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Service Bulletin

Service Bulletin No. 053

Alternator HET P/N ASG12000 (-1, -2, & -3)

Housing Gap Check

1. Planning Information

A. Effectivity

(1) Hartzell Engine Technologies LLC (HET) alternators:

- (a) All Kelly or HET P/N ASG12000 (-1, -2, and -3) alternators identified by serial numbers in the range of K01XXXX through K09XXXX and H-K10XXXX through H-N030001, that do not have an "A" suffix. (Refer to Table 1.)
- (b) Alternators may be new or overhauled units which were sold or provided by Cessna Aircraft.
 - (i) Cessna part numbers * for new are 9910592 (-1, -2, and -3) with affected serial numbers.
 - (ii) Cessna part numbers * for overhauled are 9910592 (-1RX, -2RX, and -3RX) with affected serial numbers.

* Affected alternators may be used in, but are not limited to the Cessna Aircraft models listed below.
The -1 & -1RX used as spares for replacement in 182, R182, 188, 206, U206, 207, 210, P210 & T303.
The -2 & -2RX are used in the 208 Caravan.
The -3 & -3RX are used in the 182T, T182T, 206H, & T206H.

CAUTION: DO NOT USE OBSOLETE OR OUTDATED INFORMATION. PERFORM ALL WORK OR INSPECTIONS IN ACCORDANCE WITH THE MOST RECENT REVISION OF THIS SERVICE BULLETIN (SB). INFORMATION CONTAINED IN THIS SB MAY BE SIGNIFICANTLY CHANGED FROM EARLIER REVISIONS. FAILURE TO COMPLY WITH THIS 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 SB INDEX FOR THE MOST RECENT REVISION LEVEL OF THIS SERVICE BULLETIN.

B. Concurrent Requirements

- (1) None

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C. Reason

- (1) Hartzell Engine Technologies has discovered that a group of HET P/N ASG12000 (Cessna P/N 9910592) alternators may have an interference condition between the drive end housing and the slip ring end housing.
- (2) This condition may prevent proper retention of the stator assembly which may allow the stator to contact rotating components. Moderate to severe contact may disable the alternator.
- (3) This condition may appear in alternators manufactured between first unit of January 2010 and the first unit of March 2013 (see Table 1).
- (4) Notify Cessna Aircraft of the alternator condition and effectivity.
- (5) Regulatory action is not expected.

D. Description

- (1) This Service Bulletin provides Instructions for Continued Airworthiness (ICA).
- (2) This Service Bulletin is being issued to require an inspection and possible return of new or overhauled alternators per the effectivity above.

E. Compliance

- (1) At the next regularly scheduled maintenance event causing removal of the engine cowling, but no later than the next annual inspection.
 - (a) Determine if alternator is affected by examining the serial number per the Effectivity 1.A.1(a).
 - (b) If affected, perform the clearance inspection on the alternator per Corrective Action instruction 3.B.
 - (c) If the alternator does not pass the clearance inspection in 3.B, remove the affected alternator.
 - (i) Return the affected alternator to an authorized Cessna facility.
 - (ii) Replace the affected alternator with a unit not affected by this Service Bulletin or with a unit that meets the corrective action criteria of this Service Bulletin.
- (2) Compliance with this Service Bulletin is the terminating action for this Service Bulletin.
 - (a) If an "A" appears after the affected serial number, the alternator has previously been inspected and passed the clearance inspection in 3.B.

F. Approval

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

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G. Manpower (per application)

- (1) A total of 1/4 (.25) man hour is required at regularly scheduled maintenance includes:
 - (a) Inspection.
 - (b) Return to Service.
- (2) If required, a total of two (2) man hours at regularly scheduled maintenance includes:
 - (a) Removal of the alternator.
 - (b) Installation of the alternator.
 - (c) Return to Service

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 Cessna aircraft maintenance and parts manuals.
- (2) Applicable engine maintenance manual.
- (3) Applicable Cessna aircraft AFM or POH.

K. Other Publications Affected

- (1) None

2. Material Information

- (1) If required by 3.B(2), one (1) each, Alternator, HET P/N ASG12000 of the dash number removed not affected by this Service Bulletin. (Supplied to Cessna only. The end user must obtain alternator from Cessna Aircraft.)
- (2) Miscellaneous parts, including the alternator belt, if required, must be obtained through Cessna Aircraft.

