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SERVICE BULLETIN

DATE: MAY 2002 NUMBER: PZL-F/68/2002

CATEGORY: MANDATORY

NAME – TYPE/MODEL: FRANKLIN ENGINE

SERIES / NUMBER: 6A-350-C1R
6A-350-C1L
4A-235-B4
4A-235-B31

REFERS TO: Method of inspecting and repairing of the fuel pump.

TIME OF ACCOMPLISHING: On receipt of this service Bulletin.

Approved by General Inspectorate of Civil Aviation

This Bulletin is the translation from Polish language, made by WSK “PZL-Rzeszów”.

Reason:

There have been several occurrences where the spindle of the flap valve became separated inside the pump. There were also some cases seen of unmodified pumps being installed which could result in oil leakage through the pump.

Recommendations:

A mandatory one time inspection of all fuel pumps installed on the Franklin engines, models 6A-350-C1R, 6A-350-C1L, 4A-235-B4, 4A-235-B31, shall be accomplished on receipt of this Service Bulletin. This inspection shall be made in accordance with the procedure specified below.
This inspection and repair must be performed by qualified maintenance personnel.

PROCEDURE OF INSPECTION AND REPAIR

Removing the pump from an engine:

a. Shut off fuel supply to the pump;
b. Remove any elements making it difficult to access the pump;
c. Disconnect fuel delivery and discharge pipes. Mark their ends and pump connections to avoid their exchange during reinstallation.
d. Remove two screws, which attach the pump in the pump drive casing (26.21.0156 and 26.21.0157). Next, remove the pump.
e. Mark a line through pump external elements with an indelible pen to ensure their proper reinstallation after the inspection.
f. Make the inspection according to the items from 1 to 12.

Inspection criteria:

1. Check the period of pump operation. Any pump being operated over 10 years shall be replaced for a new one.

2. Measure the distance between the lifter and the axis of the pump casing bolt hole (26.21.0157). This distance shall be 23^{+1}mm (0,905-0,945 in) /*Fig. 2*/. If this dimension is higher, the lifter shall be ground to obtain the dimension from 23 mm (0,905 in) to 24 mm (0.945).

