



Alert Service Bulletin

Alert Service Bulletin No. 076

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200F, 201F, 202F Fuel Pump Leak Inspection and Diaphragm Replacement

1. Planning Information

A. Effectivity

- (1) Fuelcraft 200F, 201F, 202F Series Fuel Pumps manufactured by Hartzell Engine Technologies LLC (HET) with P/N 063F-0001 diaphragm used in all part number fuel pumps.
 - (a) Fuel pump serial numbers H-QBN029FP, H-QEN146FP, H-QEN147FP, H-QEN148FP, H-SCN031FP, and H-SGN069FP through H-VFN043FP with diaphragm cure date of 04/17 or earlier are affected by this Alert Service Bulletin (ASB).
 - (b) Affected HET P/N 063F-0001 diaphragms in inventory, or any 200F, 201F, 202F Series Fuel Pump that has been installed and placed in service with an affected diaphragm from August 14, 2015 until the effective date of this ASB, with a diaphragm cure date of 04/17, or earlier, are affected by this ASB.
 - (c) Engine applications may include, but are not limited to, those listed in Table 2.

NOTE: Table 2 is for reference only and is not an all-inclusive list of aircraft affected by this ASB. It is the responsibility of the owner/operator to verify whether an affected fuel pump may be installed.

WARNING: DO NOT USE OBSOLETE OR OUTDATED INFORMATION. PERFORM ALL INSPECTIONS OR WORK IN ACCORDANCE WITH THE MOST RECENT REVISION OF THIS ALERT SERVICE BULLETIN. INFORMATION CONTAINED HEREIN MAY BE SIGNIFICANTLY CHANGED FROM EARLIER REVISIONS. FAILURE TO COMPLY WITH THIS ALERT SERVICE BULLETIN OR THE USE OF OBSOLETE INFORMATION MAY CREATE AN UNSAFE CONDITION THAT MAY RESULT IN DEATH, SERIOUS BODILY INJURY, AND/OR SUBSTANTIAL PROPERTY DAMAGE. REFER TO WWW.FUELCRAFT.AERO FOR THE MOST RECENT REVISION LEVEL OF THIS ALERT SERVICE BULLETIN.

B. Concurrent Requirements

- (1) None

C. Reason

- (1) This ASB provides supersedure notice of ASB 069 dated January 25/17.
 - (a) Upon release date of this ASB, ASB 069 shall become obsolete.
- (2) Fuel leakage through the fuel pump diaphragm has been observed. This condition may be due to a manufacturing condition allowing the diaphragm to crack or tear.
- (3) Replacement of the diaphragm is required for affected 200F, 201F, 202F series fuel pump.
- (4) Regulatory action is unknown.

D. Description

- (1) This Alert Service Bulletin provides Instructions for Continued Airworthiness (ICA).

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- (2) This Alert Service Bulletin provides instructions for repair of an affected fuel pump by installation of a new HET P/N 063F-0001 diaphragm or the replacement of the fuel pump with one not affected by this ASB.

E. Compliance

NOTE: Compliance with this ASB is required even if ASB 069 was previously complied with.

- (1) Within twenty-five (25) hours time in service or at the next regularly scheduled inspection, whichever occurs first, inspect the affected fuel pump reference vent port for fuel leakage in accordance with the Accomplishment Instructions of this Alert Service Bulletin.
 - (a) If fuel leakage at the fuel pump reference port **is** found, refer to Option 1 or Option 2:
 - 1) **Option 1:** The affected fuel pump must be repaired by installation of a new diaphragm prior to next flight. Refer to Table 1 of this ASB for materials required.
 - 2) **Option 2:** The affected fuel pump must be replaced with one not affected by this ASB prior to next flight.
 - (b) If fuel leakage at the fuel pump reference port **is not** found:
 - 1) Repeat inspection each twenty-five (25) hours time-in-service thereafter, not to exceed twelve (12) calendar months from the effective date of this ASB or until the affected fuel pump can be repaired or replaced with a fuel pump not affected by this Alert Service Bulletin.
 - a) The affected fuel pump must be replaced no later than twelve (12) months after release of this ASB, regardless of findings.
- (2) Repair or replacement of an affected fuel pump in accordance with the Accomplishment Instructions is the terminating action for this Alert Service Bulletin.

F. Approval

- (1) FAA acceptance has been obtained on technical data in this publication that affects type design.

G. Manpower

- (1) Labor is negligible for identification and inspection when performed in conjunction with regularly scheduled maintenance required by the engine/aircraft manufacturer.
- (2) Up to one and a half (1.5) hours labor required for removal and installation of the fuel pump.
- (3) Up to one (1.0) hour labor is required for replacement of the pump diaphragm and Return to Service if performed in conjunction with regularly scheduled maintenance.

H. References

- (1) Applicable aircraft POH or AFM.
- (2) Aircraft maintenance manual (as applicable).
- (3) Engine Service Instructions or maintenance manual (as applicable).
- (4) HET Fuel Pump Overhaul Manual, P/N 200201-0000 Rev. H or latest FAA approved revision.

