

ALERT SERVICE BULLETIN
REVISION NOTICE
Bell Helicopter **TEXTRON**
A Subsidiary of Textron Inc.

DATE July 12, 2006

TO: All Owners/Operators of Bell 206 A/B series Helicopters

**SUBJECT: REVISION "A" TO ALERT SERVICE BULLETIN 206-05-103:
FUEL DISTRIBUTION SYSTEM, INSPECTION AND REWORK OF.**

Revision "A" to this bulletin incorporates the following changes:

- Part II Removes the purge hose installation procedure previously incorporated by the original bulletin and returned it to the original configuration. In addition it incorporates additional clamping of the purge hose and the proper positioning of the boost pumps to prevent chafing of the purge hose and the fuel supply hoses.
- Part III provides instructions to verify the installation of the restrictor in the fuel purge system.
- Part IV provides instructions to install a 10 micron filters for ship S/N 004 to 253 and replacement of the 10 micron filter for the others. It provides cleaning instructions for the 10 micron filter

Revision "A" to this bulletin also mandates the installation of the Improved Fuel Purge System for aircraft 004 through 253.

ALERT SERVICE BULLETIN
Bell Helicopter **TEXTRON**

A Subsidiary of Textron Inc.

NO. 206-05-103

DATE Feb 11, 2005

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DATE July 12, 2006

REV A

MODEL AFFECTED: 206 A/B Series

SUBJECT: FUEL DISTRIBUTION SYSTEM, INSPECTION AND REWORK OF.

HELICOPTERS AFFECTED: PART I

206A, S/N 004 through 660, and 672 through 715;
206B, S/N 661 through 671, and 716 through 4586;
206B, S/N 5101 through 5305

[206B helicopters serial number 4587 and subsequent and serial number 5306 and subsequent will have the intent of PART I completed before delivery. 206A/B Helicopters serial number 187, 1852 and 2897 already comply with the intent of Part I]

CAUTION

Service Letter no. 206A-100 "INSTALLATION OF IMPROVED FUEL PURGE SYSTEM" shall be accomplished on helicopters serial number s/n 004 through 253 prior to accomplishment of PART II of this bulletin.

PART II

Model 206 A/B S/N 004 through 2123. Helicopters serial number 1908 and 2036 already comply with Part II.

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PART III

Model 206A/B s/n 004 through 2123. Helicopters serial number 1908 and 2036 already comply with Part III.

CAUTION

Service Letter no. 206A-100 "INSTALLATION OF IMPROVED FUEL PURGE SYSTEM" shall be accomplished on helicopters serial number s/n 004 through 253 prior to accomplishment of PART IV of this bulletin.

PART IV

Model 206 A/B s/n 004 through 2123. Helicopters serial number 1908 and 2036 already comply with Part IV.

COMPLIANCE:

PART I: at the next 100-hour inspection, but not later than May 31, 2005.

PART II: Whenever the aircraft is defueled, but no later than November 30, 2006.

PART III: Inspect at the next 100-hour inspection, but no later than August 30, 2006.

PART IV: Inspect at the next 100-hour inspection but no later than October 30, 2006. Inspect and clean every 24 months thereafter.

DESCRIPTION:

A field investigation has determined that, as a probable result of improper repair or field installation, an inadequate electrical grounding of the fuel boost pumps and the fuel drain solenoid valve may exist. This inadequate grounding combined with contact between the engine fuel purge hose and the boost pump interconnect hose may cause arcing in the main fuel cell.

A | Following this investigation, Bell Helicopter has determined that a one time inspection is required on the fuel boost pump and fuel drain solenoid valve electrical wiring installation.

PART I provides inspection and instructions to ensure that the fuel boost pumps and fuel drain solenoid valve use a common electrical ground. It has been determined that these electrical ground wires should not be separated for any reason.

PART II Bell Helicopter has learned that an undesirable condition may result after the accomplishment of PART II of the original bulletin. It has been determined that stowing the fuel purge hose may cause air ingestion into the fuel system while performing the “**AFTER FUEL SYSTEM MAINTENANCE AND/OR COMPONENT CHANGE**” inspection required per Chapter 5 of the Maintenance Manual. This situation will occur if the installation of restrictor 206-061-637-001 or 206-061-655-001 was omitted after maintenance on the fuel purge system. PART II of this bulletin has been revised to cancel the original requirement and provide instructions to reconnect the fuel purge hose to the fuel drain valve. Additional clamping of the purge hose and the proper positioning of the boost pumps will prevent chafing of the purge hose and fuel supply hoses.

PART III provides instructions to verify the installation of the restrictor in the fuel purge system.

PART IV provides instructions to verify the installation of the filter in the purge system to preclude the possibility of contamination entering the fuel system in the event of a failure of both boost pumps.

APPROVAL:

The engineering design aspects of this bulletin are Transport Canada approved.

MANPOWER:

PART I: Approximately 3.0 man-hours are required to complete Part I of this bulletin. Man-hours are based on hands-on time, and may vary with personnel and facilities available.

PART II: Approximately 5.0 man-hours are required to complete part II of this bulletin. Man-hours are based on hands-on time, and may vary with personnel and facilities available.

PART III: Approximately 0.5 man-hours are required to complete part III of this bulletin. Man-hours are based on hands-on time, and may vary with personnel and facilities available.

PART IV: Approximately 1.0 man-hours are required to complete part III of this bulletin. Man-hours are based on hands-on time, and may vary with personnel and facilities available.

Warranty:

Owner Operators of the affected helicopters who comply with the instructions outlined in this Alert Service Bulletin will receive a special 100% warranty credit for Part II and Part IV replacement parts contained in the "Required Material" section of this bulletin.

To receive this credit:

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Purchase the required parts from an approved BHTI supply source. Submit a completed MMIR to BHTI Warranty Department no later than 30 days after completion of this bulletin or no later than the following:

For PART II November 30, 2006

For PART IV May 31, 2007

If you are an online Vista Warranty User and the replacement parts are covered 100% by Bell Warranty, then the parts will be shipped to the customer at no charge by filing the Warranty claim on Vista Warranty Replacement Order. If you need assistance in filing the claim on Vista Warranty Order, please feel free to contact the Warranty Department, or consult the Bell Web Site www.bellhelicopter.com/en/support/vista/index.cfm

MATERIAL:

Required Material:

The following material is required for the accomplishment of this bulletin and may be obtained through your Bell Helicopter Textron Supply Center.