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3. Accomplishment Instructions

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

CAUTION: 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 ENGINE AND CESSNA AIRCRAFT MAINTENANCE MANUALS. INFORMATION CONTAINED IN THESE MANUALS OR THIS SB MAY BE SIGNIFICANTLY CHANGED FROM EARLIER REVISIONS. FAILURE TO COMPLY WITH THIS SB OR THE USE OF OBSOLETE INFORMATION MAY CREATE UNSAFE CONDITIONS THAT MAY RESULT IN DEATH, SERIOUS BODILY INJURY, AND SUBSTANTIAL PROPERTY DAMAGE. REFER TO THE APPLICABLE MANUAL INDEXES FOR THE MOST RECENT REVISION LEVEL OF A SPECIFIC PUBLICATION.

A. Identification (Alternators)

NOTE: The alternator locations and ease of access vary with the aircraft model. Alternators affected by this SB are belt driven.

- (1) If positive identification of the alternator serial number can be made through the aircraft paperwork, and the alternator is NOT affected, proceed to 3.D, Maintenance Record. If the alternator IS affected by serial number, proceed to Corrective Action instruction 3.B.
- (2) If positive identification of the alternator serial number CAN NOT be made through the aircraft paperwork, locate the alternator nameplate (see Figure 1) and observe the serial number.
 - (a) If the alternator IS NOT affected, proceed to section 3.D for Return to Service.
 - (b) If the alternator IS affected, proceed with Corrective Action instruction 3.B.
 - (c) If the alternator IS affected, and an "A" appears after the serial number on the nameplate, the alternator has previously been inspected and passed the clearance inspection, proceed to section 3.D(1)b for Return to Service.

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B. Corrective Action:

- (1) Use a 0.002 inch (0.05 mm) feeler gage to check the gap between the slip ring end and drive end housings at all four through bolt ears, completely around the ears. (Refer to Figure 3) This check may be performed with the alternator installed on the aircraft if adequate access can be made. If not, remove the alternator for this check.
 - (a) Figure 2 shows an unacceptable feeler gage check with no gap at each ear.
 - (b) Figure 4 shows an acceptable feeler gage check with proper gap at each ear.
- (2) If the 0.002 inch (0.05 mm) feeler gage will not fit at any location around the ear as shown in Figure 2, the alternator must be removed.
 - (a) Remove the affected alternator in accordance with applicable engine and/or Cessna Aircraft Maintenance Manual.
 - (b) Return the affected alternator to an authorized Cessna facility per instructions contained in the Cessna service publication of the same subject.
- (3) If the 0.002 inch (0.05 mm) feeler gage fits at all locations around each ear as shown in Figure 4, the alternator is acceptable. Using a suitable tool, stamp an "A" on the nameplate after the affected serial number to indicate the alternator has passed the clearance inspection in 3.B.
 - (a) If the alternator was not removed from the aircraft, proceed to Return to Service 3.C(3).
 - (b) If the alternator assembly has been removed from the aircraft, proceed to Return to Service 3.C(1).

C. Return to Service

- (1) After the alternator has been properly installed and alternator belt properly tensioned, the aircraft will be ready to "return to service".
- (2) Perform the recommended alternator operational tests in accordance with applicable Cessna Aircraft Maintenance Manual and applicable Cessna AFM or POH.
- (3) Using the applicable Cessna aircraft maintenance manual of the latest revision, install any portion of the aircraft that was removed to gain access.

D. Maintenance Record

- (1) Upon successful completion of this Service Bulletin per the applicable compliance listed, make an appropriate logbook entry noting compliance with the applicable Cessna service publication which addresses the same requirement.
 - (a) Record unit serial number in logbook when an "A" suffix has been added per 3.B(3).
 - (b) Compliance with this Service Bulletin is terminating action for the Service Bulletin.

