

**TELEDYNE CONTINENTAL® AIRCRAFT ENGINE  
CRITICAL SERVICE BULLETIN**

**Compliance Necessary To Maintain Safety**

**CATEGORY 2**

**CSB01-1  
TECHNICAL PORTIONS  
FAA APPROVED**

**SUBJECT: FUEL PUMP INSPECTION and SEAL LEAK TEST**

**PURPOSE: To Provide A Leak Test Procedure to Insure Integrity Of Basic Fuel Pump Fuel Seal on Fuel Pump Assemblies Manufactured Between July 1, 1998 And May 31, 2000.**

**COMPLIANCE:**

- 1. At the earliest opportunity, but within the next 25 hours of engine operation for fuel pump assemblies with less than 300 hours total time in service, perform the seal leak test per Part A.**
- 2. Anytime fuel flow indications fluctuate or engine fuel flows do not meet the AFM/POH published specifications, perform the fuel pump seal leak test per Part A.**

**MODELS**

**AFFECTED: IO-240, IO-360, IO-346, O-470-G7, O-470-G10, O-470-GCI, IO-470, GIO-470, IO-520, LIO-520, IO-550, GIO-550, LTSIO-360, TSIO-360, TSIO-470, TSIO-520, TSIO-550, TSIOL-550, GTSIO-520 model engines with P.N 642932-1, 2, 3 & 4 basic fuel pump<sup>①</sup> manufactured between July 1, 1998 and May 31, 2000<sup>②</sup>.**

**Any of the above listed engine models that have had a new or rebuilt engine driven fuel pump installed between July 1, 1998 and November 26, 2000.**

**Any of the above listed engine models that have had an engine driven fuel pump overhauled using P/N 642932-1, 2, 3 or 4 basic fuel pump between July 1, 1998 and November 26, 2000.**

- ① Refer to Figures 1 and 2**
- ② Engines delivered from TCM between July 1, 1998 and November 26, 2000, See GENERAL INFORMATION section of this CSB.**

**GENERAL INFORMATION:**

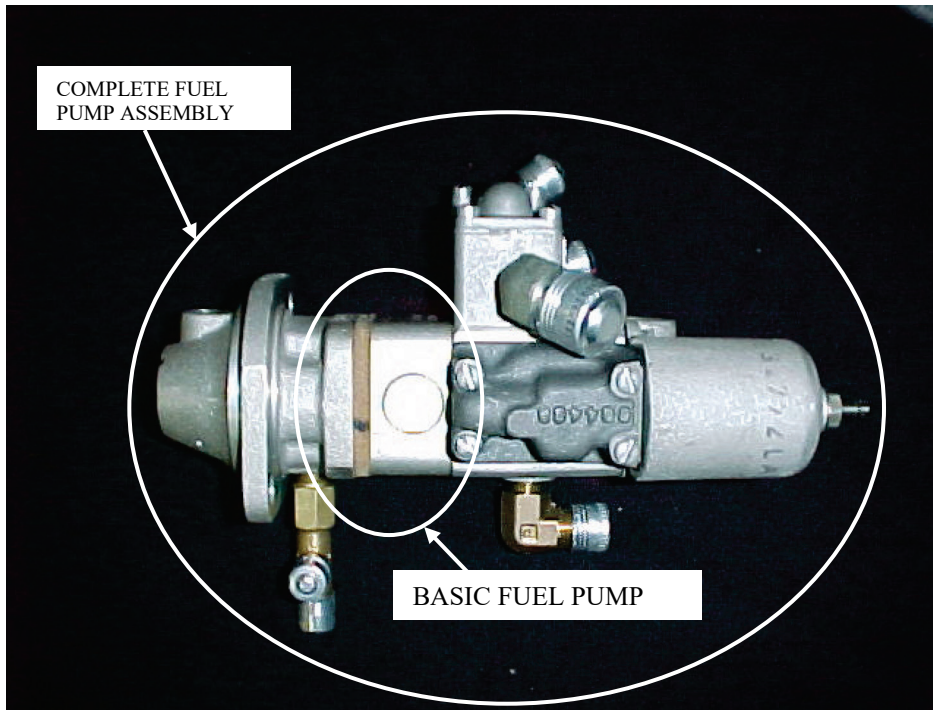
Teledyne Continental Motors has received reports of fuel being discharged from the engine driven fuel pump seal overboard drain. Additionally, isolated reports of engine fuel flow fluctuations and/or a reduction in engine fuel flow have been received.