I. Other Publications Affected

- (1) None

J. Weight and Balance

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- (1) No Change

2. Material Required

A. If replacing the fuel pump:

- (1) One (1) each, fuel pump of the part number removed that is not affected by this Alert Service Bulletin.

B. If repairing the fuel pump:

- (1) Repair Kit P/N 79905 may be obtained by filling out the Claim Form at the end of this document.

Part Number	Description	QTY.
NAS135C3H20	Screw, Cap	4
063F-0001	Diaphragm	1
065F-0003	Washer, .315 Flat	4

Table - 1 - Repair Kit P/N 79905 Parts List

- (2) Appropriate length of 0.032 inch stainless steel safety wire.

- (a) Optional use: Two (2) each, Safe-T-Cable™, HET P/N RX-1961.

3. Accomplishment Instructions

WARNING: THIS PROCEDURE MUST BE PERFORMED BY COMPETENT AND QUALIFIED PERSONNEL WHO ARE FAMILIAR WITH ENGINE AND AIRFRAME MAINTENANCE THAT IS SPECIFIC TO THE ENGINE FUEL SYSTEM. FAILURE TO DO SO MAY RESULT IN ECONOMIC LOSS, EQUIPMENT DAMAGE, AND/OR PHYSICAL INJURY.

CAUTION 1: DO NOT USE OBSOLETE OR OUTDATED INFORMATION. PERFORM ALL INSPECTIONS OR WORK IN ACCORDANCE WITH THE MOST RECENT REVISION OF THIS ALERT SERVICE BULLETIN AND THE APPLICABLE AIRCRAFT, ENGINE AND/OR THE HET P/N 200201-0000 MAINTENANCE MANUAL. INFORMATION CONTAINED IN THESE MANUALS OR THIS ALERT SERVICE BULLETIN MAY BE SIGNIFICANTLY CHANGED FROM EARLIER REVISIONS. FAILURE TO COMPLY WITH THE ALERT SERVICE BULLETIN OR THE USE OF OBSOLETE INFORMATION MAY CREATE AN UNSAFE CONDITION THAT MAY RESULT IN DEATH, SERIOUS BODILY INJURY, AND/OR SUBSTANTIAL PROPERTY DAMAGE. REFER TO THE FUEL CRAFT WEBSITE (WWW.FUELCRAFT.AERO) FOR THE MOST RECENT REVISION OF THE 200201-0000 MANUAL.

CAUTION 2: DONOTDEPENDONTHISALERTSERVICEBULLETINFORGAININGACCESSTO THEENGINE OR FUEL PUMP. ACCESS REQUIRES THE USE OF THE APPLICABLE MANUFACTURER'S MAINTENANCE MANUALS OR SERVICE INSTRUCTIONS. IN ADDITION, ANY PREFLIGHT OR IN FLIGHT OPERATIONAL CHECKS REQUIRE USE OF THE APPROPRIATE AFM OR POH.

A. Fuel Pump Identification

- (1) If positive identification of the fuel pump model, serial number, and cure date can be made through the engine or aircraft documentation, and the fuel pump **is** affected per 1.A, continue to 3.B Inspection. If the fuel pump is **NOT** affected, no further action is required.
- (2) Identify any 200F, 201F, 202F Series Fuel Pump that has an affected HET P/N 063F-0001 diaphragm which was field installed from August 14, 2015 to the effective date of this ASB through the engine or aircraft

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documentation. If the fuel pump is affected per 1.A(1)b, continue to 3.B., Inspection.

- (a) If records do not indicate that an affected HET P/N 063F-0001 diaphragm was field installed, the fuel pump is NOT affected and no further action is required. Continue to 3.E.(2), Maintenance Record.
- (3) If positive identification cannot be made through engine or aircraft documentation, gain access and locate the data tag on the fuel pump to verify the fuel pump effectivity.
 - (a) If the unit IS affected, proceed to section 3.B., Inspection.
 - (b) If the unit is NOT affected, install any components that were removed to gain access in accordance with the latest engine/airframe service instructions or maintenance manual. Continue to 3.E.(2), Maintenance Record.

B. Fuel Pump Reference Vent Port Inspection

NOTE: Some engine applications will have a cooling shroud installed over the fuel pump. It may be necessary to remove this shroud for initial identification and for recurring inspection.

- (1) The HET series fuel pumps use the reference vent port in several ways. The port may have an orifice plug installed, a fitting for an upper deck reference line, or a fitting to connect to the engine turbocharger reference.
 - (a) Inspection of the orifice plug requires only a visual inspection. Look around the plug and into the orifice for fuel or blue dye stains. Refer to Fig. 1 or Fig. 2.
 - (b) Inspection of the upper deck reference line requires that the line be disconnected and the inside of the fitting be inspected for fuel or blue dye stains. Refer to Fig. 5 and 6.
 - (c) Inspection of the engine turbocharger reference line will require that the "B" nut be removed and the inside of the fitting be inspected for fuel or blue dye stains.
- (2) Inspection for fuel or blue dye stains may require use of a "Q" tip cotton swab or similar device to check for the presence of fuel or blue dye.
- (3) If fuel or blue dye stains ARE NOT found:
 - (a) Continue inspection interval in accordance with 1.E.(1)(b), Compliance, or; continue to 3.C., Corrective Action.
 - (b) Reassemble the connection for the upper deck reference or the engine turbocharger reference lines.
 - (c) If removed, reinstall the fuel pump cooling shroud and air hose (if applicable) in accordance with the latest engine/airframe service instructions or maintenance manual and continue to 3.D.(1), Return to Service. Refer to Fig. 4.
- (4) If fuel or blue dye stains ARE found, continue to 3.C., Corrective Action.