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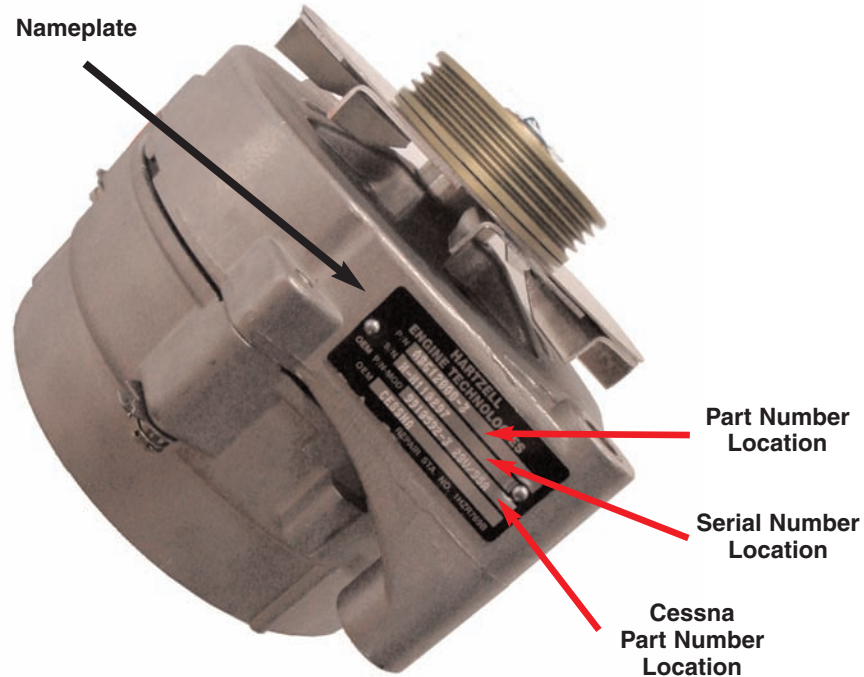


Figure 1 - Typical ASG12000 (-1, -2, & -3) Alternator
(Part Number ending with "RX" indicates Overhauled.)

Table 1 - Serial number Identification

HET	→	H-	N	03	XXXX
Year Code	→		↑	↑	↑
Month Code	→			↑	↑
Batch Code	→				↑

No prefix in serial number indicates Kelly Aerospace unit & nameplate.

H- prefix in serial number indicates Hartzell Engine Technologies unit & nameplate.

A- stamped after serial number indicates previous compliance with this SB.

Examples: Begin: K01XXXX - 2010, January, from first unit of the month

End: K09XXXX - 2010, September, from first unit of the month

Begin: H-K10XXXX - HET, 2010, October, from first unit of the month

End: H-N030001 - HET, 2013, March, first unit of the month

Year Code: K = 2010, L = 2011, M = 2012, N = 2013

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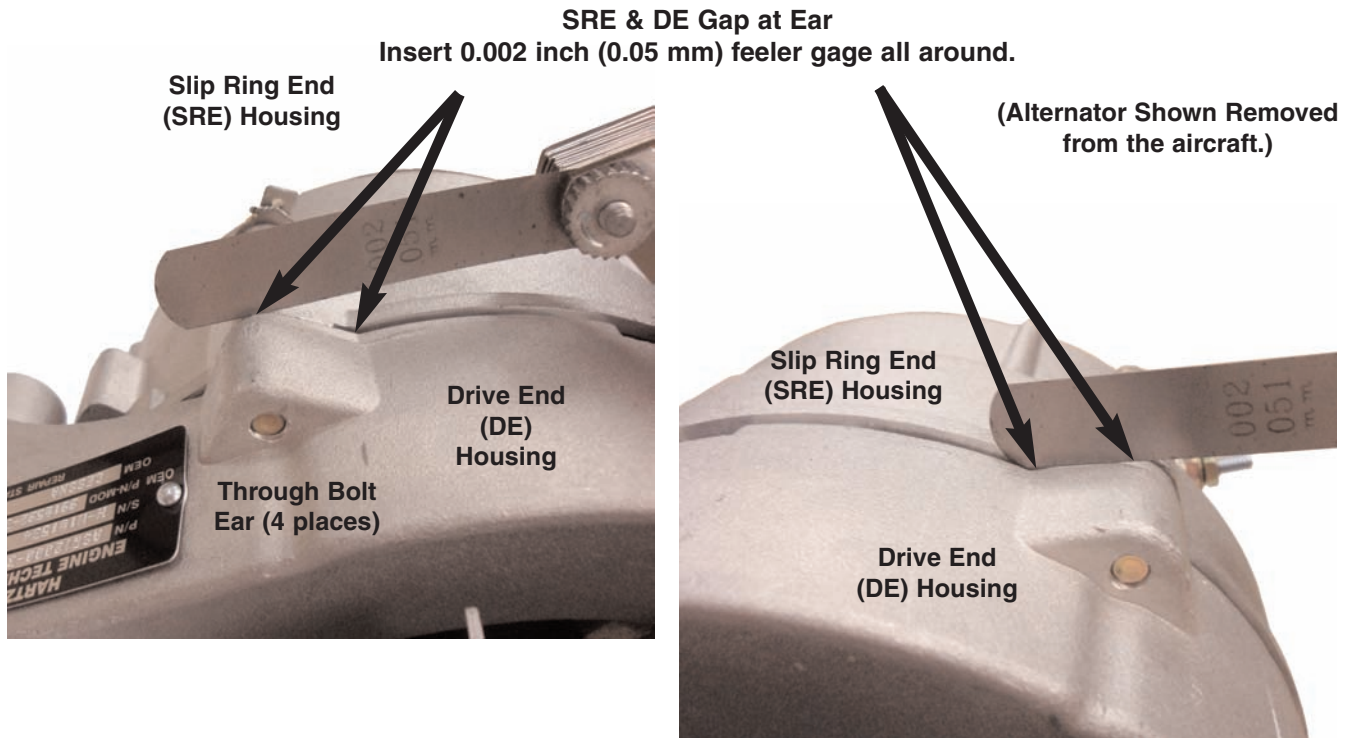