Fuel pump seal drain leak observations have been noted during operation of the aircraft fuel boost pump during engine priming, prior to

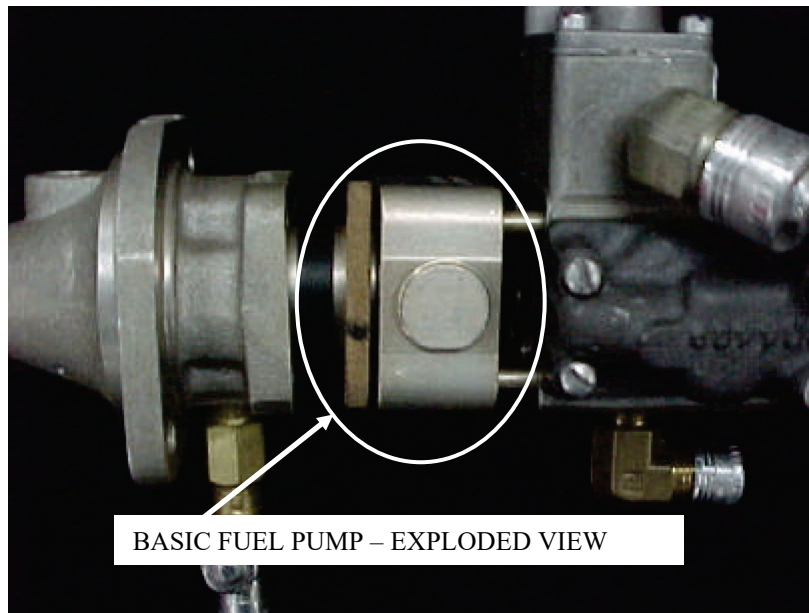
engine start. Once the engine has started and is operating, with the aircraft fuel boost pump OFF, fuel does not leak from the engine driven fuel pump seal overboard drain.

However, significant fuel flow fluctuations or reductions in engine fuel flow may result in a reduction of engine performance due to air ingestion if the basic fuel pump seal has moved from its originally installed and seated position or has been mechanically damaged.

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**FIGURE 1  
FUEL PUMP ASSEMBLY COMPLETE  
(TYPICAL)**



**FIGURE 2  
FUEL PUMP ASSEMBLY EXPLODED VIEW  
(TYPICAL)**

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**WARNING**

Failure to comply with this service bulletin may result in a reduction in or loss of engine power.

**GENERAL INFORMATION:**

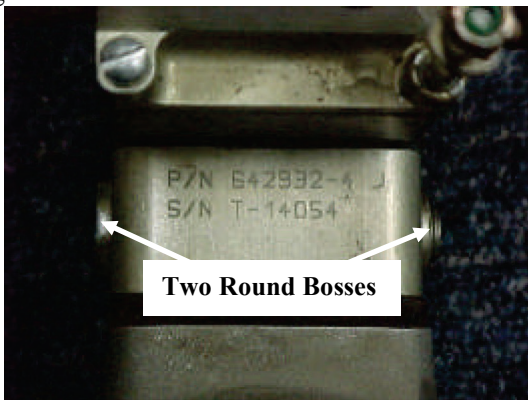
This Service Bulletin provides instructions for performing a fuel seal leak test on engine driven fuel pump assemblies installed on engines listed in the "Models Affected" section of this Service Bulletin.

Affected fuel pump assemblies were manufactured between July 1, 1998, and May 31, 2000. The affected fuel pump assemblies may be installed on new and rebuilt engines delivered from TCM between July 1, 1998, and November 26, 2000. Additionally, affected fuel pump assemblies were sold individually as a service spare part or were included as a component part of a complete fuel injection system or EQ Kit.