PART I

<u>Part Number</u>	<u>Nomenclature</u>	<u>Quantity</u>
31-065-2400GD1	DECAL	1
31-065-2400GD3	DECAL	1

PART II

Aircraft without the low fuel switch installed:

<u>Part Number</u>	<u>Nomenclature</u>	<u>Quantity</u>
MS21919WCF6	CLAMP	3
MS21919WCF9	CLAMP	3
MS27039C1-08	SCREW	3
NAS1149C0332R	WASHER	6
MS21043-3	NUT	3

Aircraft with the low fuel switch installed (per TB 206-85-113):

<u>Part Number</u>	<u>Nomenclature</u>	<u>Quantity</u>
MS21919WCF6	CLAMP	4
MS21919WCF9	CLAMP	4
MS27039C1-08	SCREW	4
NAS1149C0332R	WASHER	8
MS21043-3	NUT	4

PART III

<u>Part Number</u>	<u>Nomenclature</u>	<u>Quantity</u>
206-061-655-001	RESTRICTOR	AR
MS29512-04	PACKING	AR

PART IV

<u>Part Number</u>	<u>Nomenclature</u>	<u>Quantity</u>
213-593	FILTER	1
MS29512-03	PACKING	1

Consumable Material:

The following material is required to accomplish this bulletin, but may not require ordering, depending on the operator's consumable material stock levels. This material may be obtained through your Bell Helicopter Textron Supply Center.

<u>Part Number</u>	<u>Nomenclature</u>	<u>Quantity</u>	<u>Reference</u>
3950 Scotchcal	EDGE SEALER	A/R	C-349

SPECIAL TOOLS:

None required

WEIGHT AND BALANCE:

Not affected.

ELECTRICAL LOAD DATA:

Not affected

REFERENCES:

- A | BHT-206A/B-SERIES-MM1 Maintenance Manual
Chapter 5 – Inspection and Component Overhaul
- A | BHT-206A/B-SERIES-MM-2 Maintenance Manual
Chapter 12 – Servicing
- BHT-206A/B-SERIES-MM-4 Maintenance Manual
Chapter 28 – Fuel System
- A | BHT-206A/B-SERIES-MM-9 Maintenance Manual
Chapter 71 – Powerplant
- BHT-206 A/B-IPB Illustrated Parts Breakdown
Chapter 28 – Fuel
- A | Service Letter no. 206A-100
Installation of Improved Fuel Purge System
- A | ASB 206-75-8
Installation of 10 Micron Filter in Fuel Purge Line

PUBLICATIONS AFFECTED:

BHT-206A/B-SERIES-MM1 Maintenance Manual
Chapter 5 – Inspection and Component Overhaul

BHT-206A/B-SERIES-MM-4 Maintenance Manual
Chapter 28 – Fuel

BHT-206A/B-SERIES-MM-9 Maintenance Manual
Chapter 71 – Powerplant

BHT-206 A/B-IPB Illustrated Parts Breakdown
Chapter 28 – Fuel

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ACCOMPLISHMENT INSTRUCTIONS:

PART I

-NOTE-

For aircraft S/N 004 through 4204, the electrical grounding point is located at station 130.00, Waterline (W.L.) 27.00, Right Buttock Line (R.B.L.) 15.00. at the aft cross tube tunnel as shown in Figure 1. Some aircraft may have had the grounding point relocated as shown in figure 2.

-NOTE-

For aircraft 4205 and subs, the electrical grounding point is located on the bulkhead at station 142.33 on the right side of the baggage compartment as shown in Figure 2. Removal of the baggage compartment R/H side panel will be required.

1. Locate and get access to the electrical grounding point.

-NOTE-

The wires Q22A22N and Q23A22N may not be installed on:

- Aircraft S/N 4 thru 583 unless there is an electrically operated drain valve installed in accordance with the Service Letter 206-140.
 - Aircraft S/N 4 thru 2123 with a Fuel Low Caution Light System installed per TB 206-85-113 and S/N 2124 thru 4053 per TB 206-84-94.
2. Verify that the ground wires Q22A22N, Q23A22N, Q2A18N and Q4A18N are connected to the specific ground stud as shown in Figure 1 or Figure 2.

-NOTE-

If the ground wires are found to be too short in length to reach the electrical ground stud, replace existing ground wires in accordance with BHT-ELEC-SPM.

3. If the ground wires Q22A22N, Q23A22N, Q2A18N and Q4A18N are connected together at the electrical grounding point go to step 6.
4. If any of these ground wires are missing on the ground stud, locate the mislocated ground wire(s) and re-route them to the applicable grounding point.
5. After rerouting the mislocated wire(s), perform the following checks:
 - i. For the fuel boost pumps:
 1. Close FWD and AFT fuel boost pump circuit breakers
 2. If pumps fail to operate, refer to trouble shooting flow chart in BHT-206 A/B-SERIES-MM-10, Chapter 96, Figure 96-16.
 - ii. For the fuel drain valve solenoid (if installed):
 1. Close FUEL VALVE circuit breaker.
 2. Put the FUEL VALVE in the OFF position.
 3. Press the FUEL DRAIN SWITCH and make sure that the fuel drain valve solenoid operates.
 4. If the fuel drain valve solenoid doesn't operate, refer to BHT-206 A/B-SERIES-MM-12, Chapter 98, Figure 98-17.

6. Identify the electrical ground stud as follow:
 - For helicopter S/N 004 through 4204, install decal P/N 31-065-2400GD1 as shown in Figure 1. Aircraft that use the grounding point as shown in Figure 2, locate decal P/N 31-065-2400GD1 as per Figure 2.
 - For helicopter S/N 4205 through 4586, install decal P/N 31-065-2400GD3 as shown in Figure 2.
7. Apply edge sealer (C-349) on decal.
8. Annotate the aircraft records to indicate compliance with PART I of this bulletin.

PART II: Clamping of the purge hose and positioning of the boost pumps

1. On aircraft S/N 2124 and subsequent the fuel purge hose is not installed, Part II does not apply.
2. On aircraft S/N 004 through 2123: If the fuel purge hose was stowed in accordance with the original ASB 206-05-103 part II, the hose must be re-connected to the drain valve. Also, additional clamping of the fuel hoses and the proper positioning of the boost pumps is required, proceed to step 4.
3. For aircraft that have the low fuel switch installed in accordance with TB206-85-113, additional clamping of the hoses and the proper positioning of the boost pumps is required, proceed to step 4.
4. Defuel aircraft. (Refer to BHT-206 A/B-SERIES-MM-2, Chapter 12)
5. Remove both boost pumps. (Refer BHT-206A/B-SERIES-MM-4 chapter 28)

-NOTE-

The fuel hoses are removed from the fuel cell in order to complete the following clamping arrangement.