Figure 2 - SRE & DE Housing Shown With Interference at Ear.
0.002 inch (0.05 mm) Feeler Gage Will Not Fit
(Alternator Unacceptable)

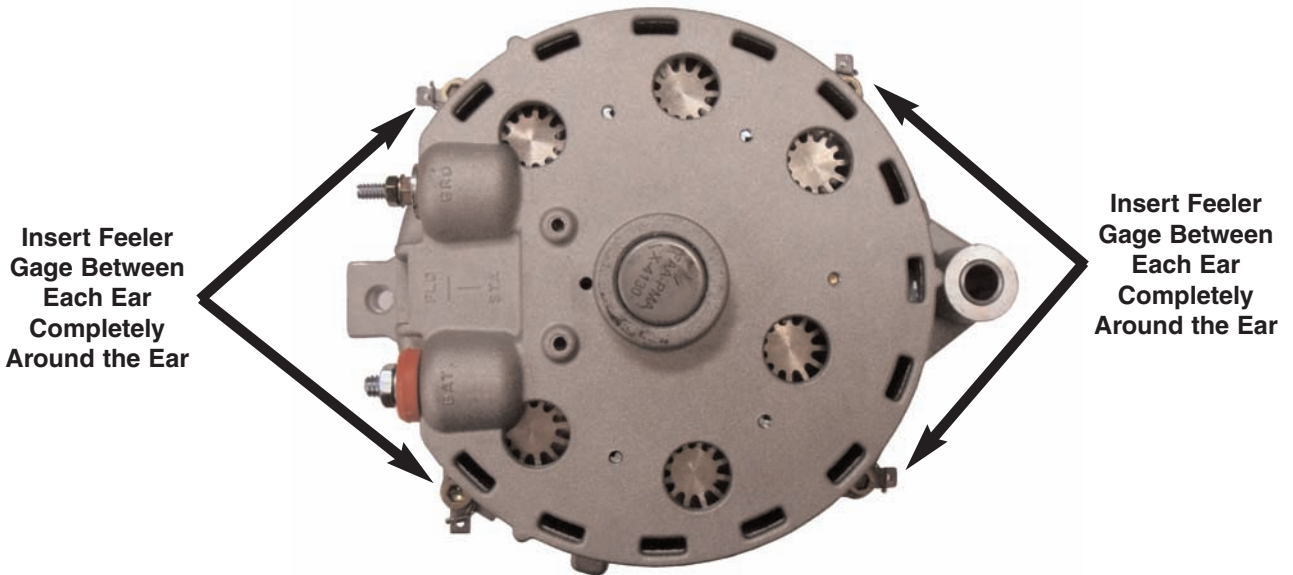


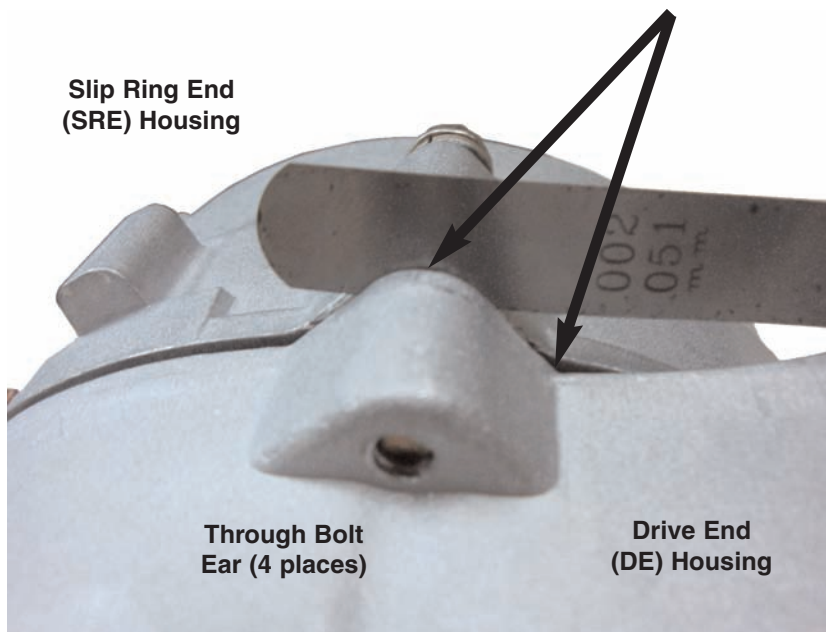
Figure 3 - Measure at Alternator Through Bolt Ears (4 places)

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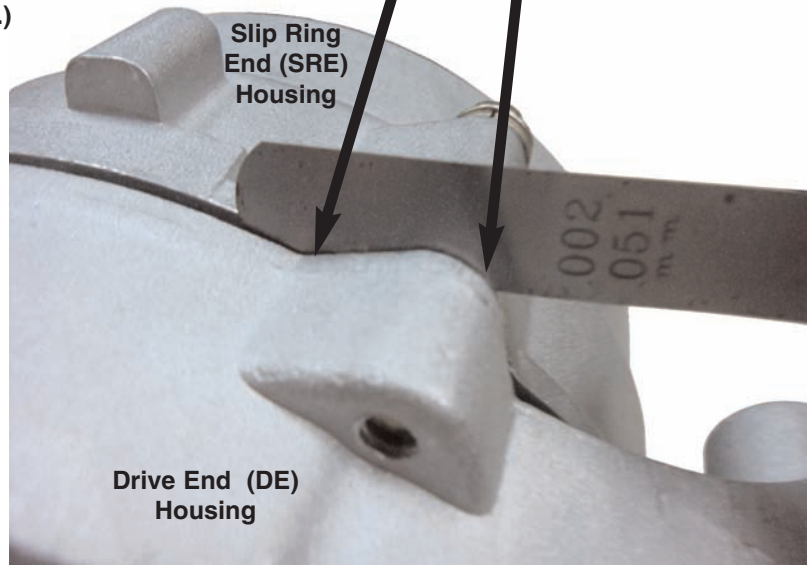
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SRE & DE Gap at Ear
Insert 0.002 inch (0.05 mm) feeler gage all around.



(Alternator Shown Removed from the aircraft.)



**Figure 4 - DE & SRE Housing Shown
With Appropriate Gap at Joint.**

**0.002 inch (0.50 mm) Feeler Gage Fits
(Alternator Acceptable)**

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4. Contact Information:
 - A. Information pertaining to these alternators and their usage must be made through Cessna Aircraft.
 - B. General information regarding SB 053 may be obtained through Hartzell Engine Technologies Technical Support at (888) 461-6077 or via Fax (334) 386-5450.
 - C. For e-mail communication regarding SB 053 use techsupport@hartzellenginetech.com, or visit our website: <http://www.HartzellEngineTech.com>, select "contact" and follow the instructions.
 - D. The alternator must be returned to Cessna Aircraft per instructions contained in their service publication of the same subject, contact your local authorized Cessna facility for further information.

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