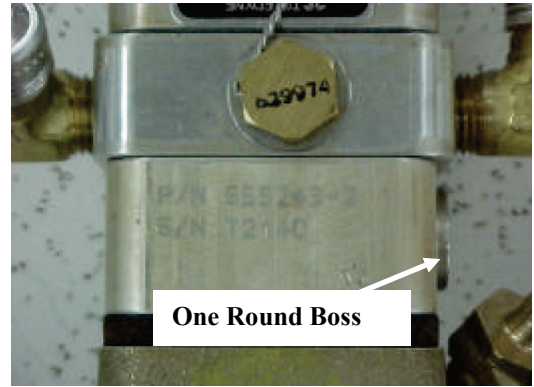
If your engine driven fuel pump assembly was replaced, repaired, or overhauled during the dates listed above, this Critical Service Bulletin may affect you.

Affected engine driven fuel pump assemblies were manufactured utilizing basic fuel pumps P/N's 642932-1, 642932-2, 642932-3 and 642932-4. These basic fuel pumps may be identified by the presence of two (2) round bosses located on opposite sides of the basic fuel pump housing. Refer to Figure 3.

New basic fuel pumps P/N's 655243-1, 655243-2, 655243-3 and 655243-4 having only one round boss are not affected by this service bulletin. Refer to Figure 4.



**FIGURE 3**  
**Affected Basic Fuel Pump**  
**P/N's 642932-1, -2, -3, & -4**



**FIGURE 4**  
**Current Production Basic Fuel Pump**  
**P/N's 655243-1, -2, -3, & -4**  
 (basic fuel pumps with one round boss are not affected by this bulletin)

**PART A: BASIC FUEL PUMP SEAL LEAK TEST PROCEDURE**

**NOTE:** Refer to the appropriate aircraft manufacturer's maintenance manual for the location of the fuel injection system connections and drains.

The following procedure should be used to check integrity of engine driven fuel pump assembly basic pump fuel seal. An assistant will be required to visually inspect the induction system drains for fuel.

1. Locate the engine driven fuel pump assembly basic fuel pump seal overboard drain tube that exits the engine lower cowling.



**FIGURE 5**  
**Fuel Pump Overboard Drain Tube**  
**(Typical)**

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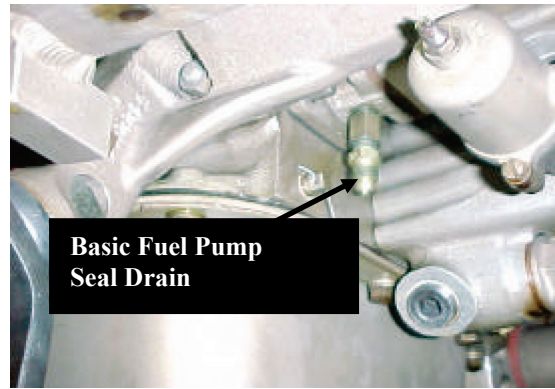
**NOTE:** The engine driven fuel pump assembly basic fuel pump seal drain may be teed into induction system drain(s) prior to exiting the engine lower cowling.

2. Place the Throttle in the CLOSED position and the Mixture Control in IDLE CUTOFF.
3. Insure that the Ignition Switch is in the OFF position.
4. Insure that all electrical equipment is OFF.
5. On aircraft with retractable landing gear, insure that landing gear selector in in the DOWN position.

**WARNING**

**DO NOT PERFORM THIS TEST ON A HOT ENGINE. PERFORMING THIS TEST WILL RESULT IN FUEL BEING INJECTED INTO THE ENGINE CYLINDERS. DO NOT ATTEMPT TO START THE ENGINE FOR AT LEAST 15 MINUTES AFTER COMPLETING THIS TEST TO ALLOW SUFFICIENT TIME FOR FUEL TO DRAIN FROM CYLINDERS AND INDUCTION SYSTEM. FAILURE TO ADHERE TO THIS WARNING MAY RESULT IN AN ENGINE FIRE OR CYLINDER HYRDOSTATIC LOCK.**

6. Turn the aircraft Master Switch ON.
7. Turn the aircraft electric fuel boost pump ON, to the high position.
8. Have an assistant observe the engine driven fuel pump assembly basic fuel pump seal overboard drain tube for evidence of fuel discharge. See Figure 5.
9. If there is no visible indication of fuel being discharged from the fuel pump assembly basic fuel pump seal overboard drain tube make an engine logbook entry verifying compliance with TCM CSB01-1.
10. If there is visible discharge of fuel from the engine driven fuel pump assembly basic fuel pump seal overboard drain tube proceed to step 11.
11. Locate the engine driven fuel pump assembly basic fuel pump seal drain tube connection at the engine driven fuel pump. Refer to Figure 6.