C. Corrective Action - Choose (1), (2), or (3):

- (1) Fuel Pump Factory Repair
 - (a) Remove cooling shroud (if required) and fuel pump from engine in accordance with engine and airframe service instructions. Retain all engine or aircraft supplied fittings from the fuel pump prior to return. **(HET CANNOT RETURN FITTINGS TO THE CUSTOMER.)**
 - (b) Forward the affected fuel pump to the HET factory per the instructions contained in Appendix I-Commercial Assistance found at the end of this Alert Service Bulletin.

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- (c) Install the repaired fuel pump on the engine along with the cooling shroud (if required) in accordance with current engine/airframe service instructions or maintenance manual and continue to 3.D.(1), Return to Service.

(2) Fuel Pump Field Repair:

NOTE 1: Refer to the HET overhaul manual P/N 200201-0000 Rev. H or latest FAA approved revision for the following steps necessary to replace the diaphragm in the applicable model and part number fuel pump.

NOTE 2: Fuel Pump P/N 200F-5006 (Lycoming P/N 62E23190) and P/N 200F-5007 (Lycoming P/N 62E23191-Y) are not listed in the current overhaul manual, however, the HET overhaul manual P/N 200201-0000 Rev. H or later FAA approved revision may be used along with these instructions.

- (a) Remove cooling shroud (if required) and fuel pump from engine in accordance with engine and airframe service instructions.
- (b) Disassemble the applicable fuel pump in accordance with Section 3 of HET P/N 200201-0000 manual as appropriate for the applicable part number and model. Use only those sections required to replace the diaphragm.
- (c) Replace the existing HET P/N 063F-0001 diaphragm with a new diaphragm not affected by this ASB.
- (d) Assemble the fuel pump in accordance with Section 7 of the HET 200201-0000 overhaul manual as appropriate to the model number. Use only those sections required to install the diaphragm. Diaphragm replacement instruction applies to the fuel pump model but is not part number specific.
- (e) Install the four new flat washers HET P/N 065F-0003 and the four new cap screws HET P/N NAS1352C3H20. Torque screws in accordance with HET 200201-0000 Overhaul Manual.
- (f) Test and adjust the applicable fuel pump in accordance with Section 2 of the HET P/N 200201-0000 overhaul manual as appropriate for the applicable part number and model. Use only those sections required to test the fuel pump and adjust the relief valve.
- 1) For the 200F Fuel Pump P/N 200F-5006 (62E23190) and P/N 200F-5007 (62E23191-Y), the Relief Valve Setting data is shown in the following table:

Model No.	Application	Direction of Rotation	Inlet Pressure (in. HgA)	Speed (rpm)	Flow (pph)	Discharge Pressure (psig)
200F-5006	Lycoming (62E23190)	CW	26 In. HgA	2500 +/-50	265 +/-5	25 - 40 *
-	-	-	28 In. HgA	650 +/-10	265 +/-5	25 +/-1 *
200F-5007	Lycoming (62E23191-Y)	CCW	26 In. HgA	2575 +/-50	260 +/-5	65 +/-1 *
-	-	-	28 In. HgA	650 +/-10	9 MIN	36 +/-1 *

* Relief valve setting requires that two set points be achieved.

- (g) Install 0.032 inch stainless steel safety wire or optional Safe-T-Cable™, HET P/N RX-1961 at the head of the cap screws. Tool requirements and Installation for Safe-T-Cable™ may be found at <http://www.dmctools.com>.
- (h) Reinstall the fuel pump and fuel pump cooling shroud with air hose, if removed, in accordance with current engine/airframe maintenance manual or service instructions.

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(3) Fuel Pump Replacement

- (a) Replace the fuel pump with one not affected by this ASB in accordance with the engine and airframe service instructions and continue to 3.D.(1), Return to Service.

D. Return to Service

- (1) Perform the recommended fuel pump/fuel system set up and functional tests in accordance with the appropriate aircraft maintenance manual, engine service instructions, and operational tests in the AFM or POH.
- (2) Inspect the fuel pump installation for security and leaks.

E. Maintenance Record

- (1) For affected fuel pumps continuing in service, make an engine logbook entry to indicate compliance with this Alert Service Bulletin noting when the next inspection is due.
- (2) For terminating action, make an engine logbook entry to indicate compliance with this Alert Service Bulletin.

