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# Service Bulletin

## Service Bulletin No. 070

### Alternator Model ALV-9510R Rotor Shaft O-Ring and Spacer Replacement

#### 1. Planning Information

##### A. Effectivity

- (1) All Hartzell Engine Technologies LLC (HET) or Kelly Aerospace model ALV-9510R (factory overhaul) alternators in the serial number ranges as shown in Table 1 are affected by this Service Bulletin.
- (2) All Hartzell Engine Technologies LLC / Kelly Aerospace P/N ALV-0210 Rotor Shaft Spacers or P/N 90-2822 service kits delivered by HET/Kelly and installed in alternators between September 20, 2006 through December 07, 2016 are affected by this Service Bulletin.
- (3) All Hartzell Engine Technologies LLC / Kelly Aerospace P/N ALV-0210 Rotor Shaft Spacers or P/N 90-2822 service kits delivered by HET/Kelly from September 20, 2006 through December 07, 2016 in inventory are affected by this Service Bulletin.

**NOTE:** The affected alternators are used in various Continental and Lycoming engine installations. The applicable engine and aircraft manufacturer's Type Certification information should be consulted as the official source of reference.

**TABLE 1 - ALV-9510R Alternator  
 Affected Serial Number Range**

G092892	through	G124252	Kelly S/N
H011982	through	H124934	Kelly S/N
I010054	through	I121877	Kelly S/N
J010231	through	J121658	Kelly S/N
K040080	through	K080914	Kelly S/N
H-K100603	through	H-K121356	HET S/N
H-L011051	through	H-L121144	HET S/N
H-M021788	through	H-M121056	HET S/N
H-N021058	through	H-N120236	HET S/N
H-O010540	through	H-O120899	HET S/N
H-P021062	through	H-P120285	HET S/N
H-Q010967	through	H-Q090747	HET S/N

**WARNING:** DO NOT USE OBSOLETE OR OUTDATED INFORMATION.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) Affected alternator models ALV-9510R may have a condition where the O-ring for the rotor shaft spacer may be sized incorrectly. This condition may exist in rotor shaft spacers manufactured from September 20, 2006 through December 07, 2016.

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- (2) This condition may lead to the loss of alternator drive coupling nut torque.
- (3) Left uncorrected over time, a complete loss of alternator drive coupling nut torque could result in damage to the alternator drive coupling and/or engine drive gear.
- (4) Regulatory action is unknown.

#### D. Description

- (1) This Service Bulletin provides Instructions for Continued Airworthiness (ICA).
- (2) This Service Bulletin requires replacement at the next service interval of the rotor shaft spacer P/N ALV-210 and O-ring (all installed) with rotor shaft spacer HET P/N 41160 and O-ring HET P/N 32B70247A01 in ALV-9510R alternators with serial numbers shown in Table 1 and any serial number with affected kit HET P/N 90-2822 installed between September 20, 2006 through December 07, 2016.

#### E. Compliance

- (1) For ALV-9510R alternators per Effectivity 1.A(1), at the next regularly scheduled inspection or maintenance event, whichever occurs first, replace the rotor shaft spacer and O-ring in accordance with the Accomplishment Instructions of this Service Bulletin.
- (2) Return unused P/N ALV-0210 Rotor Shaft Spacers or P/N 90-2822 service kits delivered by HET/Kelly from September 20, 2006 through December 07, 2016 per Effectivity 1.A(2) to HET per the instructions contained in Appendix I-Commercial Assistance.
  - (a) If placed in service in an ALV-9510R alternator, refer to Compliance (1).
- (3) Compliance with the Accomplishment Instructions in this Service Bulletin is the 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) For alternator removal and installation from the engine:
  - (a) Up to two (2.0) hours labor for Continental Motors, Inc. series engines.
  - (b) Up to two (2.0) hours labor for Lycoming series engines.
  - (c) Up to two & one half (2.5) hours labor for Lycoming TGIO-541 series engines.
- (2) Up to one half (0.5) hour is required for alternator coupling removal, installation, and rotor shaft spacer/O-ring installation when accomplished at regularly scheduled inspection.

