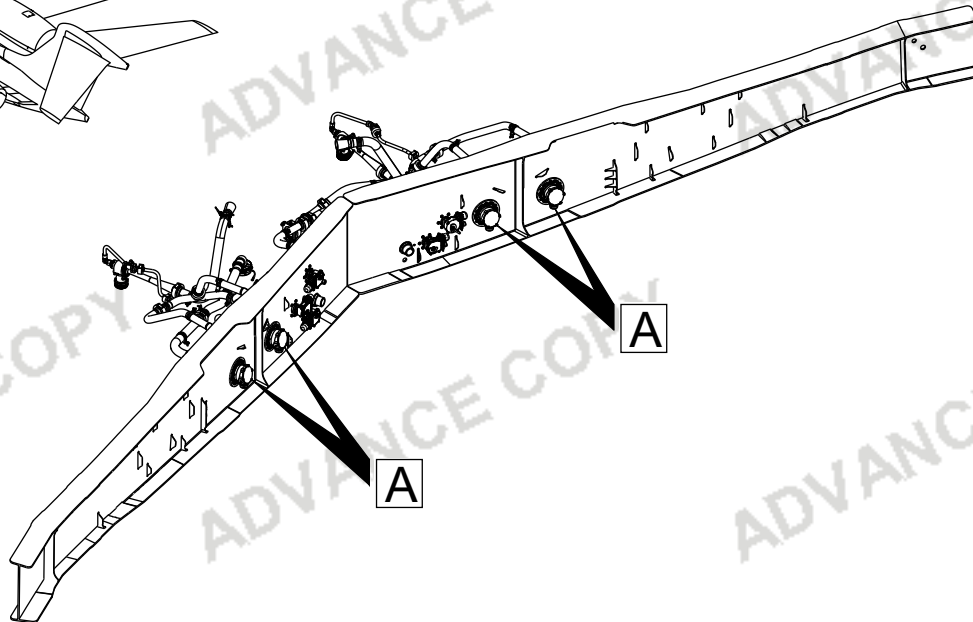
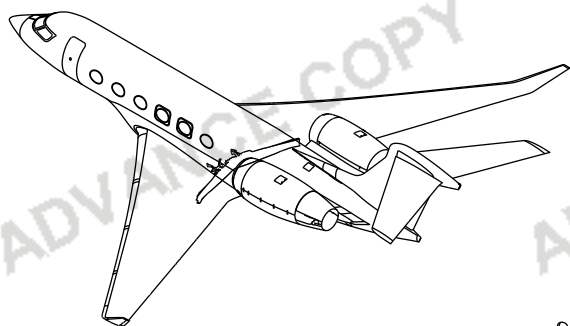
Inspect the work area for foreign objects and damage.

Do [Fuel Boost Pump – Follow-on Maintenance](#).

Record all maintenance in compliance with the National Aviation Authority Regulations.

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Fuel Boost Pump  
Figure 3

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### Fuel Boost Pump – Follow-on Maintenance

#### Preliminary Requirements

Do [Safe Ground Maintenance - General Maintenance, 20-00-00](#).

Do [Fuel Boost Pump – Installation](#).

#### Safety Conditions

##### **WARNING**

**MAKE SURE THAT ALL LANDING GEAR AND LANDING GEAR DOOR SAFETY DEVICES ARE INSTALLED BEFORE WORK IS DONE IN A WHEEL WELL OR IT CAN RESULT IN SERIOUS INJURY OR DEATH.**

##### **CAUTION**

**BEFORE THE ELECTRICAL POWER IS APPLIED TO THE AIRCRAFT, MAKE SURE THAT THE FUEL BOOST PUMPS ARE CORRECTLY PRIMED. A MINIMUM AIRCRAFT FUEL LOAD OF 16,500 / 8250 LBS (7484.27 / 3742.14 KG) FOR EACH SIDE IS NECESSARY TO CORRECTLY PRIME THE FUEL BOOST PUMPS.**

DO A VISUAL INSPECTION TO MAKE SURE THAT THE LOWER WING OVERBOARD VENTS ARE UNOBSTRUCTED BEFORE FUELING / DEFUELING THE AIRCRAFT OR DAMAGE TO AIRCRAFT CAN OCCUR.

##### **NOTE**

For information on the operation of the SSPCs, refer to [SSPC - General Maintenance, 20-20-02](#)

#### Procedure

- 1 Inspect the work area for foreign objects and damage.
- 2 **Make sure that the aircraft is fueled to a minimum fuel load of 16,500 / 8250 lbs (7484.27 / 3742.14 kg) for each side. Refer to Refueling Procedure - Refuel, 12-13-01.**

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### **WARNING**

**MAKE SURE THAT ALL PERSONNEL AND EQUIPMENT ARE CLEAR OF THE FLIGHT CONTROL SURFACES BEFORE ELECTRICAL POWER IS APPLIED OR IT CAN RESULT IN SERIOUS INJURY / DEATH TO PERSONNEL OR DAMAGE TO THE AIRCRAFT. WHEN ELECTRICAL POWER IS APPLIED TO THE AIRCRAFT, IT CAN CAUSE THE FLIGHT CONTROL SURFACES TO MOVE.**

