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# Service Information Letter

Bulletin No. A-111

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## RECOMMENDED SERVICE/INSPECTION FOR CESSNA 402C EXHAUST BY-PASS VALVE ASSEMBLY

### **EFFECTIVITY:**

This bulletin applies only to the Cessna 402C incorporating the Hartzell Engine Technologies (HET) (RAJAY/Garrett) Exhaust By-Pass Valve P/N: 470908-9013 (Cessna P/N: C165006-0107).

**NOTE:** Cessna 340's and 414's also use wastegate P/N: 407908-13; however, they are not subject to this bulletin.

### **REASON:**

HET has become aware that under certain conditions it is possible for the wastegate butterfly valve to bind in the housing due to reduced endplay clearances between the valve and the end bearings. This phenomenon sporadically occurs after numerous short low altitude flights and is due to a resultant accumulation of lead deposits between the valve plate and bushings and/or the shim washers and bushing. A reduction in takeoff power or a problem with the Manifold Pressures sticking between 26 and 29 Hg could occur if this condition is left unattended.

### **DESCRIPTION:**

Refer to supplementary information under "Accomplishment Instructions", below.

### **COMPLIANCE:**

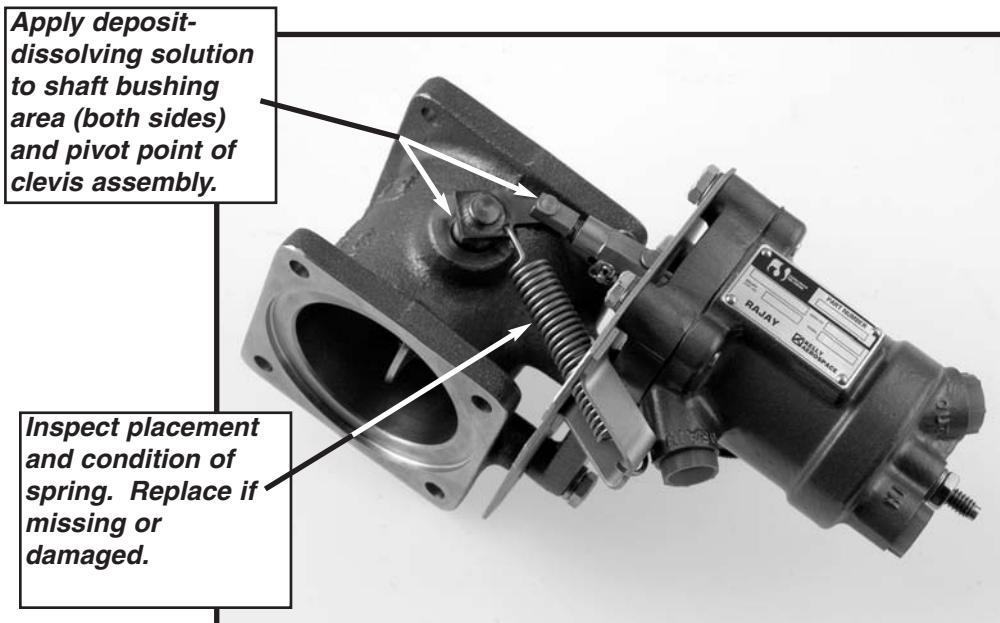
Hartzell Engine Technologies LLC recommends compliance within the next 60 hours (+/- 10 hours for scheduling purposes) of service for exhaust bypass valve assemblies either, (1) now having accrued three hundred (300) hours of service or more as of the date of this Bulletin; or (2) upon reaching 300 hours of service. Thereafter, compliance is recommended at each fifty (50) hour interval.

Compliance is further recommended by Hartzell Engine Technologies LLC, as soon as practical, in the event of an unexplained reduction in MAP or reduction of Takeoff power on Takeoff roll.

## **ACCOMPLISHMENT INSTRUCTIONS:**

- a. Remove engine cowling or reference panels to gain access to the Exhaust By-Pass Valve Assembly.
- b. Apply Mousemilk or Aero Kroil to the bearing surfaces and clevis pivot points during the inspection process. Application of either solution will encourage the removal of unwanted deposits. Lead deposits and carbonized oil (coking) effectively decrease endplay and thereby inhibit the free and unimpeded movement of the wastegate.

**NOTE:** Mouse Milk (Available in 8 ounce and 32 ounce containers at [www.mousemilk.com](http://www.mousemilk.com) (510)-483-5122) or Aero Kroil (Available from Kano Laboratories – [www.kanolabs.com](http://www.kanolabs.com)) are two deposit-dissolving solutions that may be sprayed/applied to the wastegate.



**Exhaust By-Pass Valve shown is for reference only.**

- c. After allowing time for the substance to penetrate the surfaces, it is permissible to lightly strike the wastegate shaft with a non-metallic faced hammer or brass drift to release residual lead deposits that have accumulated between the shims, bushings, or valve.

**NOTE:** Be certain not to strike the arm connecting the clevis adjustment rod to the actuator rod as this could irreparably damage the arm or clevis.

- d. If problem persists, it may be necessary to remove the Exhaust Bypass Assembly from the engine in accordance with the approved aircraft maintenance instructions.
  1. With the assembly removed from the airframe, use a dial indicator to determine whether sufficient endplay exists in the butterfly shaft/valve assy. Indicated endplay should be a minimum of 0.015 to a maximum of 0.027 travel. The unit may be reinstalled on the airframe if the endplay falls within these tolerances.

**NOTE:** In order to achieve accurate endplay measurements, it will be necessary to disengage the tension spring from the heat shield and the cotter pin (P/N: 400143-0096) and clevis pin (P/N: 400142-0811) from the clevis that is connected to the wastegate arm.

2. If endplay falls below the minimum of 0.015, repeat the process in steps b and c above and take a second reading of endplay travel to determine if the shaft moves a minimum of 0.015.
  3. The unit must be repaired or overhauled by an authorized Repair Station if it fails to meet the parameters specified in this document.
- e. Document all service activity in the aircraft maintenance log.

For questions concerning these instructions or for availability of Exhaust Bypass Valve Assembly service parts, please contact Hartzell Engine Technologies Service Department at (888) 461-6077.