#### H. Weight and Balance

- (1) No change.

#### I. 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 aircraft and/or engine maintenance or service manuals.
- (2) Applicable aircraft AFM or POH.

#### J. Other Publications Affected

- (1) The latest revision of HET OE-A2 Alternator & Starter Overhaul & Maintenance manual.

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#### 2. Material Information \*

- A. One (1) each, Rotor Shaft Spacer, HET P/N 41160.
- B. One (1) each, O-Ring, HET P/N 32B70247A01.
- C. One (1) each, Woodruff Key, HET P/N X-0260.
- D. One (1) each, Alternator to Crankcase Gasket of the applicable P/N from the engine manufacturer.  
Optional: One (1) each, Kit, HET P/N 90-2822 (contains above 3 parts plus one ALV-74 washer)

\* Miscellaneous additional parts including the engine drive coupling and/or engine related hardware must be obtained through the applicable engine manufacturer.

#### 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 SERVICE BULLETIN MAY BE SIGNIFICANTLY CHANGED FROM EARLIER REVISIONS. FAILURE TO COMPLY WITH THIS SERVICE BULLETIN OR 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/POH.

##### A. Identification (ALV-9510R Alternator)

- (1) If positive identification of the alternator model number and serial number CAN be made through aircraft documentation and the alternator IS affected, proceed to section 3.B Corrective Action.
- (2) If identification of the alternator model number and serial number CANNOT be made through aircraft documentation, visually inspect the alternator and locate the data tag to determine if the alternator is affected per section 1.A Effectivity.
  - (a) If the alternator IS affected, continue with section 3.B Corrective Action.
  - (b) If the alternator IS NOT affected, no further action is required .
- (3) Maintenance records should be checked to see if the alternator has been overhauled or repaired between the dates in section 1.A(2) Effectivity. If the repair or overhaul could have resulted in the installation of the affected parts, the alternator should be considered suspect.

##### B. Corrective Action:

**NOTE:** The engine drive gear coupling is not part of the ALV-9510R alternator delivered by HET (refer to Fig 1). Continental Motors, Inc. (CMI) and other manufacturers produce the engine drive gear coupling and have instructions for removal and installation. Refer to the latest revision of CMI maintenance manual M-0 for drive coupling service information.

- (1) Remove the affected alternator from the engine in accordance with the applicable aircraft and/or engine maintenance manual or service instruction.

