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Service Bulletin

Service Bulletin No. 061

Alternator Model ALU-6539-4 Installation of Missing Spacer

1. Planning Information

A. Effectivity

- (1) Hartzell Engine Technologies LLC (HET) Alternator model ALU-6539-4 (Piper P/N 680-516) with serial numbers listed in Table 1 are affected by this Service Bulletin.
- (2) The affected alternators are used on Piper PA-46-350P Malibu Mirage and PA-46R-350T Matrix aircraft.

**Table 1: Alternator Model ALU-6539-4 (Piper P/N 680-516),
Affected Serial Numbers**

H-O071510	H-O071511	H-O071512	H-O071513	H-O071514	H-O071515
H-O071516	H-O071517	H-O071518	H-O071519	H-O090194	H-O090195

WARNING: DO NOT USE OBSOLETE OR OUTDATED INFORMATION. PERFORM ALL INSPECTIONS OR WORK IN ACCORDANCE WITH THE MOST RECENT REVISION OF THIS SERVICE BULLETIN. THE INFORMATION CONTAINED IN THIS SERVICE BULLETIN MAY BE SIGNIFICANTLY CHANGED FROM EARLIER REVISIONS. FAILURE TO COMPLY WITH THIS SERVICE BULLETIN OR THE USE OF OBSOLETE INFORMATION MAY CREATE AN UNSAFE CONDITION THAT MAY RESULT IN DEATH, SERIOUS BODILY INJURY, AND/OR SUBSTANTIAL PROPERTY DAMAGE. REFER TO THE HET WEBSITE FOR THE MOST RECENT REVISION LEVEL OF THE SERVICE BULLETIN.

B. Concurrent Requirements

- (1) None

C. Reason:

- (1) Certain serial numbers of Alternator model ALU-6539-4 (Piper P/N 680-516) were shipped with the pulley installed, but were missing the HET P/N ALK-0050 spacer.
- (2) An HET P/N ALK-0050 spacer is required to be installed on the rotor shaft of the affected alternators.
- (3) Regulatory action is unknown.

D. Description

- (1) This Service Bulletin provides Instructions for Continued Airworthiness (ICA).
- (2) This Service Bulletin is being issued to require installation of a missing HET P/N ALK-0050 spacer on the rotor shaft of affected serial number ALU-6539-4 (Piper P/N 680-516) Alternators.

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E. Compliance

- (1) Installation of the missing HET P/N ALK-0050 spacer on the rotor shaft of an affected alternator is required at the next regularly scheduled maintenance event or annual inspection, whichever occurs first.
- (2) Compliance with the Accomplishment Instructions in this Service Bulletin is terminating action for this Service Bulletin.

F. Approval

- (1) FAA acceptance has been obtained on technical data in this publication that affects type design.

G. Manpower

- (1) If installed, approximately two (2) man hours are required for the following:
 - a. Removing and reinstalling the alternator pulley.
 - b. Installing the alternator spacer.
 - c. Aligning the alternator belt.

H. Weight and Balance

- (1) No change.

I. Electrical Load Data

- (1) No change.

J. References

CAUTION: DO NOT USE OBSOLETE OR OUTDATED INFORMATION. PERFORM ALL INSPECTIONS OR WORK IN ACCORDANCE WITH THE MOST RECENT REVISION OF A DOCUMENT.

- (1) Applicable Piper Aircraft Maintenance Manual.
- (2) Applicable Piper Aircraft AFM or POH.

K. Other Publications Affected

- (1) None.

2. Material Information*

- A. One (1) each, Spacer, HET P/N ALK-0050.
- B. One (1) each, Woodruff Key, HET P/N X-3832 if required.

* Miscellaneous parts, including the alternator belt, if required, must be obtained through Piper Aircraft.

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3. Accomplishment Instructions

WARNING 1: THIS PROCEDURE MUST BE PERFORMED BY COMPETENT AND QUALIFIED PERSONNEL WHO ARE FAMILIAR WITH ENGINE AND AIRFRAME MAINTENANCE THAT IS SPECIFIC TO THE ENGINE ALTERNATOR SYSTEM. FAILURE TO DO SO MAY RESULT IN ECONOMIC LOSS, EQUIPMENT DAMAGE, AND/OR PHYSICAL INJURY.