-NOTE-

For aircraft without the low fuel switch installed, refer to figure 3. For aircraft with the low fuel switch installed (per TB 206-85-113), refer to figure 4.

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6. Remove the boost pump interconnect hose (1) (refer to figure 3 or figure 4), tee fitting (4), fuel supply hose (2) and fuel purge hose (3) from the fuel cell.
7. Connect and tighten the interconnect hose (1) to the tee fitting (4), ensuring to keep the hose fitting and tee fitting on the same plane. Connect the fuel supply hose (2) to the tee fitting (4) and tighten.
8. For aircraft without the low fuel switch, clamp the fuel purge hose (3) to the interconnect hose (1) and to the fuel supply hose (2) using the dimensions and hardware called out in figure 3.
9. For aircraft with the low fuel switch per TB206-85-113, clamp the fuel purge hose (3) to the interconnect hose (1) and to the fuel supply hose (2) using the dimensions and hardware called out in figure 4.
10. Working from the aft boost pump access hole, slide the assembled hoses into the fuel cell and position them in their respective locations.

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-NOTE-

Ensure to keep the interconnect hose (1) in a straight line and in its respective location during the following steps.

11. Connect and tighten the purge hose (3) to the drain valve. Aircraft with the low fuel switch per TB206-85-113 may omit this step.
12. While holding the aft boost pump with the fuel pressure switch / outlet port facing 45 degrees to the right of the aircraft center line, connect and tighten the tee fitting (4) onto the aft boost pump. (Refer to figure 5).
13. Install the aft boost pump, (refer to figure 5 for boost pump alignment and to BHT-206A/B-SERIES-MM-4 chapter 28).
14. While holding the forward boost pump as shown in figure 5, connect and tighten the interconnect hose (1) to the forward boost pump. Install the forward boost pump while ensuring the interconnect hose is kept in a straight line (refer to figure 5 for boost pump alignment). (Refer to BHT-206A/B-SERIES-MM-4 chapter 28)

15. Working from the fuel filler hole, retrieve the upper ends of the fuel supply hose (2) and the fuel purge hose (3). Connect and tighten the hoses to their respective fittings. (Refer to BHT-206A/B-SERIES-MM-4 chapter 28)
16. Accomplish "AFTER FUEL SYSTEM MAINTENANCE AND/OR COMPONENT CHANGE" inspection (Refer to BHT-206 A/B-SERIES-MM-1, Chapter 5)
17. Annotate the aircraft records to indicate compliance with PART II of this bulletin.

PART III: Verification for restrictor

1. Gain access to the purge hose assembly located in the engine compartment. (Refer to figure 6).
2. Disconnect the purge line from the restrictor. Verify for the installation of 206-061-637-001 or 206-061-655-001 restrictor. The restrictor has an opening of .0145 in to .0160 in.
3. If the restrictor is missing, install p/n 206-061-655-001 restrictor.
4. If the restrictor is installed, re-install the purge line to the restrictor.
5. Perform an "AFTER FUEL SYSTEM MAINTENANCE AND/OR COMPONENT CHANGE" inspection (BHT-206A/B-SERIES-MM, Chapter 5).
6. Annotate the aircraft records to indicate compliance with PART III of this bulletin.

PART IV: Verification of filter

1. Helicopters s/n 004 through s/n 253 must install 213-593 filter after complying with Service Letter no. 206A-100, Helicopters s/n 254 through 2123 must replace the 213-593 filter.
 - a. Remove the fuel valve access panel on the right hand side of helicopter to gain access to the fuel vent / purge fitting p/n 206-061-652-001.
 - b. Disconnect the fuel tube assembly p/n 206-061-649-1 or 684-1 from the top of the union, remove the union from the fitting. (Refer to figure 7).
 - c. Install MS29512-03 packing on the new 213-593 filter. Install the filter in the 206-061-652-001 fitting where the union was removed.

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- d. Reconnect the previously removed line to the top of the filter and tighten the nut.
- e. Proceed to step 3.

2. 24 month inspection and cleaning of filter:

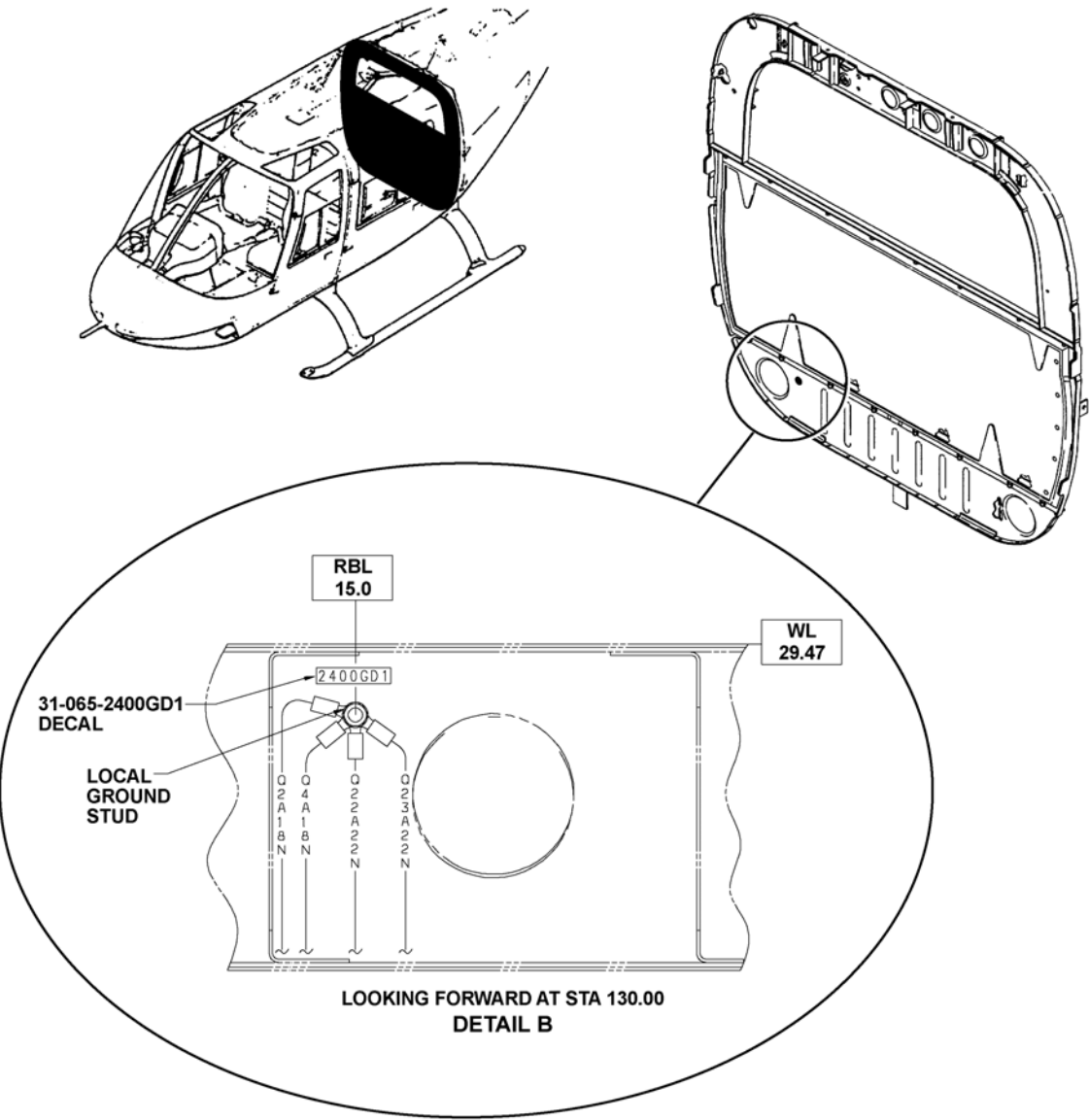
- a. Remove the fuel valve access panel on the right hand side of helicopter to gain access to the fuel vent / purge fitting p/n 206-061-652-001.
- b. Disconnect the fuel tube assembly p/n 206-061-649-1 or 684-1 from the top of the 213-593 filter. (Refer to figure 7).
- c. Remove the 213-593 filter and discard packing.
- d. Clean the 213-593 filter by back-flushing with clean fuel.
- e. Re-install the 213-593 filter with MS29512-03 packing and re-connect the fuel purge tube to the filter.
- f. Proceed to step 3.