3 Apply electrical power to the aircraft. Refer to [Electrical Power Application - General Maintenance, 20-20-01](#).

4 Remove the tags, safety clips / collars and close the circuit breakers and SSPCs:

<b>NOMENCLATURE</b>	<b>PANEL</b>	<b>LOCATION</b>
L MAIN FUEL PUMP	Left PDB	LEFT ESS DC
L FIRE BOT L ENG	TSC	2609
L FIRE BOT R ENG	TSC	2610
R FIRE BOT L ENG	TSC	2611
R FIRE BOT R ENG	TSC	2612
R MAIN FUEL PUMP	Right PDB	RIGHT ESS DC
ALT FUEL PUMP L	TSC	2808
ALT FUEL PUMP R	TSC	2809

5 On the TSC, select the Hydraulics synoptic page as follows:

- Select MENU
- On the MENU screen, select Display Control
- As necessary, select the DU2 or DU3 tab
- In 2/3 DU Options, select Hydraulics

6 On the Hydraulics synoptic page, make sure the left and right hydraulic shut-off valves display open.

7 Check for leaks around the fuel boost pumps and boost pump canisters.

8 Do a visual inspection to make sure that both fuel shut-off valves are in the full open position. See Figure 4. Fuel Boost Pump.

### **NOTE**

The valves are on the rear wing spar inboard of each pair of the fuel boost pumps.

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- 9 Remove electrical power from the aircraft. Refer to [Electrical Power Application - General Maintenance, 20-20-01](#).
- 10 Do [Fuel Boost Pump - Prime, 28-26-04](#).
- 11 As necessary, close the main landing gear door(s). Refer to [Landing Gear Door - Normal Operation, 32-00-04](#).

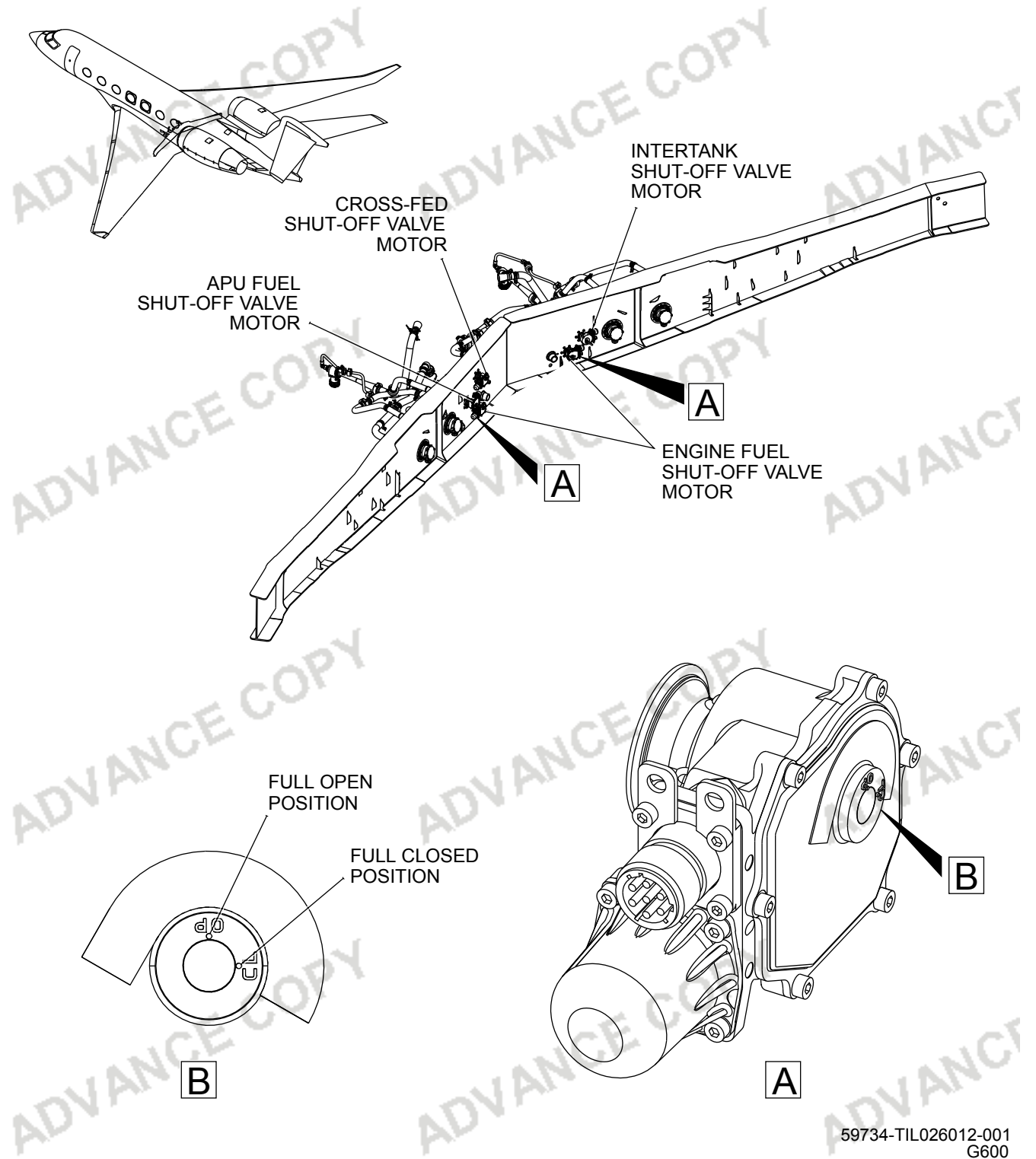
### Requirements After Job Completion

Inspect the work area for foreign objects and damage.

Record all maintenance in compliance with the National Aviation Authority Regulations.

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Fuel Boost Pump  
Figure 4

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