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Montgomery, AL 36108 USA
Tel: 334-386-5400 Fax: 334-386-5450

ALERT SERVICE BULLETIN

ALERT SERVICE BULLETIN No. 081

Alternator Castellated Hex-Nut Inspection

1. Planning Information

A. Effectivity

- (1) Plane-Power alternators P/N ALT-9522(R), ALV-9510(R), ALV-9610, ALX-9524(R), C14-100(S), C28-150(S), ES-6024D, and ES-10024 manufactured by Hartzell Engine Technologies (HET) and shipped between 05 January 2011 and 21 May 2019 are affected by this Alert Service Bulletin (ASB).
- (2) Engine model/series affected by this ASB are shown in Table 2.

NOTE: Table 2 is for reference only and is not an all-inclusive list of engines affected by this ASB. It is the responsibility of the owner/operator to verify whether an affected alternator may be installed.

WARNING: DO NOT USE OBSOLETE OR OUTDATED INFORMATION. PERFORM ALL INSPECTIONS OR WORK IN ACCORDANCE WITH THE MOST RECENT REVISION OF THIS SERVICE BULLETIN. INFORMATION CONTAINED HEREIN 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 PLANE-POWER WEBSITE, WWW.PLANEPOWER.AERO, FOR THE MOST RECENT REVISION LEVEL OF THIS ALERT SERVICE BULLETIN.

B. Concurrent Requirements

- (1) None

C. Reason

- (1) Alternators listed in section 1.A could contain a castellated hex-nut (1, Figure 1) that does not torque flush with the thrust washer (3). This condition could compromise the integrity of the drive coupling retention system.
 - (a) Loss of drive coupling retention may result in engine damage and/or unexpected loss of engine power.
- (2) This ASB is to advise the field of a known condition and to supply inspection criteria to identify affected alternators.

D. Description

- (1) This Alert Service Bulletin provides Instructions for Continued Airworthiness (ICA).

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E. Compliance

- (1) **IMMEDIATE:** If a loss of alternator output or erratic output indication occurs during flight, land as soon as practicable. Comply with this ASB prior to further flight.
- (2) Compliance with section 3.A of this ASB is required within fifty (50) hours time-in-service after the effective date of this ASB or at the next scheduled annual inspection, whichever occurs first.
- (3) For affected alternators in inventory, return within 30 days from the original issue date of this Alert Service Bulletin or prior to installation, whichever occurs first.
- (4) Compliance with the Accomplishment Instructions is the terminating action for this ASB.

F. Approval

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

G. Manpower

- (1) Up to one (1) hour labor for alternator removal, inspection, and alternator installation.
- (2) Up to two (2.0) hours labor for alternator removal, inspection, replacement of the castellated hex-nut, and alternator installation.

H. References

- (1) Continental Aerospace Technologies' Manual M-0, *Standard Practice for Spark Ignited Engines*.
- (2) HET Manual P/N OE-A2, *Alternator and Starter Overhaul Manual*, Rev. 08 or later FAA approved revision.
- (3) Applicable Aircraft Service Instructions or Maintenance Manual.
- (4) Applicable Aircraft AFM or POH.
- (5) Continental Aerospace Technologies' Engine Installation & Operation Manual.
- (6) Continental Aerospace Technologies' Engine Maintenance/Overhaul Manual and Service Publications.

I. Weight and Balance

- (1) No Change

2. Materials Required

- A. Refer to Table 1 - *Materials Required*.