4. Contact Information

A. Contact HET Product Support for all communications regarding the technical content of this Alert Service Bulletin.

- (1) Phone +1.334.386.5400 (Option 2)
- (2) Fax +1.334.386.5450.
- (3) E-mail at techsupport@HartzellEngineTech.com.
- (4) Address

Hartzell Engine Technologies LLC
2900 Selma Highway,
Montgomery, AL 36108
USA

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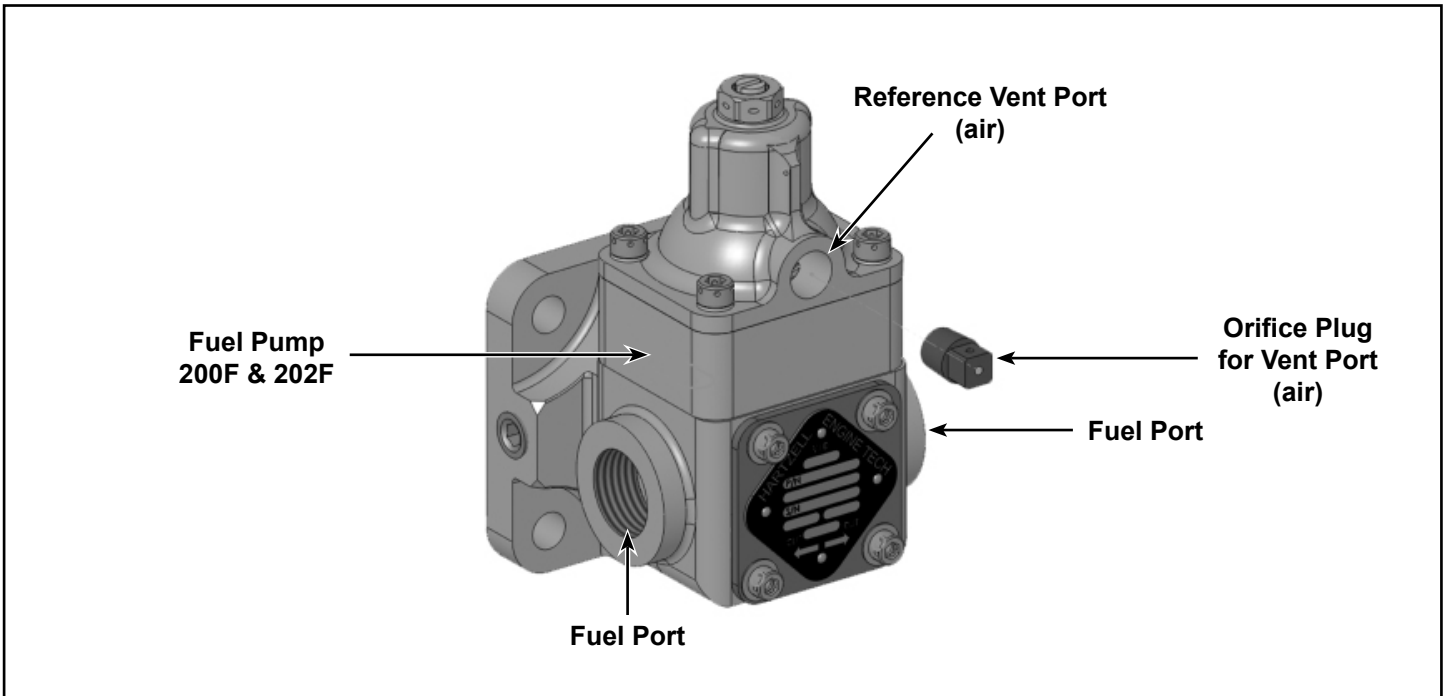


