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# SERVICE INSTRUCTION

DATE: May 18, 2022

Service Instruction No. 1583  
Engineering Aspects are FAA Approved

SUBJECT: Front Expansion Plug Replacement

MODELS AFFECTED: All Lycoming opposed series engines using a front expansion plug

TIME OF COMPLIANCE: As necessary when front expansion plug replacement is required

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

This Service Instruction provides detailed instruction for replacement of the front expansion plug for engines without a model-specific engine maintenance manual. Engines with a model specific engine maintenance manual will have this information in the published engine maintenance manual.

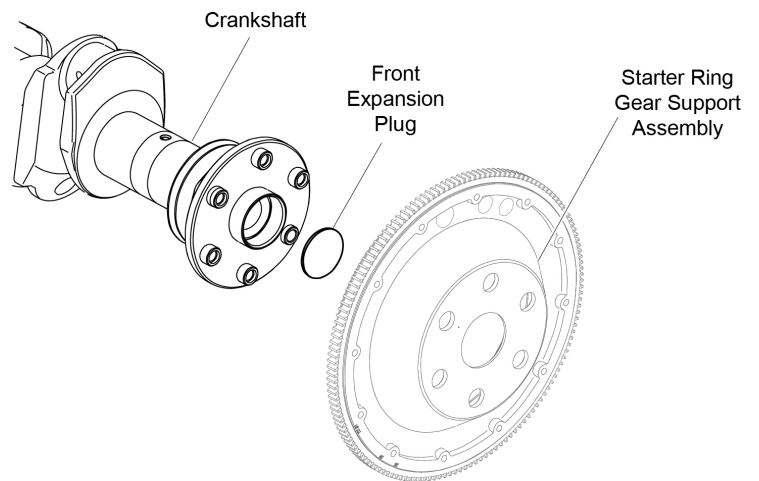
**NOTICE:** Engines are shipped from the factory with the expansion plug installed in the crankshaft. The expansion plug is removed during engine installation when a constant speed propeller is used.

## Expansion Plug Removal

1. As necessary, remove the spinner assembly and the propeller in accordance with the applicable airframe maintenance manual.

**CAUTION** DO NOT DRILL THE EXPANSION PLUG OR USE A MAGNET TO REMOVE THE PLUG OR ANY LITTLE PIECES OF PLUG REMNANTS. ALWAYS POSITION THE PUNCH OR SHARP TOOL IN THE CENTER OF THE EXPANSION PLUG TO PREVENT DAMAGE TO THE INNER SURFACE OF THE CRANKSHAFT WHICH WILL REQUIRE REPLACEMENT OF THE CRANKSHFT.

2. Use a suitable 1/2 in. (12.7 mm) to 3/4 in. (19.1 mm) diameter punch and hammer, strike the center of the expansion plug to a concave shape in the crankshaft. This will loosen the plug to enable removal.
3. Use a sharp tool to punch a 1/8 in. (3.2 mm) to 3/16 in. (4.8 mm) hole in the center of the front expansion plug (Figure 1). Use a hook or bent rod to pull out the plug. Discard the expansion plug.
4. Clean the inner surface of the crankshaft with a clean cloth soaked with acetone to remove any little pieces of plug remnants, sealant, oil, and debris.



**Figure 1**  
**Front Expansion Plug**

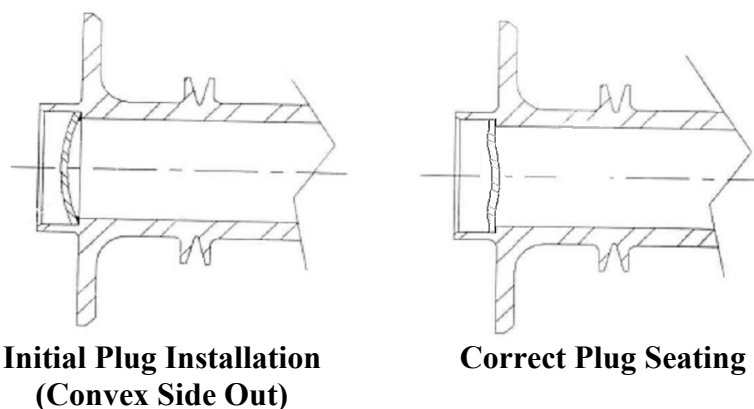


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## Expansion Plug Installation

**NOTICE:** Refer to the applicable Illustrated Parts Catalog for the expansion plug part number.

1. Clean the outside diameter of the new expansion plug with a clean cloth soaked with acetone and allow to dry.
2. Clean the inside diameter of the shoulder in the crankshaft bore with a clean cloth soaked with acetone and allow to dry.
3. Use a flashlight to examine the inside of the crankshaft to ensure that there is no debris or gasket sealant to ensure a good seal when the new bead of gasket sealant is applied in the next step
4. Apply a bead of Loctite® Aviation Gasket Sealant or equivalent to the perimeter of the new expansion plug.
5. Seat the new expansion plug firmly against the shoulder in the crankshaft bore with the convex side out (Figure 2).

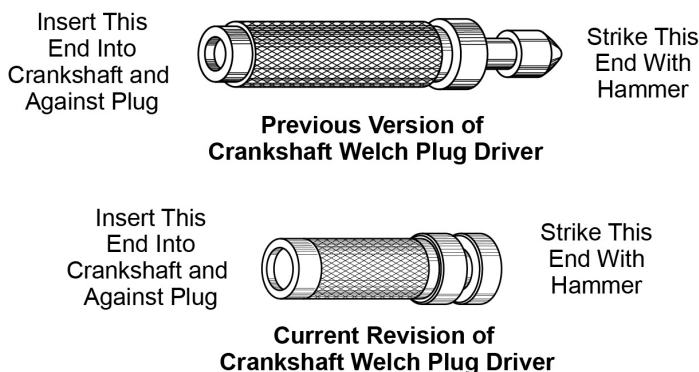


**Figure 2**  
**Installed Expansion Plug**

**NOTICE:** If the crankshaft is not installed in the engine, a driver and a press table can be used to press the expansion plug in the crankshaft bore.

6. Install the Crankshaft Welch Plug Driver P/N 64681 (Figure 3) or equivalent against the expansion plug and strike the opposite end of the driver with a hammer until the expansion plug is correctly seated (Figure 2) in the crankshaft bore. The tool is designed to drive the plug only until it is seated correctly.

Note the difference between the current revision of P/N 64681, available from Lycoming, and the previous version of the tool. The current tool can be purchased or rented by contacting an Authorized Lycoming Distributor.



**Figure 3**

### Lycoming P/N 64681 - Crankshaft Welch Plug Driver

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**NOTICE:** When removing excess gasket sealant use care not to remove any of the gasket sealant between the expansion plug and the crankshaft.

7. Remove excess gasket sealant by gently wiping with a clean cloth and acetone.
8. Install any components removed during the Expansion Plug Removal procedure in accordance with the applicable airframe maintenance manual.
9. Allow 4 hours for the gasket sealant to cure before operating the engine.
10. Complete an engine run-up in accordance with the applicable Airplane Flight Manual (AFM) or Pilot's Operating Handbook (POH). After engine shutdown perform a visual inspection for evidence of oil leakage around the propeller. Correct any oil leaks as necessary.
11. Record replacement of the front expansion plug and all maintenance completed in the engine maintenance records.

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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