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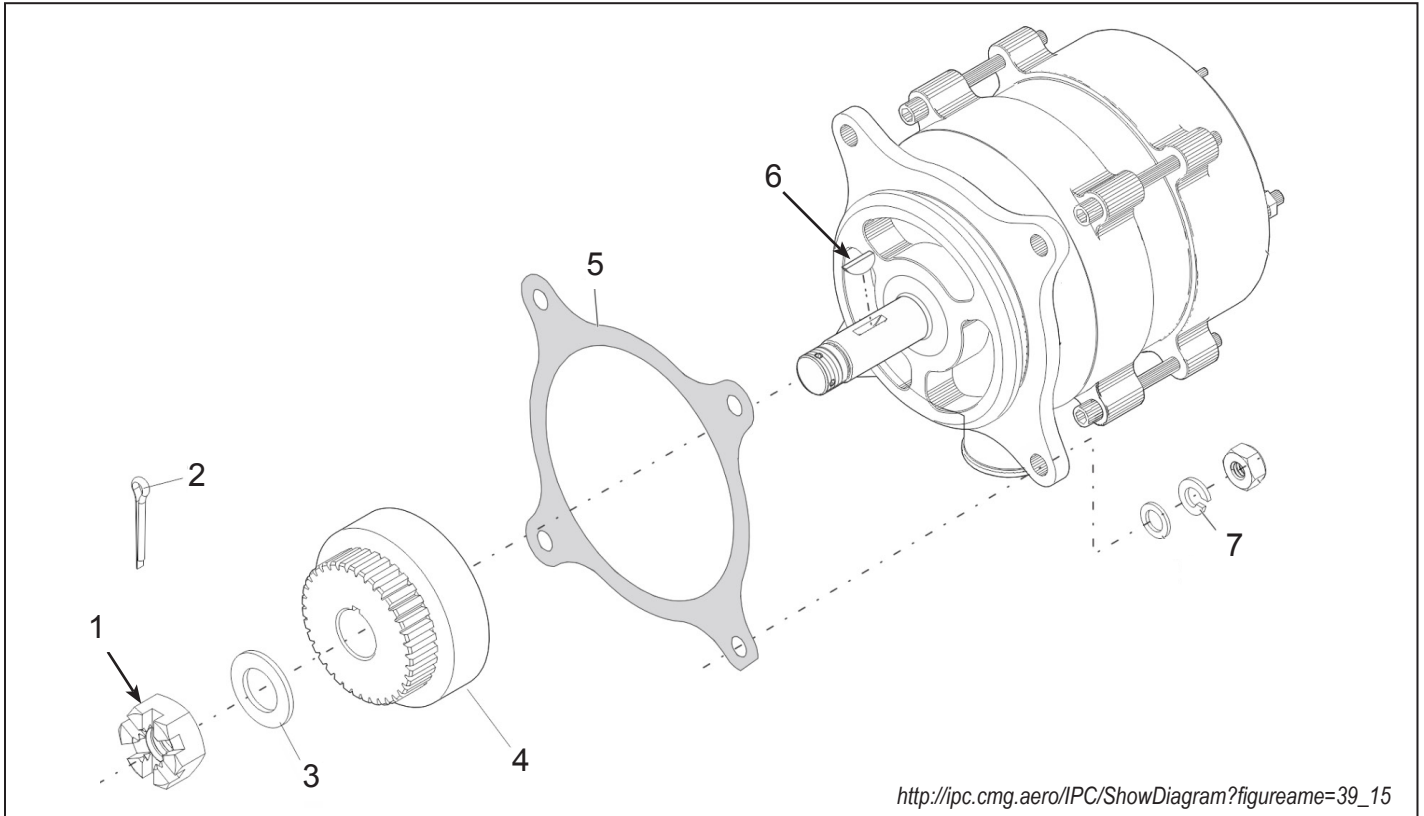


Figure 1 - Alternator, Typical - Continental Aerospace Technologies

ITM #	P/N	Description	Quantity
1	8X-4075	Nut, Castellated Hex [†]	1
2	MS24665-302	Pin, Cotter*	1
3	630697	Washer, Thrust*	1
5	653981	Gasket, Mounting*	1
6	X-0260	Key, Woodruff, #5 [†]	1
7	MS35338-45	Washer, Lock-Spring .3125*	4

* Part numbers are typical, reference current Continental IPC. Parts available from Continental Aerospace Technologies.

[†] Parts available from Hartzell Engine Technologies.

Table 1- Materials Required (Refer to Figure 1)

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3. Accomplishment Instructions

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

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. INFORMATION CONTAINED HEREIN 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 PLANE-POWER WEBSITE FOR THE MOST RECENT REVISION LEVEL OF THIS ALERT SERVICE BULLETIN, WWW.PLANEPOWER.AERO.

CAUTION: REFER TO THE APPLICABLE MANUFACTURER'S MAINTENANCE MANUALS OR SERVICE INSTRUCTIONS TO GAIN ACCESS TO THE AIRFRAME OR ALTERNATOR. IN ADDITION, ANY PREFLIGHT OR IN-FLIGHT OPERATIONAL CHECKS REQUIRE USE OF THE APPROPRIATE AFM OR POH.

A. Inspection

- (1) If previous compliance cannot be verified through aircraft or engine maintenance records, use the same references to determine if an affected alternator has been installed. Refer to section 1.A, Effectivity.
- (2) If effectivity of the alternator cannot be established using aircraft or engine maintenance records, utilize the applicable aircraft maintenance manual to gain access to the alternator and inspect the alternator part number against the affected part numbers found in section 1.A of this ASB.
 - (a) If the alternator part number is affected per section 1.A, continue to 3.B. - Corrective Action.
 - (b) If the alternator part number is not affected per section 1.A, continue to 3.C. - Return to Service.

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B. Corrective Action

- (1) Remove the alternator from the engine in accordance with the latest revision of the aircraft and/or engine manufacturer's maintenance manual.
- (2) Inspect castellated hex-nut (1). If one the following indicators is present, the alternator is in compliance with this ASB. Refer to Figures 3 thru 5.
 - (a) Hex-nut (1) is laser etched with the letter "H";
 - (b) Hex-nut (1) is stamped with a center-punch;
 - (c) A machined groove is present around the hex-nut (1) face.
- (3) If any indicator stated above **is not** present, proceed to 3.B.(4). If one of the indicators stated above **is** present, continue to 3.B.(7).
- (4) Using a .002 in. (.0508 mm) feeler-gauge, measure the gap between the nut thrust face and the thrust washer at each of the six hex-nut flats. Refer to Figure 6.