3. Perform an "AFTER FUEL SYSTEM MAINTENANCE AND/OR COMPONENT CHANGE" inspection (BHT-206A/B-SERIES-MM, Chapter 5).

4. Re-install the fuel valve access panel on R/H side of aircraft.

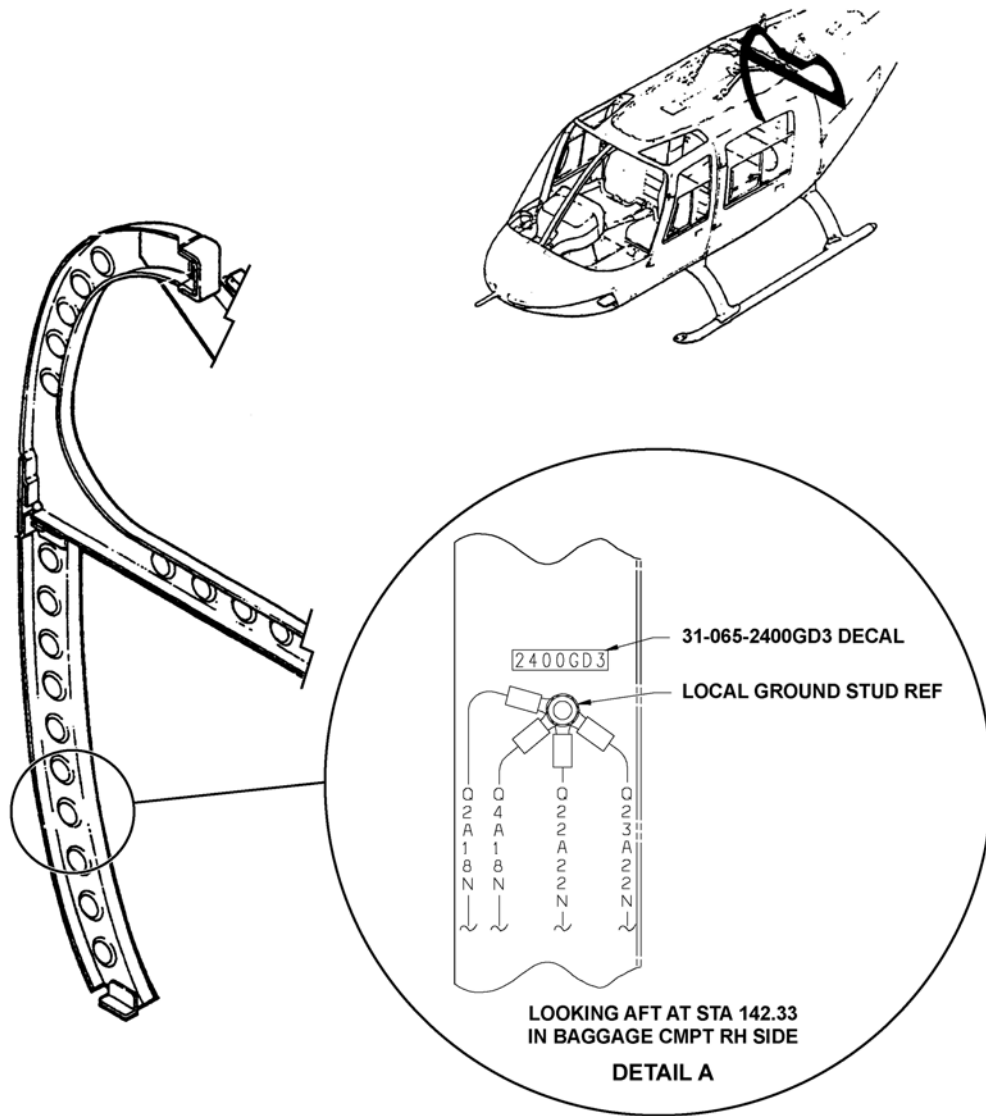
5. Annotate the aircraft records to indicate compliance with PART IV of this bulletin.