3. Disassemble the fuel pump /*Fig. 1*/.

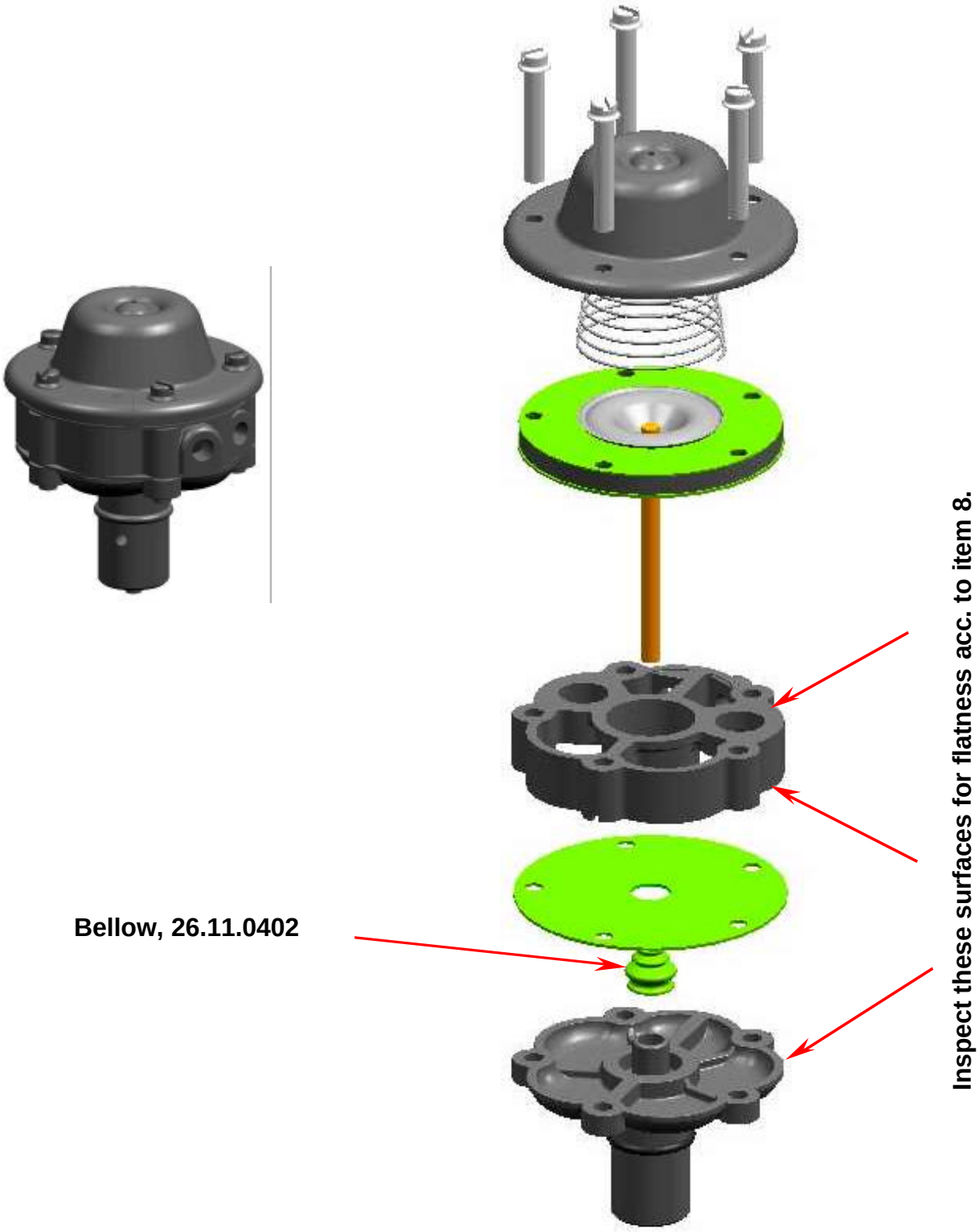


Fig. 1.

4. Check the height of the seating element of the rubber bellow /*see Fig. 2*/. This element shall be $5^{\pm 1}$ (0.157 – 0,236 in). Correct it by milling or filing if necessary.

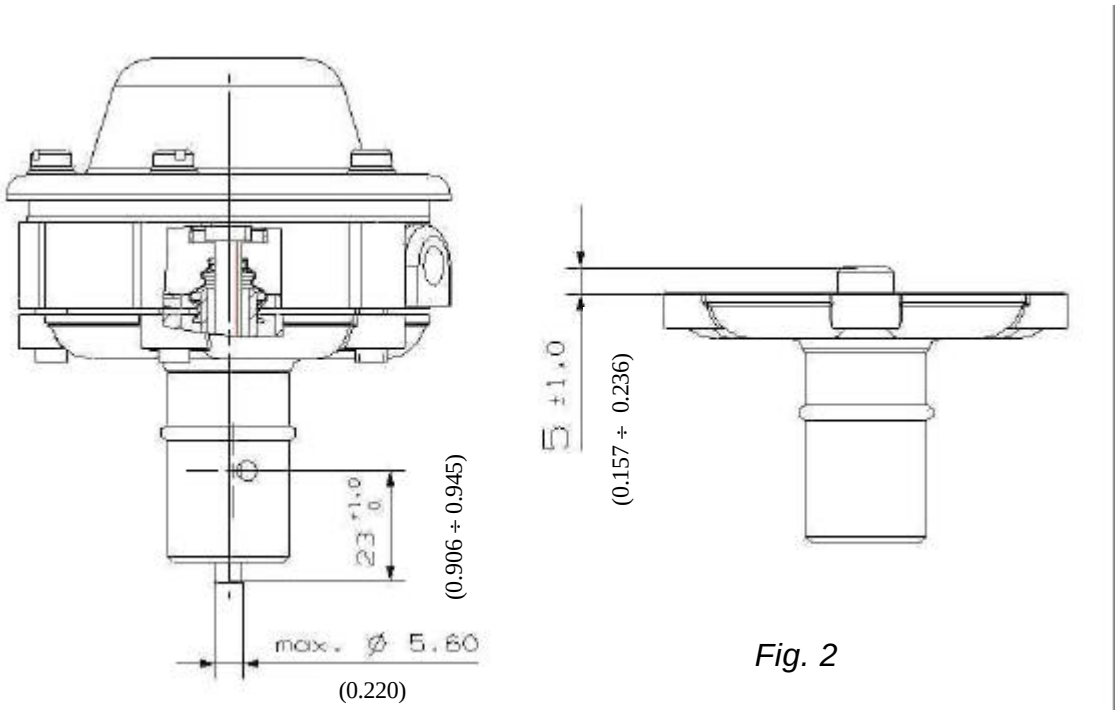


Fig. 2

5. Inspect the pump elements visually for cracks and delamination of rubber and cracks of casing.

6. Measure the lifter thickness. It shall be 5.35±0.05 mm (0,209 ÷ 0,213) of dia. in the area of contacting with the bellow (26.11.0402) at *"L"* distance /see *Fig. 3.*/ and max. of 5.60 mm (0,22) of dia. in remaining areas /*Fig. 2*/. Grind the lifter or replace with a new one if necessary.