Figure 1 - 200F & 202F Identification

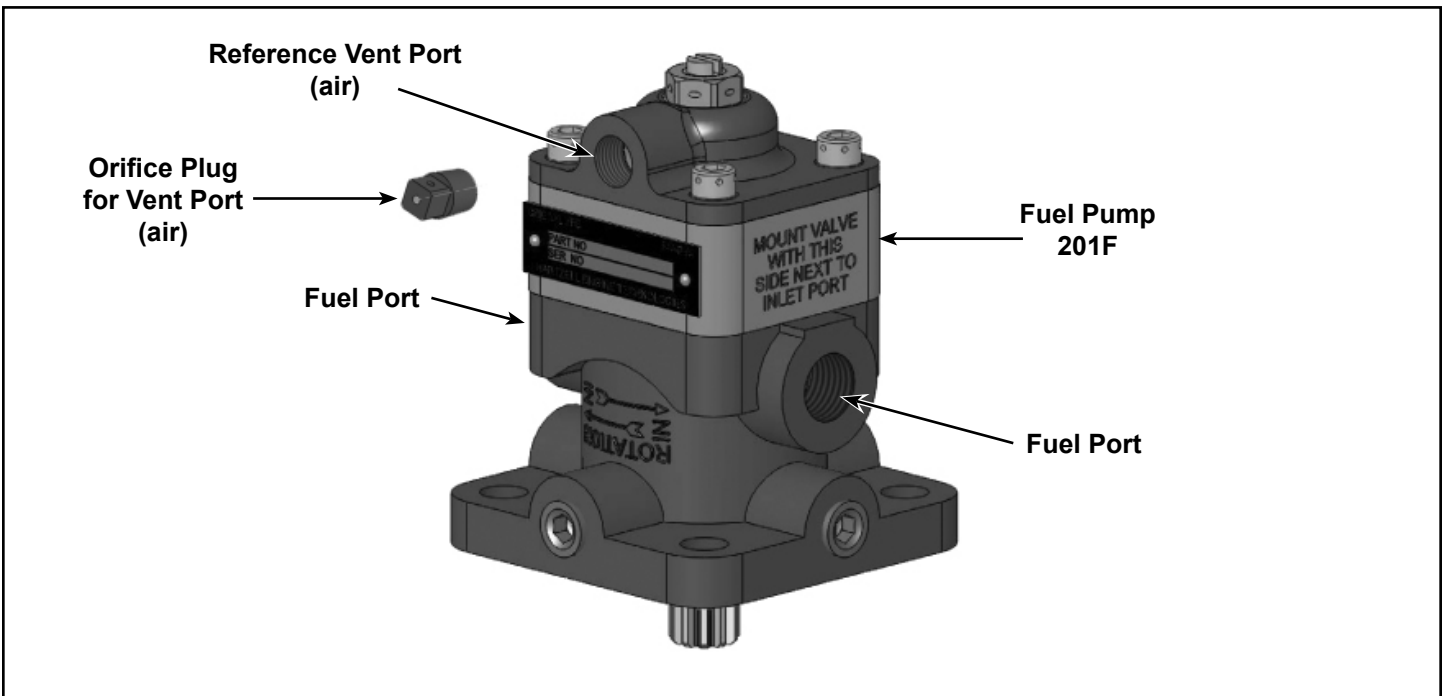


Figure 2 - 201F Identification

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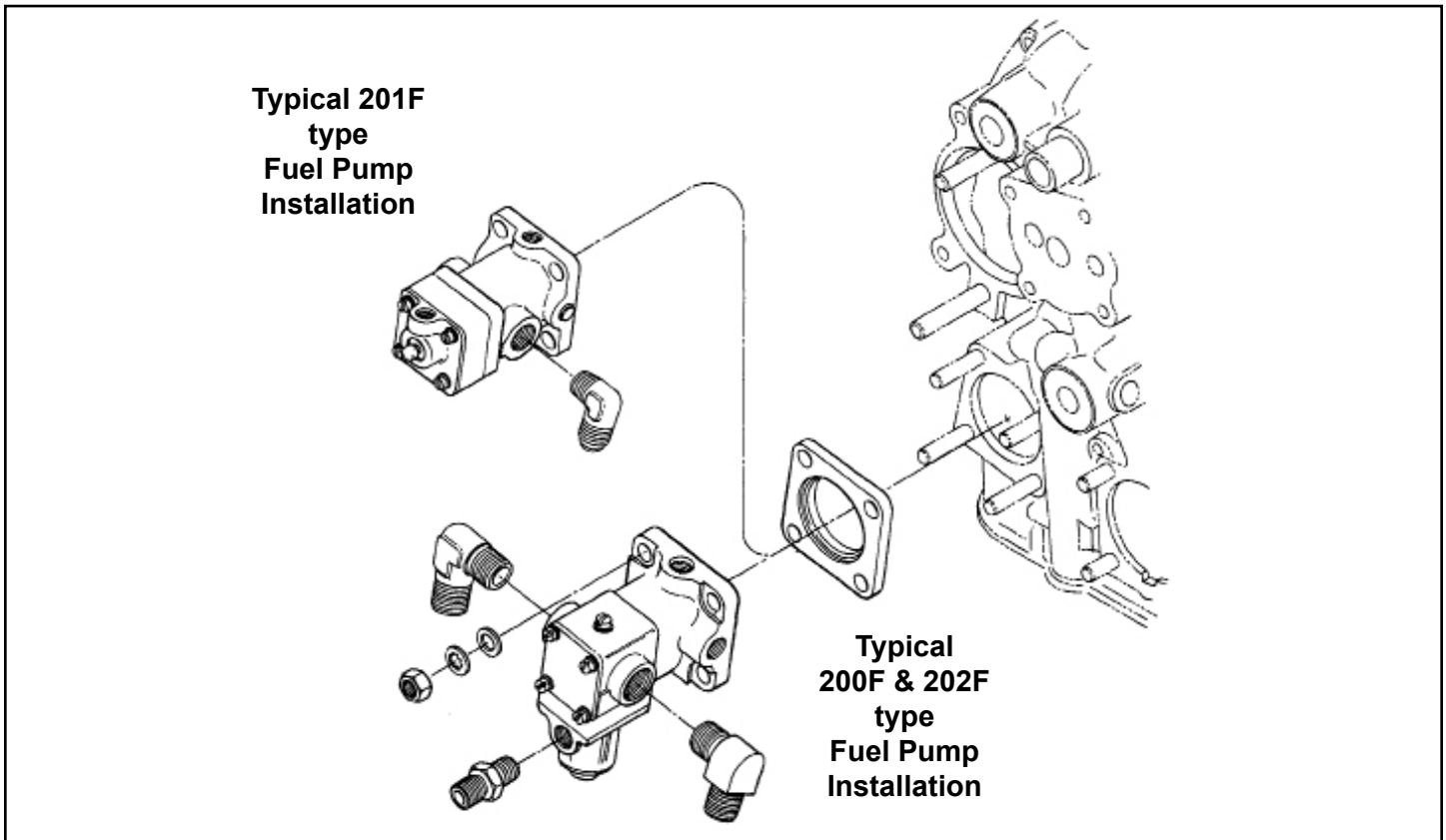