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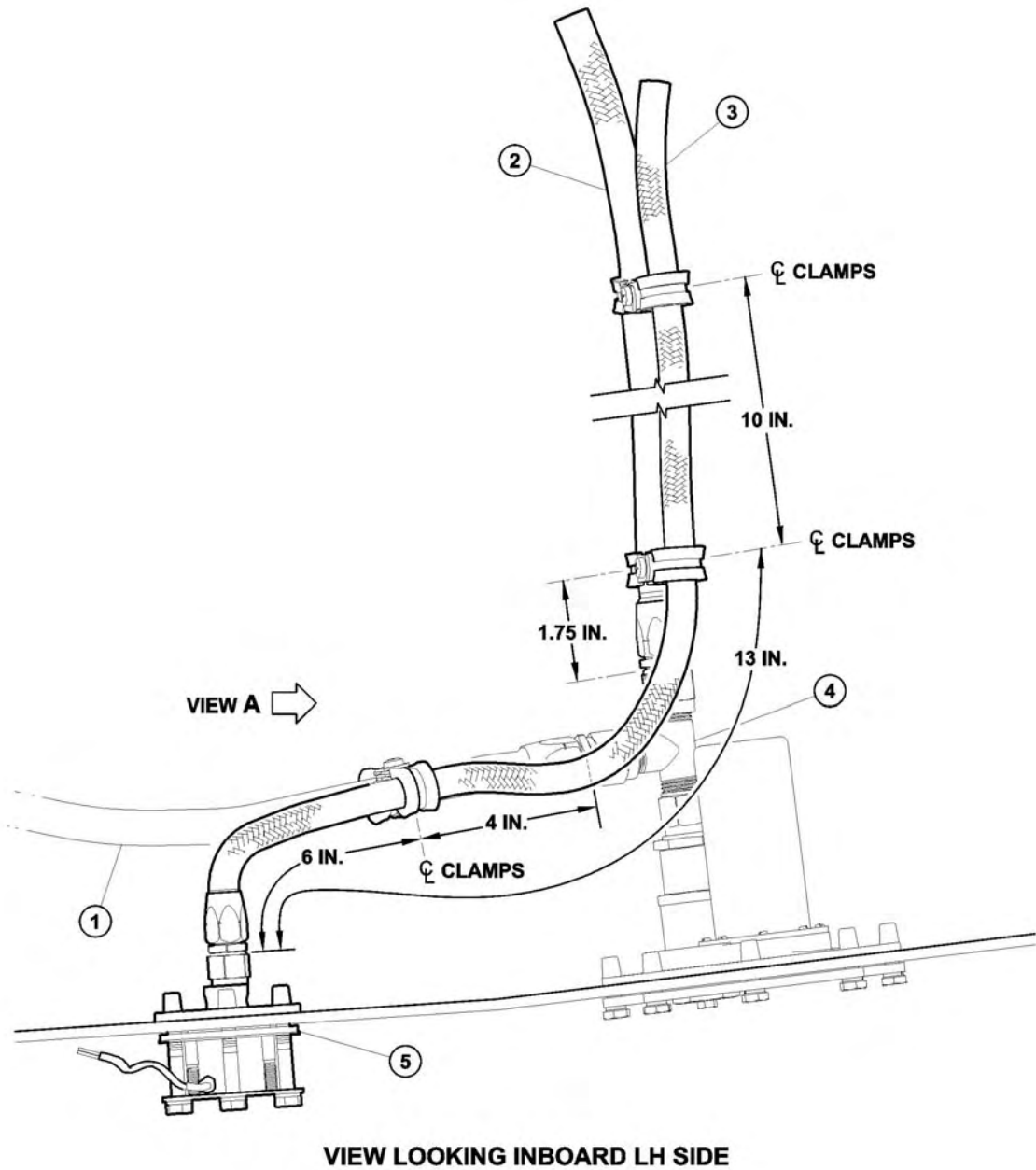
04551001_im

FIGURE I



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FIGURE 2

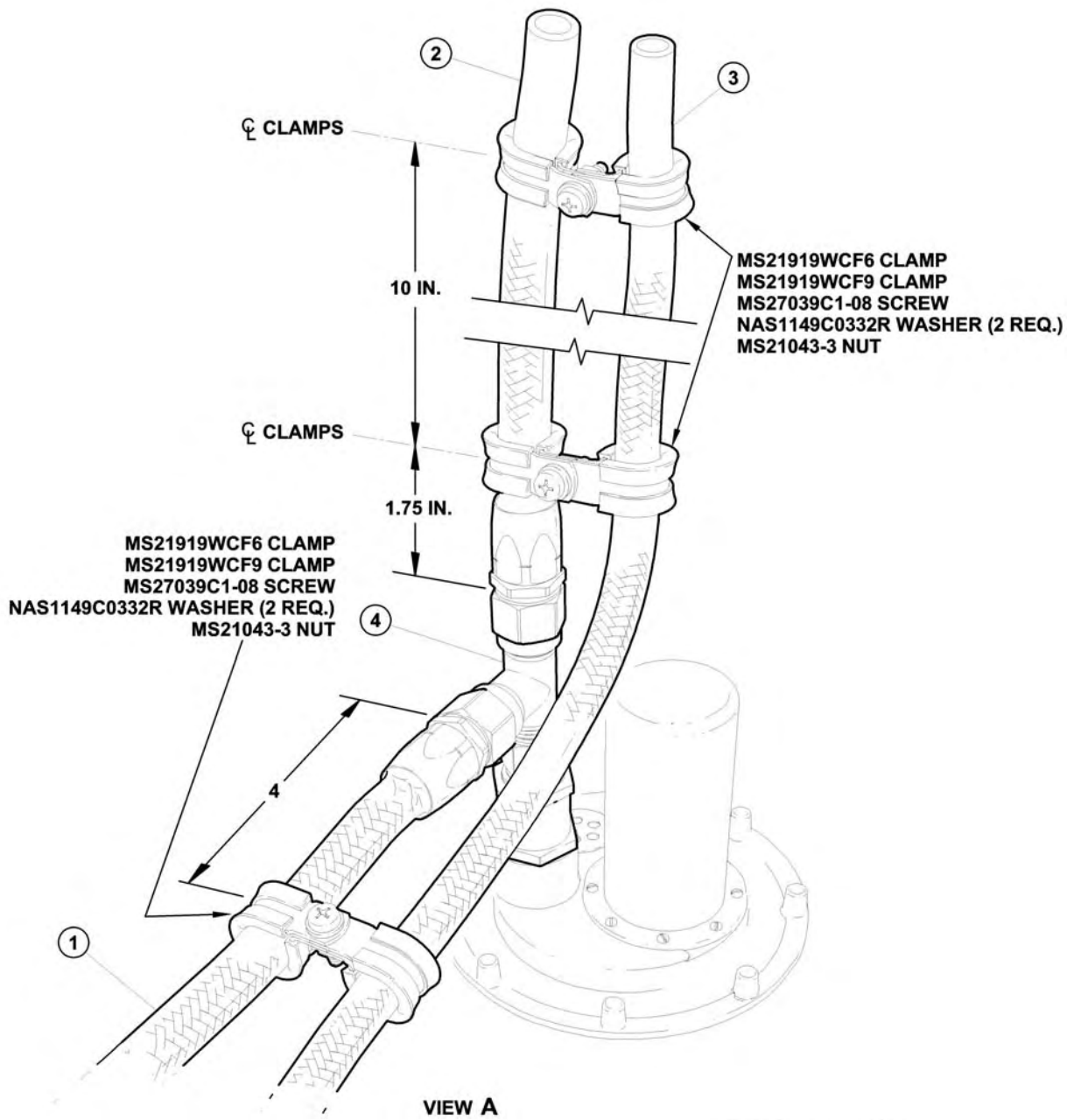


- 1. Interconnect hose
- 2. Fuel supply hose assembly.
- 3. Fuel purge hose assembly.
- 4. Tee
- 5. Drain valve