**FIGURE 6**

**Fuel Pump Seal Drain Connection (Typical)**

12. Isolate the basic fuel pump seal drain by disconnecting the seal drain tube at the fitting. Refer to Figure 6.
13. Repeat steps 6 and 7 having the assistant observe the fuel pump assembly basic fuel pump seal drain fitting at the fuel pump assembly for evidence of fuel discharge.
14. If no fuel discharge is noted, reconnect the fuel pump assembly basic fuel pump seal drain tube. Make an engine logbook entry indicating compliance with CSB 01-1.

**NOTE:** Refer to TCM SB95-5 for correct procedures for loosening and torquing fuel system lines and hose “B” nuts.

15. If fuel discharge is noted, proceed to Part B.

**PART B: FUEL PUMP ASSEMBLY REPLACEMENT**

**NOTE:** To expedite compliance with this Critical Service Bulletin, all orders for replacement fuel pump assemblies are to be placed with the TCM Customer Support Center, Fairhope, Al. Orders may be place by calling 1-888-200-7565. Please have the fuel pump assembly part number, fuel pump assembly serial number (from the fuel pump assembly data plate attached to the vapor separator housing), engine model and serial number, total time on fuel pump and engine available when placing your order.

Refer to the aircraft manufacturer’s maintenance manual and the applicable engine overhaul manual for specific instructions for removing and replacing the engine driven fuel pump assembly.

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Special consideration may be given to operators in remote areas to allow repair of affected fuel pumps by an approved accessory overhaul facility. In this situation, the overhaul facility is directed to reference the latest revision of TCM's Fuel Injection Overhaul Manual form X30593A and TCM service bulletins for specific instructions, dimensional limits and fuel pump flow specifications. Refer to SB 00-10 for specific dimensional limits for fuel seal installation.

After installation of any engine fuel injection system component perform a complete fuel injection system set up and adjustment prior to returning the engine and aircraft to service. Refer to the latest revision of TCM Service Information Directive SID 97-3.

Make an engine logbook entry of fuel pump replacement and compliance with TCM CSB 01-1.

**PART C: WARRANTY**

In the event an affected fuel pump assembly requires replacement as a result of this CSB Teledyne Continental Motors will reimburse the owner/operator or FBO the invoiced cost of a replacement Factory Rebuilt fuel pump upon receipt of the removed, affected fuel pump assembly at Teledyne Continental Motors.

Warranty labor coverage for fuel pump removal, installation and system adjustments will be limited to the number of man hours of labor specified in Table 1 "Approved Labor Allowance" by engine model

**TABLE 1**  
**Approved Labor Allowance**

| ENGINE MODEL | ALLOW LABOR HOURS |
|--------------|-------------------|
| IO-240's     | 2.0               |
| IO-360's     | 2.5               |
| L/TSIO-360's | 2.5               |
| IO-470's     | 4.0               |
| TSIO-470's   | 4.0               |
| IO-520's     | 3.5               |
| L/TSIO-520's | 4.0               |
| GTSIO-520's  | 4.0               |
| IO-550's     | 4.0               |
| TSIO-550's   | 6.0               |
| TSIOL-550's  | 6.0               |
| GIO-550's    | 4.0               |

**PART D: SPECIAL INSTRUCTIONS FOR RETURNING FUEL PUMPS:**

Replacement fuel pumps assemblies are shipped with a special green return label. To insure prompt processing of your warranty claim and the fuel pump assembly core deposit, place the fuel injection pump assembly removed from the engine in the container that held the replacement fuel pump assembly. Place green labels on two sides of the container. Complete any hazardous material documents required prior to shipment.

NOTE: Insure that all residual fuel has been purged from the fuel pump assembly prior to shipment.

Return the removed fuel pump assembly via surface freight to:

TCM Customer Support Center  
Fairhope Airport  
8600 County Road 32  
Fairhope, AL 36532

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