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- (2) Remove the engine drive gear coupling from the affected alternator in accordance with the applicable engine maintenance manual or service instruction.
  - (3) Disassemble the alternator only to the extent that will allow replacement of the O-ring and rotor shaft spacer. Refer to Fig. 1.
    - (a) Remove and discard the woodruff key, HET P/N X-0260.
    - (b) Remove the large washer, HET P/N ALV-74.
    - (c) Remove and discard the existing O-ring and rotor shaft spacer, HET P/N ALV-0210.
  - (4) Assemble the rotor shaft spacer and O-ring on the alternator rotor shaft.
    - (a) Install the new rotor shaft spacer HET P/N 41160 (will have an identification groove on the OD, refer to Fig. 2), with the O-ring gland facing outward.
    - (b) Install a new O-ring, HET P/N 32B70247A01. (Put a drop of aircraft engine oil on the O-ring to ease installation over the rotor shaft.)
    - (c) Install the large washer, HET P/N ALV-74.
    - (d) Install a new woodruff key, HET P/N X-0260.
  - (5) Prior to installing the Engine Drive Gear Coupling, it must be inspected and found to be airworthy in accordance with the engine or coupling manufacturers latest service information.
    - (a) Replace the Engine Drive Gear Coupling as required.
  - (6) Install the Engine Drive Gear Coupling on the affected alternator in accordance with the applicable engine maintenance manual or service instruction.
  - (7) Alternator Installation
    - (a) Before installing the alternator, install a new crankcase alternator gasket. (Obtain this OEM part from Continental Motors, Inc. or Lycoming as applicable.)
    - (b) Install an alternator that is in compliance with this Service Bulletin on the engine in accordance with the applicable aircraft maintenance manual and/or engine service instruction.
- C. Return to Service
- (1) Inspect the alternator installation on aircraft or engine as prescribed in the applicable aircraft maintenance manual and/or engine service instruction of the latest revision.
  - (2) Perform the recommended functional tests in accordance with the appropriate aircraft maintenance manual and POH or AFM.
- D. 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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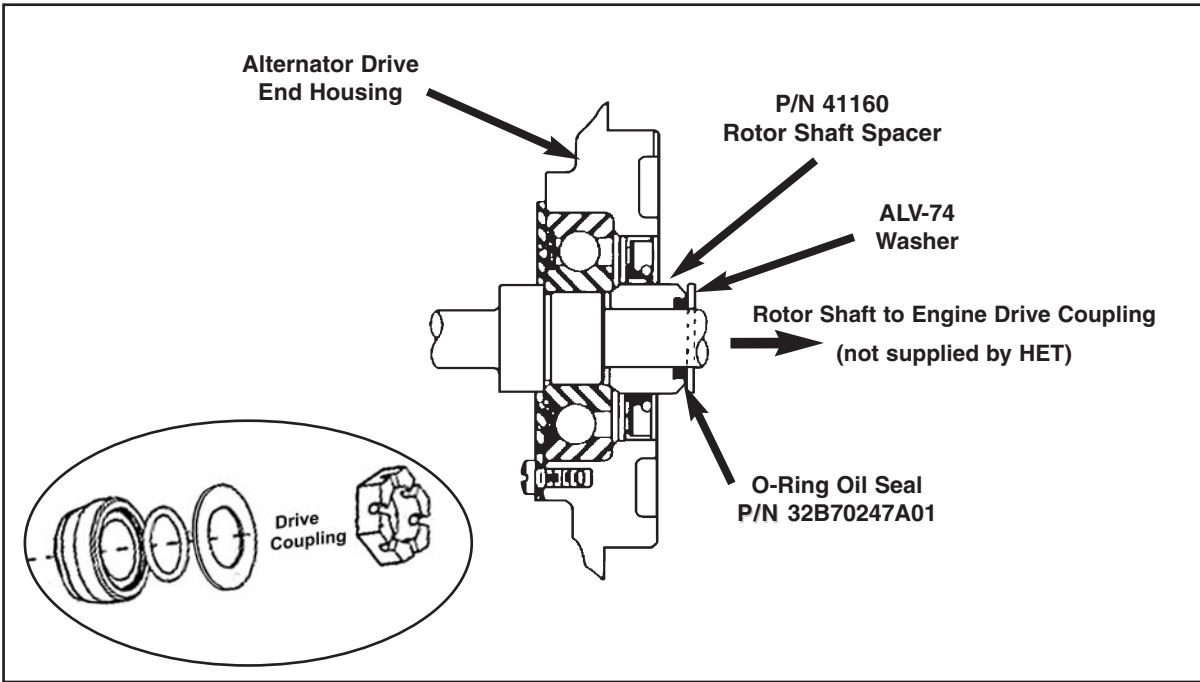