Figure 3 - Typical HET Series Fuel Pumps

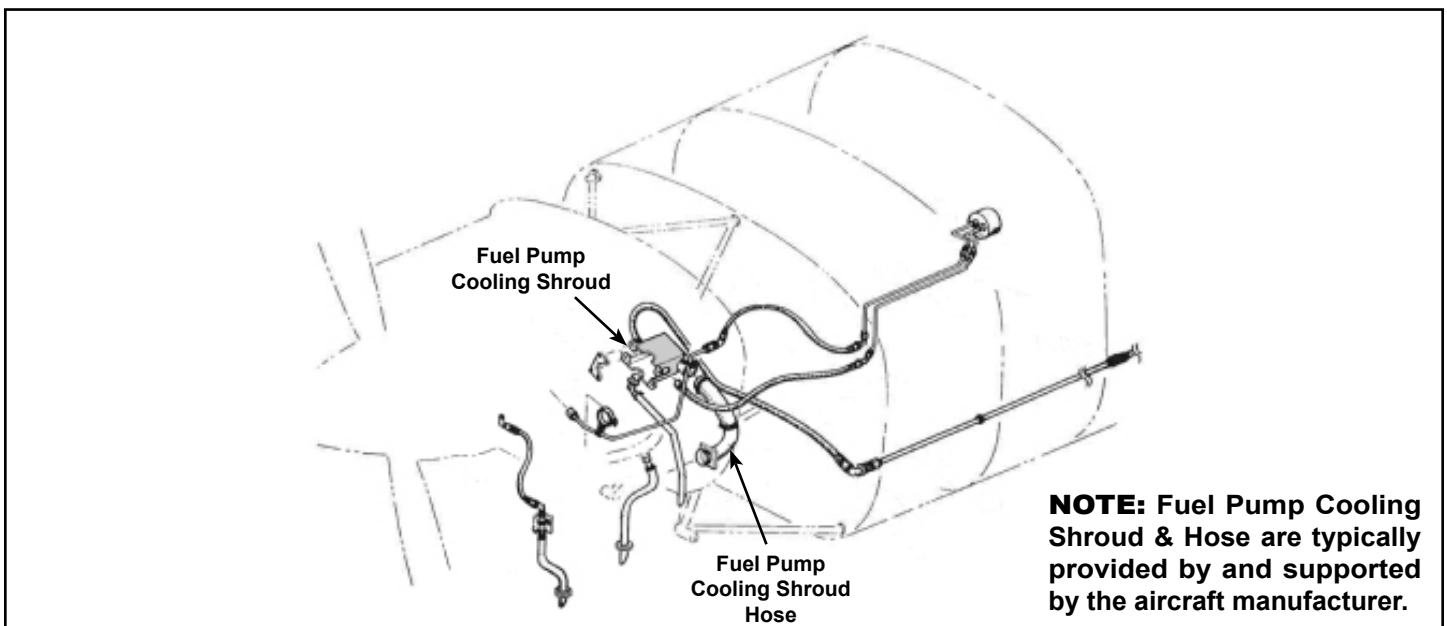


Figure 4 - Typical Cooling Shroud Installation

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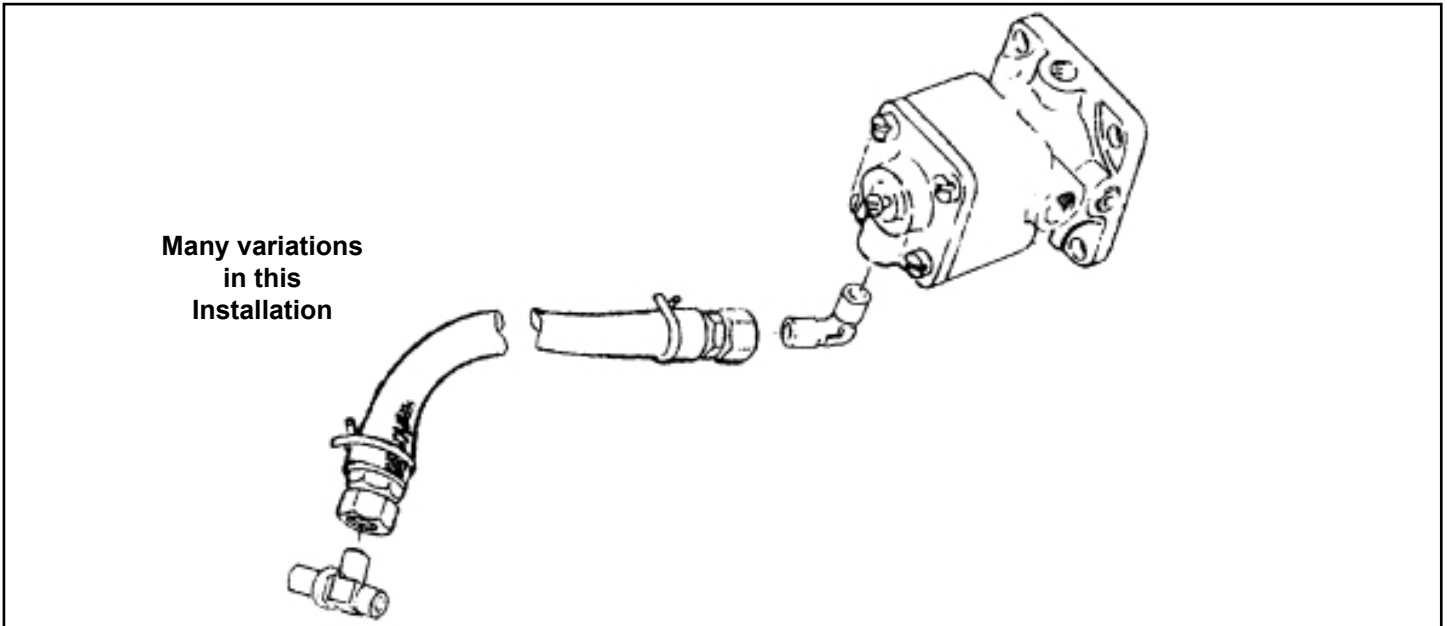