WARNING 2: DO NOT USE OBSOLETE OR OUTDATED INFORMATION. PERFORM ALL INSPECTIONS OR WORK IN ACCORDANCE WITH THE MOST RECENT REVISION OF THIS SERVICE BULLETIN (SB) AND THE APPLICABLE AIRCRAFT MAINTENANCE MANUAL AND/OR ENGINE SERVICE INSTRUCTIONS. INFORMATION CONTAINED IN THESE MANUALS OR THIS SB MAY BE SIGNIFICANTLY CHANGED FROM EARLIER REVISIONS. FAILURE TO COMPLY WITH THE SB OR THE USE OF OBSOLETE INFORMATION MAY CREATE AN UNSAFE CONDITION THAT MAY RESULT IN DEATH, SERIOUS BODILY INJURY, AND/OR SUBSTANTIAL PROPERTY DAMAGE. REFER TO THE APPLICABLE ENGINE MANUFACTURER'S PUBLICATIONS AND/OR AIRCRAFT MAINTENANCE MANUAL INDEX FOR THE MOST RECENT REVISION LEVELS.

CAUTION: DO NOT DEPEND ON THIS SERVICE BULLETIN FOR GAINING ACCESS TO THE AIRCRAFT AND ENGINE. ACCESS REQUIRES USE OF THE APPLICABLE MANUFACTURER'S MAINTENANCE MANUALS OR SERVICE INSTRUCTIONS. IN ADDITION, ANY PREFLIGHT OR IN FLIGHT OPERATIONAL CHECKS REQUIRE USE OF THE APPROPRIATE AFM OR POH.

A. Identification (Alternators)

- (1) If positive identification of the alternator serial number CAN be made through the aircraft documentation, and the alternator is affected, proceed to section 3.B Inspection.
- (2) If identification of the alternator serial number CANNOT be made through aircraft documentation, remove the cowling from the engine as prescribed in the latest revision of the applicable Piper Aircraft Maintenance Manual and locate the alternator.
- (3) Locate the alternator data tag and determine if the unit is affected per section 1.A Effectivity.
NOTE: The ALU-6539-4 alternator does not have a cooling fan.
 - a. If the alternator IS NOT affected, proceed to section 3.D(3) for Return to Service.
 - b. If the alternator IS affected, proceed with section 3.B Inspection.

B. Inspection:

- (1) Inspection of an affected alternator for the missing spacer may be accomplished while mounted on the aircraft if the pulley is removed. Remove pulley per section 3.C(1-8) Corrective Action. Refer to Figure 1.
- (2) Using a bright white light, inspect the rotor shaft at the base of the shaft as it enters the drive end housing for the HET P/N ALK-0050 spacer. This spacer will appear as a 0.090 inch washer with a notch cut out to clear the woodruff key.
- (3) If the HET P/N ALK-0050 spacer is missing, proceed to section 3.C Corrective Action.
- (4) If the HET P/N ALK-0050 spacer is installed, proceed to section 3.C(9-12) Corrective Action.

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C. Corrective Action:

- (1) Using the instructions in the Piper Aircraft Maintenance Manual, release tension from the alternator belt and remove the belt from the pulley.
- (2) Use a minimum two (2) inch section of 5/16 inch hex stock or cut a 5/16 inch Allen wrench to create the hex stock tool. Insert the hex stock tool into a 3/8 inch drive 5/16 inch socket.
- (3) Place a 3/8 to 1/2 inch adapter on the socket and attach to a 1/2 inch drive ratchet wrench.
- (4) Place a 15/16 inch nut-top spark plug socket on the pulley nut.
- (5) Insert the 5/16 inch hex stock tool (assembly) into the 5/16 inch rotor shaft socket. Refer to Figure 2.
- (6) Using the 5/16 inch (hex key tool to hold the rotor shaft and an appropriate size wrench on the nut-top spark plug socket, turn the wrench counter-clock wise to remove the rotor shaft nut. Refer to Figure 2.
- (7) Remove the pulley and lockwasher.
 - a. If difficulty removing the pulley is encountered, use a puller tool taking care not to damage the pulley.
- (8) Inspect the HET P/N X-3832 woodruff key carefully for distortion, bends, or damage.
 - a. If damaged, the woodruff key will require replacement before the pulley is reinstalled.
- (9) Place the HET P/N ALK-0050 spacer on the rotor shaft sliding the notch over the woodruff key. Refer to Figure 1.
- (10) Install the pulley, lockwasher, and nut.
 - a. Using an appropriate size wrench on the nut-top spark plug socket hold the pulley nut in place.
 - b. Use the ratchet wrench with the 5/16 inch hex key tool to turn the rotor shaft counter-clock wise to tighten the nut. Refer to Figure 1.
- (11) Make final torque of the rotor shaft nut 35 to 45 ft-lbs (47.45 to 61.01 Nm) using a calibrated torque wrench with the 5/16 inch hex key tool turning the rotor shaft counter-clock wise.
- (12) Install the alternator belt, tension and align per instructions contained in the Piper Maintenance Manual or as provided by Piper Aircraft for the applicable aircraft.