Figure 1 - ALV-9510R Alternator Rotor Shaft Spacer, O-Ring & Washer Stack

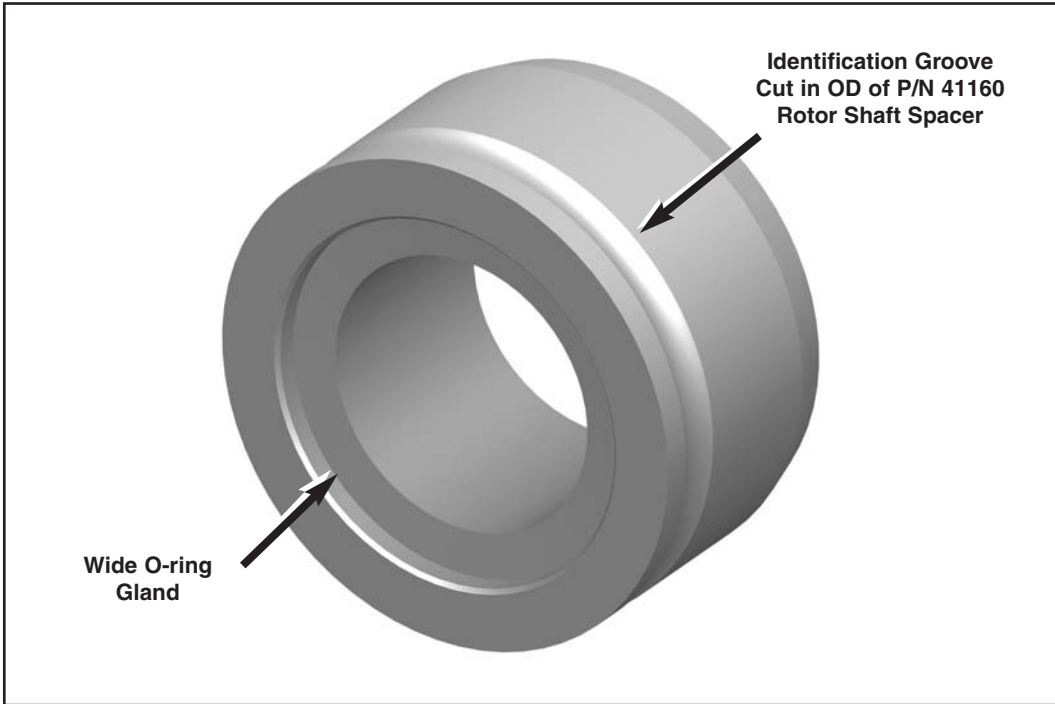


Figure 2 - P/N 41160 Alternator Rotor Shaft Spacer Identification (identification groove and wide O-ring Gland)

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## Alternator Model ALV-9510 Rotor Shaft O-Ring and Spacer Replacement

### 1. ELIGIBILITY:

- A. All in service Hartzell Engine Technologies, LLC (HET) ALV-9510R Alternators affected by Service Bulletin SB 070 are eligible.
- B. ALV-9510(R) Alternator models at overhaul are not eligible for commercial assistance.

### 2. COMMERCIAL ASSISTANCE PROGRAM:

The following will be provided with the submission of a completed SB 070 Claim Form.

**Any commercial assistance or other consideration shall expire twelve (12) calendar months from the original published date of Service Bulletin No. 070.**

- A. One (1) each, Kit, HET P/N 90-2822.

### 3. COMMERCIAL ASSISTANCE ADMINISTRATION:

- A. Complete the Service Bulletin SB 070 Claim Form attached to this appendix.
  - (1) Mail, e-mail, or fax the SB 070 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, HET will:
  - (1) If required by the Service Bulletin, ship the material required by section 2.A, to the service facility indicated.
  - (2) The service facility must return proof of service within thirty (30) days or the service provider shall be invoiced for the HET supplied materials.

### 4. WARRANTY STATEMENT:

- A. The sole warranty for the actions of SB 070 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 070 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.

### 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](mailto:techsupport@HartzellEngineTech.com).
  - (4) Address  
Hartzell Engine Technologies LLC  
2900 Selma Highway,  
Montgomery, AL 36108  
USA

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## Alternator Model ALV-9510 Rotor Shaft O-Ring and Spacer Replacement

### SB 070 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: \_\_\_\_\_ Part Number: \_\_\_\_\_  
Serial Number: \_\_\_\_\_ (Alternator) Date Removed: \_\_\_\_\_  
Part Time in Service: \_\_\_\_\_ (Alternator) Original Date Installed: \_\_\_\_\_

For RMA Number

Send this SB 070 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: \_\_\_\_\_