Figure 5 - Typical HET 201F Fuel Pump Plumbed to Upper Deck Reference

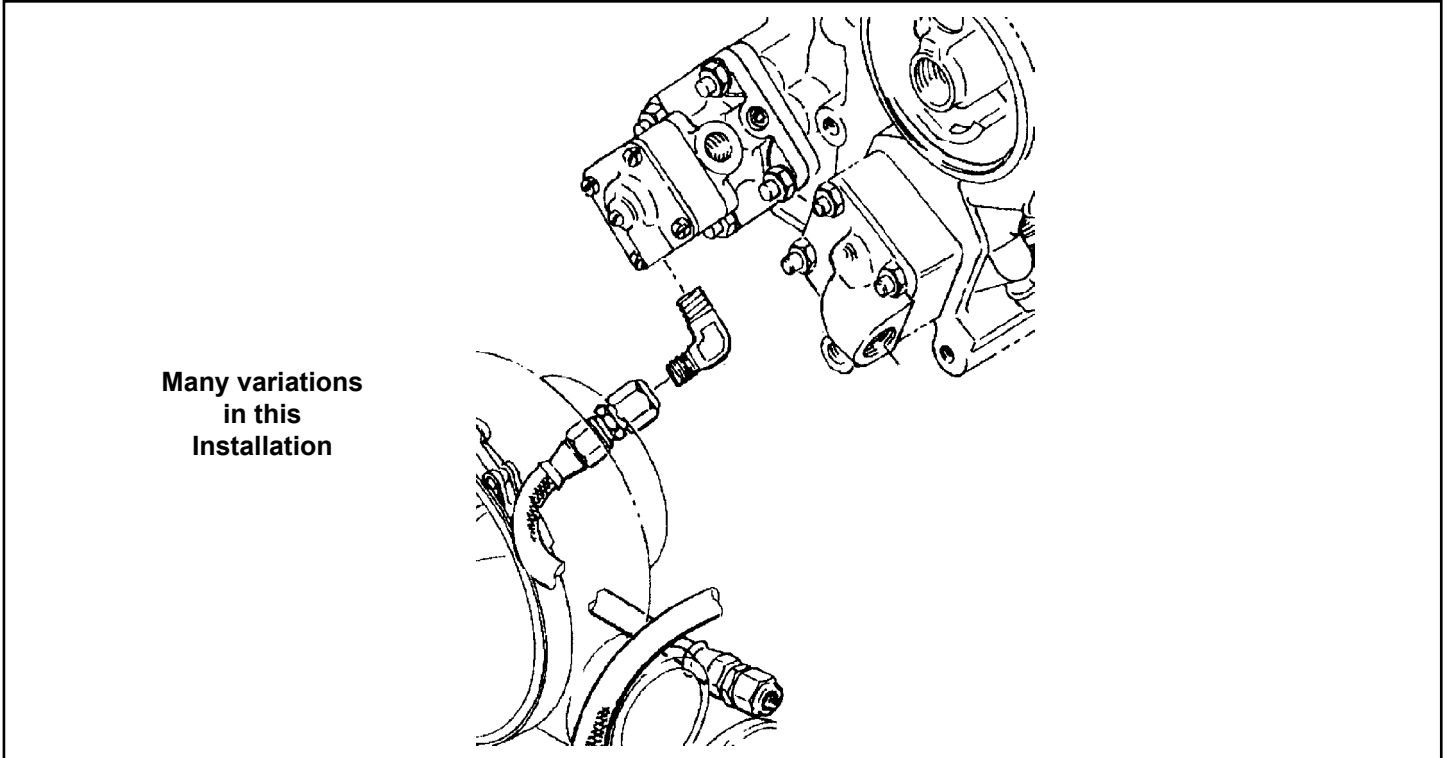


Figure 6 - Typical HET 201F Fuel Pump Turbocharger Reference Line Connection

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Table 2 - Engine Application & Cross Reference*

Part Number HET Fuel Pump	Part Number Lycoming (Ref. Only)	Lycoming Engine Installation Eligibility
200F-5001	62E23185	GO-435; GO-435-C2; GO-435-C2A; GO-435-C2A2; GO-435-C2B; GO-435-C2B1; GO-435-C2B2; GO-435-C2C; GO-435-C2D; GO-435-C2E; GO-435-D1; GO-480; GO-480-A1A; GO-480-B; GO-480-B1; GO-480-B1A6; GO-480-B1D; GO-480-C1D6; GO-480-C2C6; GO-480-C2D6; GO-480-C2E6; GO-480-C3A6; GO-480-E1A6; GO-480-F6; GO-480-F1A6; GO-480-F2A6; GO-480-F2D6; GO-480-F3A6; GO-480-F3B6; GO-480-F4A6; GO-480-F4B6; GO-480-G1A6; GO-480-G1D6; GO-480-G1H6; GO-480-G1J6; GO-480-G2D6; GO-480-G2F6
200F-5002	62E23186	IO-540-K1E5; IO-720-A1A; IO-720-A1B; IO-720-B1B; IO-720-C1B; IO-720-D1B; LTIO-540-F2BD; LTIO-540-J2BD; TIGO-541-D1A; TIGO-541-D1B; TIGO-541-E1A; TIO-360-A3B6; TIO-540-A1A; TIO-540-A1B; TIO-540-A2A; TIO-540-A2B; TIO-540-A2C; TIO-540-AE2A; TIO-540-J2B; TIO-540-U2A
200F-5003	62E23188	TIO-540-AB1AD; TIO-540-AA1AD; LTIO-540-U2A; LTIO-540-J2B
200F-5004	62E23187	IO-540-K1F5D; LTIO-540-W2A; TIO-540-F2BD; TIO-540-J2BD; TIO-540-N2BD; TIO-540-R2AD; TIO-540-T2AD; TIO-540-V2AD
200F-5005	62E23189	IO-720-A1B; LTIO-540-V2AD; TIO-540-W2A; TIO-540-AH1A; TIO-540-AJ1A