D. Return to Service

- (1) Inspect the alternator installation on aircraft as prescribed in the latest revision of the Piper Aircraft Maintenance Manual.
- (2) Perform the recommended functional tests in accordance with the appropriate Piper Aircraft Maintenance Manual and POH or AFM.
- (3) Using the applicable Piper aircraft Maintenance Manual of the latest revision, install any portion of the aircraft that was removed to gain access.

E. Maintenance Record

- (1) Make an aircraft logbook entry to indicate the completion of this Service Bulletin as applicable noting compliance with this Service Bulletin as terminating action.

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4. Contact Information

A. Contact HET Product Support for all communications regarding the technical content of this Service Bulletin.

(1) Phone +1.334.386.5400 (Option 2)

(2) Fax +1.334.386.5450.

(3) E-mail at techsupport@HartzellEngineTech.com.

(4) Address

Hartzell Engine Technologies LLC
2900 Selma Highway,
Montgomery, AL 36108
USA.

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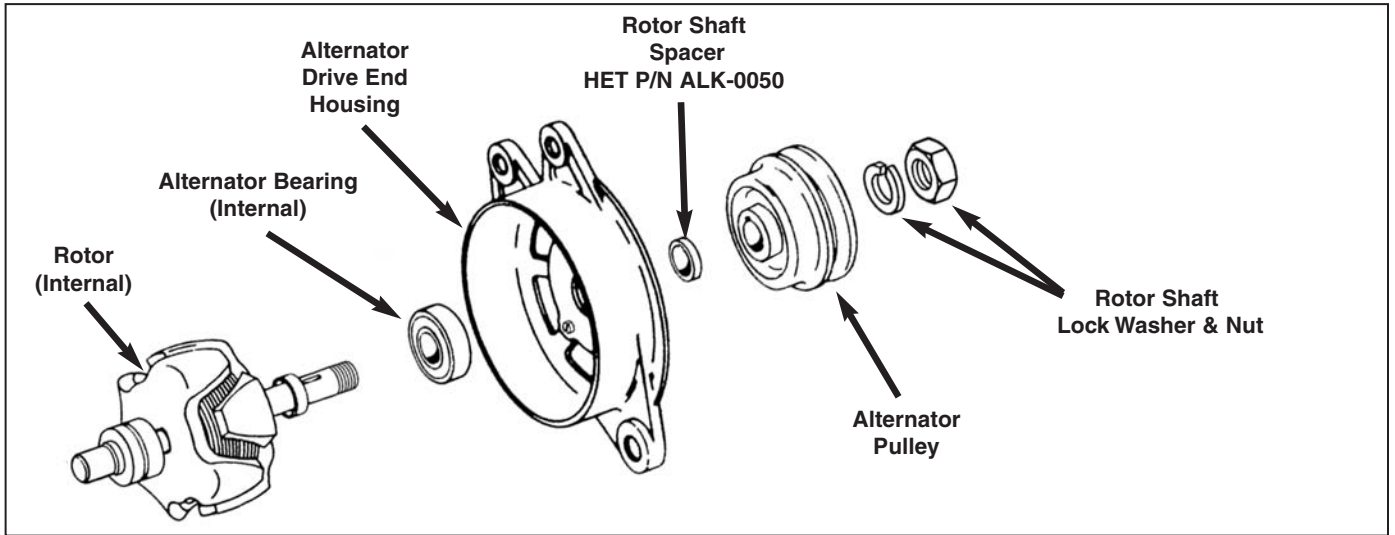