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FIGURE 3. Clamping of Fuel Hoses (sheet 1 of 2)



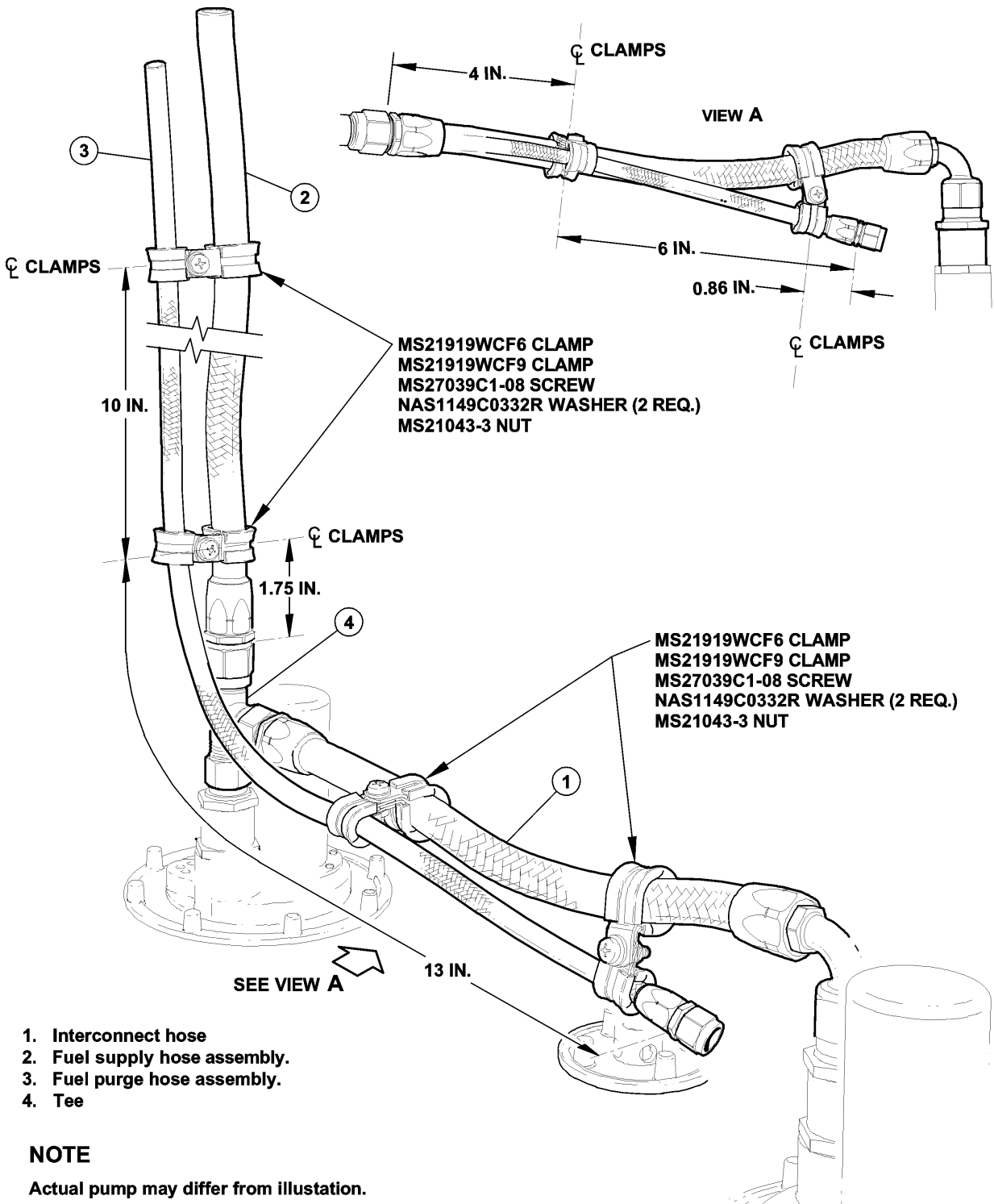
1. Interconnect hose
2. Fuel supply hose assembly.
3. Fuel purge hose assembly.
4. Tee

NOTE

Actual pump may differ from illustration.

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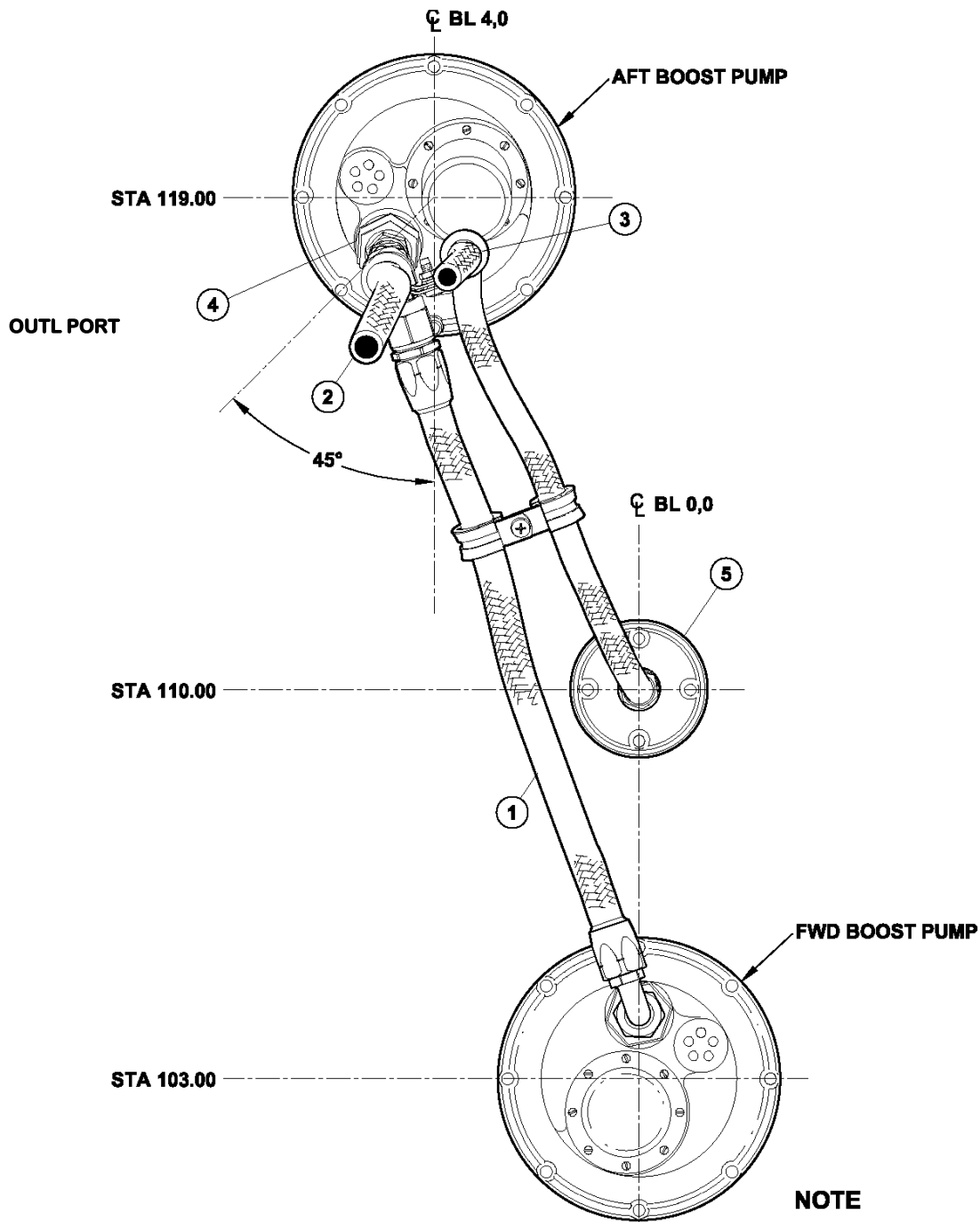
FIGURE 3. Clamping of Fuel Hoses (sheet 2 of 2)