* The information in Table 2 is provided for reference only. The applicable engine manufacturer's Type Certification information should be consulted as the official source.		

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Table 2 (cont'd) - Engine Application & Cross Reference*

Part Number HET Fuel Pump	Part Number Lycoming (Ref. Only)	Lycoming Engine Installation Eligibility
201F-5001	62D26030	IO-540-G1B5; IO-540-G1D5; IO-540-J4A5; IO-540-R1A5; IO-720-A1A; IO-720-A1B
201F-5002	62D26031	IO-720-A1A; IO-720-A1B
201F-5003	62D26032	IO-540-G1C5; IO-540-K1A5; IO-540-K1B5; IO-540-K1F5; IO-320-CIA; IO-320-F1A
201F-5004	62D26033	IO-360-A1B; TIO-360-A1B
201F-5005	62D26034	IO-540-A1A5; IO-540-G1B5; IO-540-G1D5; IO-540-K1C5; IO-540-K1D5; IO-540-K1F5; IO-540-L1A5; IO-540-P1A5; IO-360-B1D; TIO-540-A2B; TIO-540-C1A; TIO-540-E1A; TIO-540-G1A; TIO-540-H1A
201F-5006	62D26035	IO-540-K1A5D; TIO-540-AA1AD; LIO-320-C1A
201F-5007	62D26036	IO-540-M2A5D; TIO-540-AA1AD; TIO-540-AB1AD
201F-5008	62D26037	TIO-540-AF1A; TIO-540-AF1B
202F-1001	62E22586	AEIO-540-D4D5
	Beechcraft P/N 50-389141-1	56TC; A56TC;60; A60; B60
202F-1002	62E22585 / LW-19012	TIO-540-S1AD
* The information in Table 2 is provided for reference only. The applicable engine manufacturer's Type Certification information should be consulted as the official source.		

NOTE: 200F Fuel Pump P/N 200F-5006 (Lycoming P/N 62E23190) and P/N 200F-5007 (Lycoming P/N 62E23191-Y) are a Lycoming installation. Application information for these fuel pumps must be obtained from Lycoming.