Fig. 1 - ALU-6539-4 Alternator Parts Position

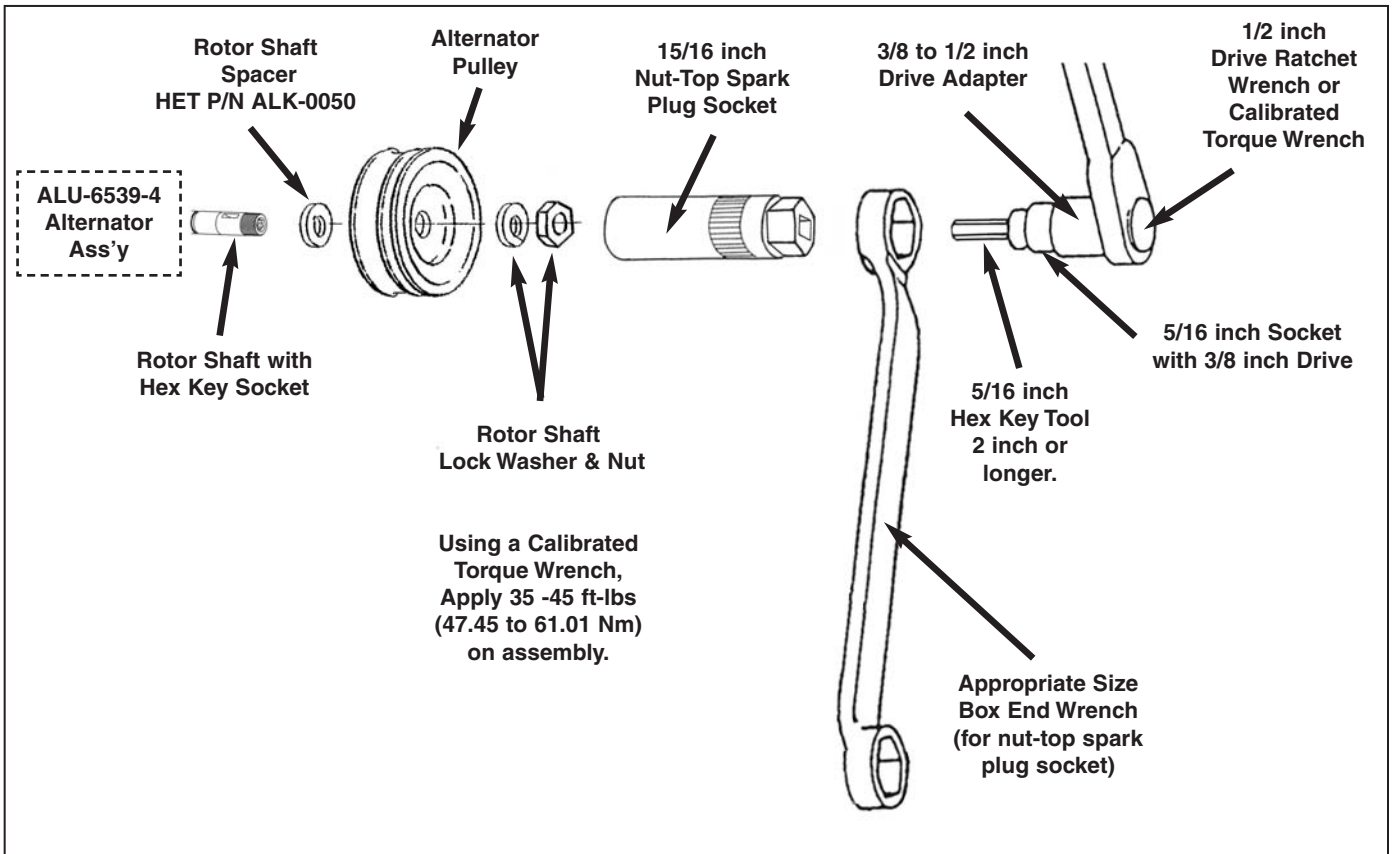


Fig. 2 - Tool Stack for Pulley Removal and Installation

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1. ELIGIBILITY:

- A. ALU-6539-4 (Piper P/N 680-516) alternators with serial numbers listed in Table 1 that are installed in PA46-350P Malibu Mirage or PA46R-350T Matrix aircraft.