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FIGURE 4. Clamping of Fuel Hoses

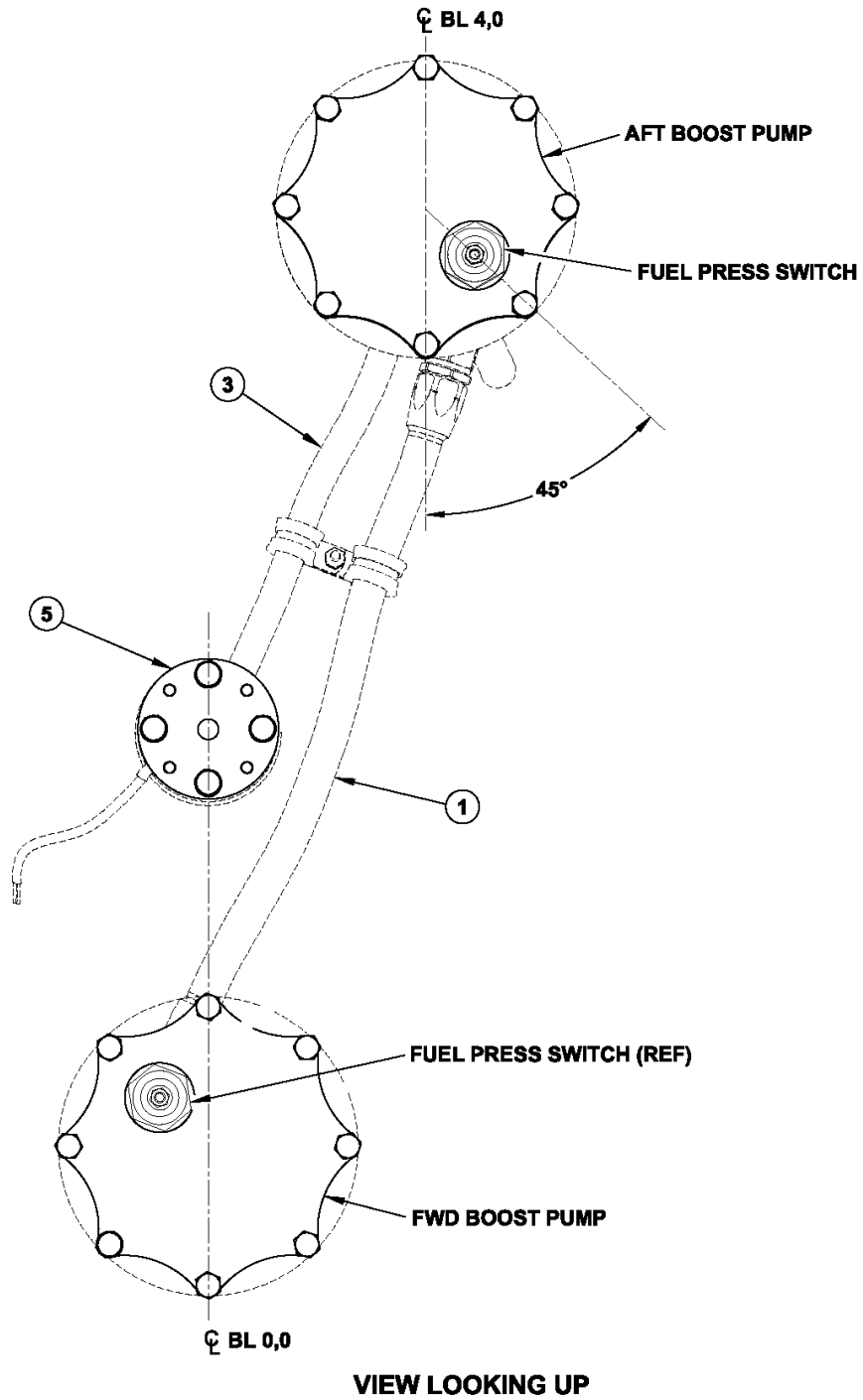


- 1. Interconnect hose
- 2. Fuel supply hose assembly
- 3. Fuel purge hose assembly
- 4. Tee
- 5. Drain valve

NOTE
 Clocking of FWD fuel pump to be such as to allow fuel feed interconnect line to lie in a straight line between both fuel pumps.

