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# MANDATORY

# SERVICE BULLETIN

DATE: February 20, 2025 Service Bulletin No. 648C  
(Supersedes Service Bulletin No. 648B)

Engineering design data in this service document is FAA approved.

SUBJECT: Wastegate Solenoid Valve Inspection and Cleaning

MODELS AFFECTED: TEO-540-C1A

TIME OF COMPLIANCE: During each scheduled oil change

REASON FOR REVISION: Added new NOTICE and steps 6 and 7 to the procedure for Helicoil® inspection. Added sentence that S.B provides ICA.

**NOTICE:** Incomplete review of all the information in this document can cause errors. Read the entire Mandatory Service Bulletin to make sure you have a complete understanding of the requirements.

**This Service Bulletin provides Instructions for Continued Airworthiness (ICA).**

Lycoming has received reports of wastegate solenoid valve screen obstruction resulting in non-desirable wastegate function affecting engine operability. Lycoming is recommending that a wastegate solenoid valve cleaning and inspection maintenance item be completed during each scheduled oil change.

**⚠ CAUTION** AN OBSTRUCTED WASTEGATE SOLENOID VALVE SCREEN AND THE RESULTING EFFECT ON WASTEGATE FUNCTION CAN RESTRICT THE ELECTRONIC ENGINE CONTROL SYSTEM’S (EECS) ABILITY TO LIMIT MANIFOLD PRESSURE. IF THE INDICATED MANIFOLD PRESSURE DOES NOT RESPOND TO THE PILOT’S REDUCTION IN PROPELLER RPM OR A HIGH MANIFOLD PRESSURE (MAP HI) ANNUNCIATOR IS ILLUMINATED, THE PILOT MUST BE PREPARED TO MONITOR AND REDUCE MANIFOLD PRESSURE BY RETARDING THE POWER LEVER OF THE AFFECTED ENGINE. CONTINUED OPERATION IN AN OVERBOOST CONDITION CAN RESULT IN ENGINE DAMAGE OR FAILURE. ONLY RETARD THE AFFECTED ENGINE’S POWER LEVER SUFFICIENTLY TO MAINTAIN POWER AT OR BELOW 52 inHg. AVOID THE COMBINATION OF HIGH RPM AND LOW MANIFOLD PRESSURE SETTINGS ON THE AFFECTED ENGINE TO ASSURE ENGINE COMBUSTION CAN BE MAINTAINED. **IF MANIFOLD PRESSURE LIMITS ARE EXCEEDED, REFER TO THE AIRPLANE FLIGHT MANUAL (AFM), SECTION 3, CHAPTER 2 FOR COMPLETE IN-FLIGHT PROCEDURES.**

**Cleaning and Inspection Procedure:**

1. Remove the wastegate solenoid valve from the engine in accordance with instructions in Chapter 72-40 of the latest revision of the TEO-540-C1A Engine Maintenance Manual.

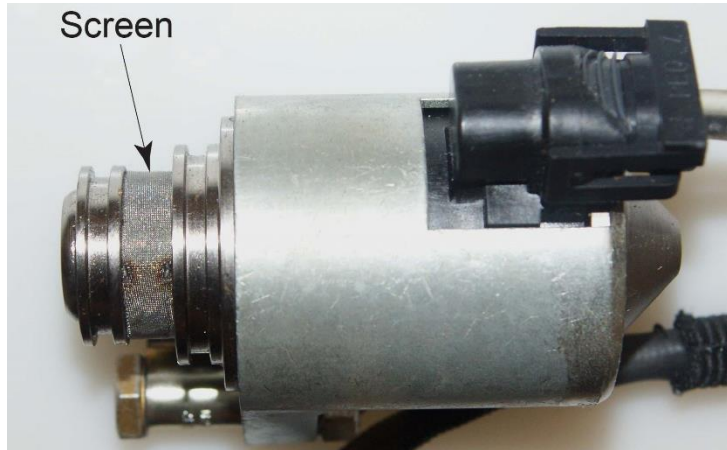
**⚠ WARNING** DO NOT SMOKE OR HAVE AN OPEN FIRE/FLAME OR USE ANY DEVICE THAT CAN MAKE SPARKS DURING CLEANING AND INSPECTION. FLAMES OR SPARKS CAN CAUSE FUEL IGNITION WHICH CAN CAUSE SERIOUS BURNS, INJURY, OR DEATH.

ALWAYS WEAR PROPER PERSONAL PROTECTIVE EQUIPMENT (PPE) WHEN USING AVGAS OR MINERAL SPIRITS.



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- Hand-wipe the wastegate solenoid valve screen (Figure 1) with a clean lint-free cloth soaked with Avgas or Mineral Spirits as necessary to remove any accumulated debris. **Do not use compressed air to clean the screen or the solenoid outlet.**



**Figure 1**  
**Wastegate Solenoid Valve Screen**

- Inspect the wastegate solenoid valve screen to ensure there is no debris or cloth fibers remaining on the full circumference of the screen. If all debris cannot be removed from the screen, replace the wastegate solenoid valve.
- Inspect the wastegate solenoid valve screen for damage. If the screen is damaged, the wastegate solenoid valve must be replaced.
- Inspect the wastegate solenoid valve O-rings for damage or wear. If the O-rings are damaged or worn, replacement of two (2) O-rings P/Ns MS28775-018 and MS28775-021 is required.

**NOTICE:** TEO-540-C1A engines shipped from Lycoming will have a Helicoil® installed at this location upon the release of SB648C. Installation of the Helicoil® on in-service engines will add protection for the threads in the accessory housing from becoming damaged due to regular removal and installation of the bolt securing the solenoid valve.

- Inspect the threaded hole for the bolt that secures the wastegate solenoid valve to the accessory housing.
- If no Helicoil® is installed, install a new 1/4-20 NC Helicoil® per the latest revision of Service Letter No. L162.

**NOTICE:** When installing a new wastegate solenoid valve, new O-rings must be used in accordance with Chapter 72-40 of the TEO-540-C1A Engine Maintenance Manual.

- Install the wastegate solenoid valve on the engine in accordance with instructions in Chapter 72-40 of the latest revision of the TEO-540-C1A Engine Maintenance Manual.
- Complete an engine run-up in accordance with the latest revision of Lycoming Service Bulletin No. 480 and the Airplane Flight Manual (AFM). After engine run-up inspect for oil leaks and correct as necessary. Any oil leak at the wastegate solenoid valve will require replacement of the two (2) O-rings.

If you have any questions, contact Lycoming Technical Support by phone at 570-327-7222 or 877-839-7878 or email to [Technicalsupport@lycoming.com](mailto:Technicalsupport@lycoming.com).

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