2. COMMERCIAL ASSISTANCE PROGRAM:

The following will be provided with the submission of a completed SB 061 Claim Form, copies of invoices showing breakdown of labor charges, material and log book entries. **Any commercial assistance or other consideration shall expire twelve (12) calendar months from the original published date of SB 061.**

- A. If an unused affected alternator assembly is returned to HET, it will be repaired or replaced under HET's limited warranty for components.
- B. Labor for removal & installation of the alternator pulley, belt tensioning and alignment for an affected alternator will be paid at a shop rate of \$75 an hour up to the amount specified below when done at a regularly scheduled maintenance event or annual inspection.
 - (1) Up to two (2.0) hours labor for PA46-350P Malibu Mirage or PA46R-350T Matrix aircraft.
(Labor for installation of missing ALK-0050 Spacer is included in the time above.)

3. COMMERCIAL ASSISTANCE ADMINISTRATION:

- A. Complete the Service Bulletin SB 061 Claim Form attached to this appendix.
 - (1) Mail, e-mail, or fax the SB 061 Claim Form to the attention of Product Support as indicated on the Service Bulletin Claim Form.
- B. Upon receipt of the Service Bulletin Claim Form and affected alternator, Hartzell Engine Technologies LLC will ship one HET P/N ALK-0050 Spacer to the service provider indicated.
- C. For labor and material charges:
 - (1) Aircraft service facility to submit an invoice up to the amount specified in section 2.B and copies of logbook entries for reimbursement.

4. WARRANTY STATEMENT:

- (a) The sole warranty for the actions of SB 061 are contained in the HET Limited Warranty Policy issued with the purchase of each new/overhauled alternators (see terms and conditions therein).
- (b) Commercial assistance may apply as stated in this Appendix.
- (c) Issuance of SB 061 in no way constitutes an implied or expressed warranty of any kind.
- (d) This publication does not imply or state any responsibility for the workmanship of any person or entity performing work or maintenance on the engine or aircraft electrical system.

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5. CONTACT INFORMATION:

A. Contact HET Product Support for all communications regarding the technical content of this Service Bulletin.

- (1) Phone +1.334.386.5400 (Option 2)
- (2) Fax +1.334.386.5450.
- (3) E-mail at techsupport@HartzellEngineTech.com.
- (4) Address

Hartzell Engine Technologies LLC
2900 Selma Highway
Montgomery, AL 36108
USA

6. SHIPPING INFORMATION:

If an unused alternator is being returned, the affected part must be securely packaged so no damage will occur. A copy of the properly completed SB 061 Claim Form for each affected part must be placed inside the shipping container. All parts must be received undamaged and assembled. Address package to Hartzell Engine Technologies LLC, Product Support Department, 2900 Selma Highway, Montgomery, AL 36108, USA. Also mark "PRODUCT SUPPORT DEPT / SB 061 Rev. New" clearly on the outside of the shipping container.

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SB 061 CLAIM FORM

Owner information

Name: _____ Date: _____ Tel: _____ Fax: _____

Company Name: _____ E-mail: _____

Address: _____

City: _____ State: _____ Postal Code: _____

Country: _____

Aircraft/Engine Service Facility information

Name: _____ Date: _____ Tel: _____ Fax: _____

Company Name: _____ E-mail: _____

Address: _____

City: _____ State: _____ Postal Code: _____

Country: _____

Aircraft Mfg: _____ Model: _____ Time in Service: _____ S/N: _____

Engine: _____ Model: _____ Time in Service: _____ S/N: _____

Component Information

Nomenclature: ALU-6539-4 Alternator _____ Part Number: _____

Serial Number: _____ (Alternator) Date Removed: _____

Part Time in Service: _____ (Alternator) Original Date Installed: _____

Send this SB 061 Claim Form to:

Hartzell Engine Technologies Product Support

Fax: +1.334.386.5450

E-mail: techsupport@hartzellenginetech.com

Hartzell Use Only - do not write below this line.

Warranty No: _____ Authorized by: _____