7. Measure the height of the cup / see *Fig. 3*., designation "*B*"/. It shall be a max. of 4 mm (0,157) in height. Repair it by grinding or filing if necessary, see *Fig. 3*.

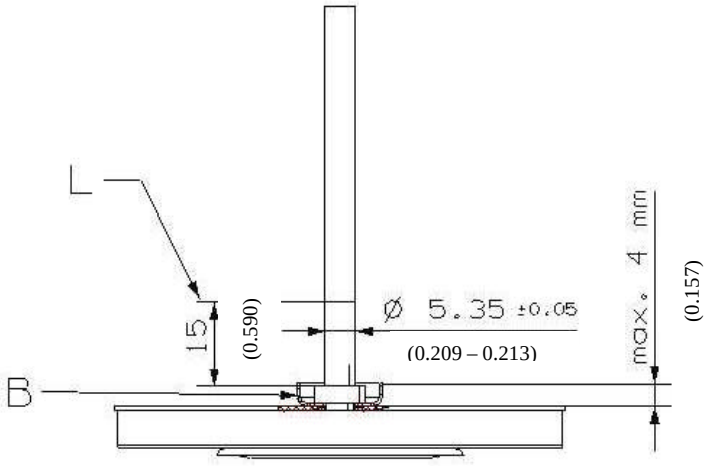
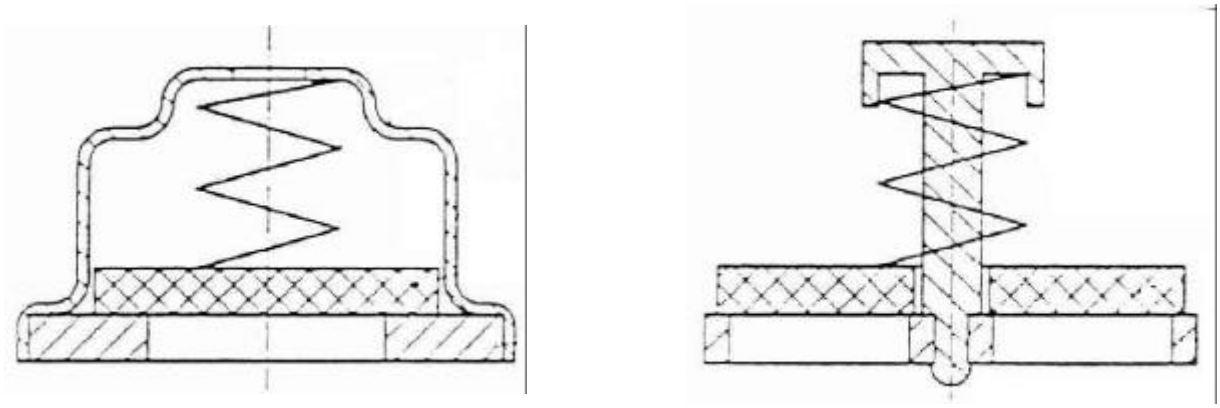


Fig. 3

8. Check pump sealing surfaces for their condition (flatness) – see *Fig. 1.* Inspect the surface by an ink test. Any breaks in contact areas are not allowed. Repair the elements by grinding or lapping as necessary.

9. Inspect the fuel valves. Only the valves of type **I** are permitted for continued operation. If any valve of type **II** is found, replace the pump. /*Fig. 4*/.



Valve of type „**I**”

Valve of type „**II**”

Fig. 4

10. Inspect the diaphragms for deformation, cracks, or cutting. If any of these conditions are found, replace the pump with a new one.

11. Inspect the bellow (26.11.0402) for cracks. If any crack is found, replace the bellow with a new one.

12. After checking the pump in accordance to the above items, carefully wash every pump’s element.

REINSTALLATION OF PUMP

- Reassemble the pump.
- Install the pump on the engine. Secure it with the screws (26.21.0156 and 26.21.0157).
- Connect the fuel delivery and discharge pipes.
- Switch on the electrical pump. After two minutes of operation, inspect the unit for fuel leakage. Switch off the electrical pump. Any fuel leakage is not permitted.
- It is recommended to perform an engine ground test observing fuel pressure. Then, inspect the pump visually. Any fuel or oil leakage found on the pump is not permitted.

It is recommended to inspect the aircraft fuel system for its conformance with FAR 23.991, JAR 23.991 and AC 23-11 requirements.
Check the aircraft fuel system and the emergency fuel pump for their proper operation to ensure engine operation in case the fuel pump driven by the engine malfunctions.

END