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FIGURE 5. Positioning of Boost Pumps (sheet 1 of 2)



RAM_04551_004

View Looking up

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FIGURE 5. Positioning of Boost Pumps (sheet 2 of 2)

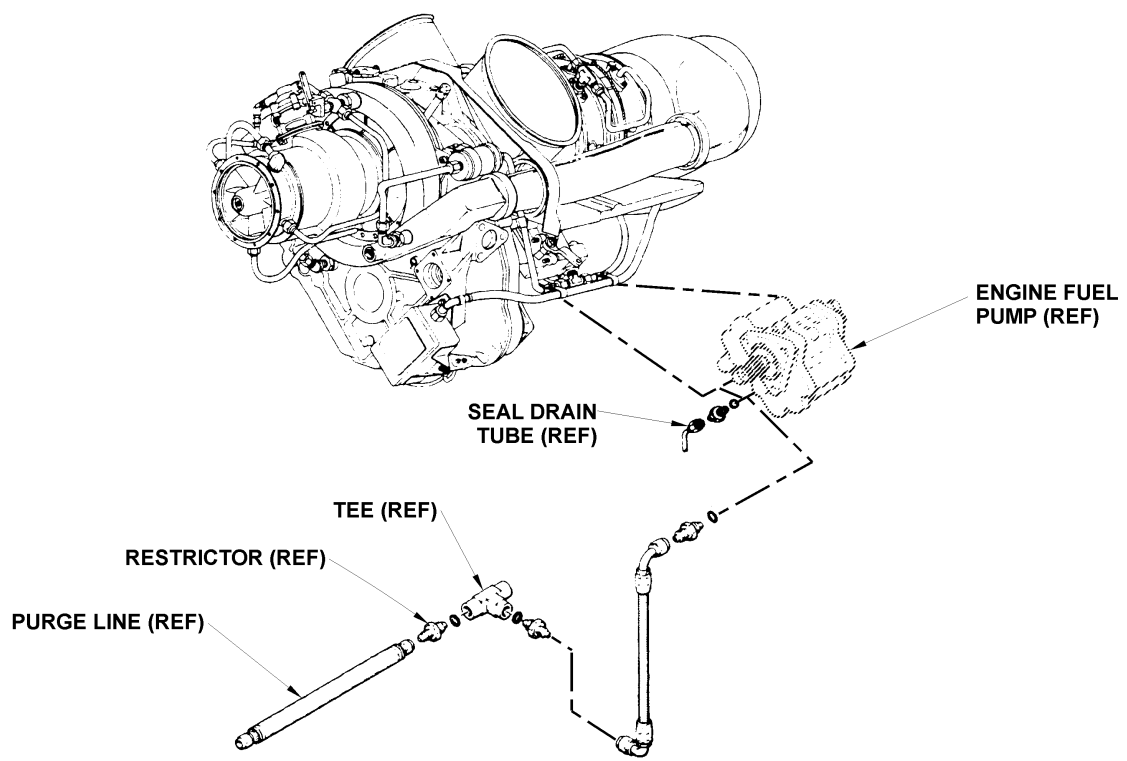
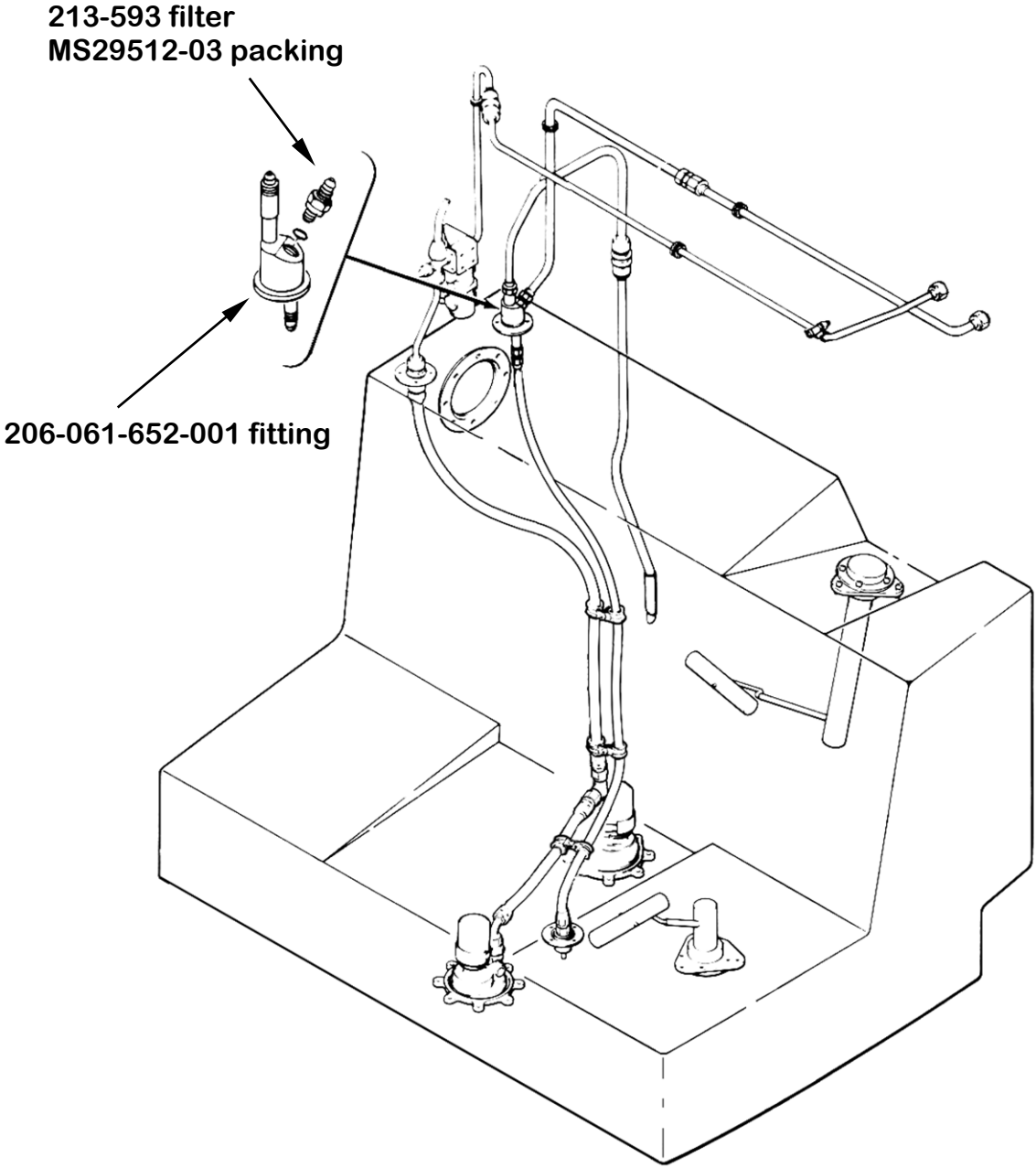


FIGURE 6. Verification of Restrictor



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FIGURE 7. Installation of Filter