NOTE: **Do Not** remove cotter pin (2) or break torque prior to conducting measurements.

- (a) If the measurement at any nut flat is $\geq .002$ in. (.0508 mm), continue to 3.B.(5).
- (b) If the measurement at each nut flat is $< .002$ in. (.0508 mm), no corrective action is required.
 - 1) Using an automatic center punch, punch the face of the hex-nut (1) so that it will be easily identified for future reference (Refer to Figure 5). Continue to 3.B.(7).

CAUTION: THE CENTER PUNCH HAS THE POTENTIAL TO SLIP AND DAMAGE THE THREADS OF THE ALTERNATOR ROTOR SHAFT. USE CAUTION WHILE CENTER-PUNCHING THE CASTELLATED HEX-NUT TO AVOID CONTACT WITH THREADS.

- (5) Remove and discard from alternator; Cotter Pin (2), Castellated Hex-Nut (1), Thrust Washer (3), and Woodruff Key (6). Refer to Figure 1.
- (6) Install new replacement components not affected by this ASB onto the alternator in accordance with applicable engine manufacturer's maintenance manual. Refer to Table 1 - *Materials Required*.

NOTE: Thrust washer (3) must be replaced per Continental Aerospace Technologies' M-0 Manual, *Standard Practice for Spark Ignited Engines*.

- (7) Install the alternator onto the engine in accordance with applicable engine manufacturer's maintenance manual.

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(8) Reconnect alternator electrical connections and cooling hardware in accordance with applicable aircraft manufacturer's maintenance manual.

C. Return to Service

(1) Close all access doors and covers opened to gain access to the alternator in accordance with applicable airframe and/or engine maintenance manual.

D. Maintenance Record

(1) Make an appropriate logbook entry noting compliance with this Alert Service Bulletin.

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 - ATTN: Product Support
2900 Selma Highway
Montgomery, AL 36108
USA

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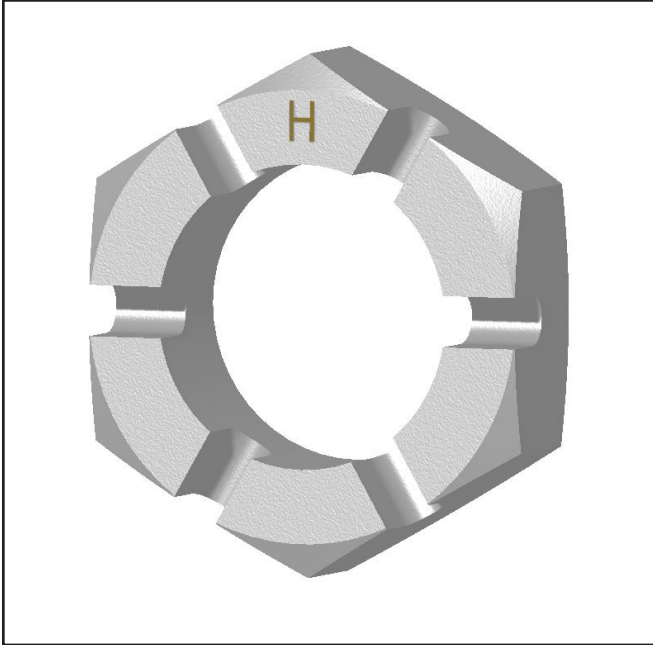


Figure 3 - Laser Etched "H"

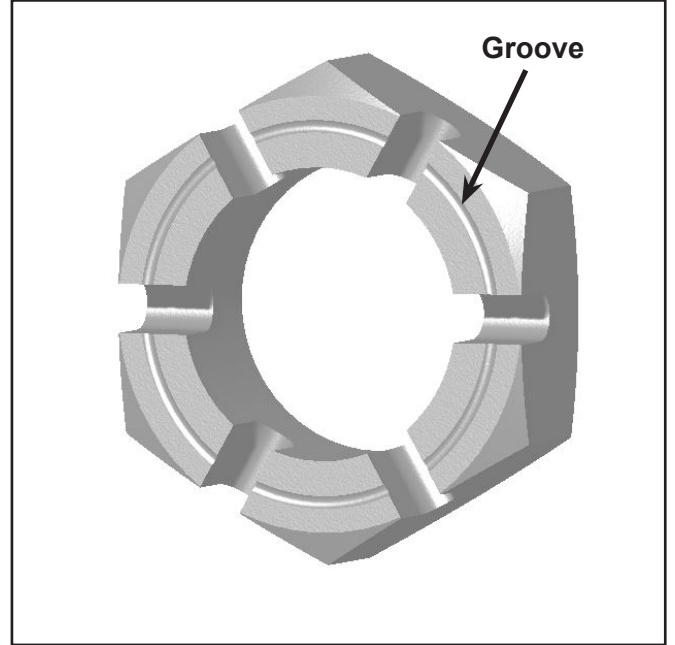


Figure 4 - Machined Groove

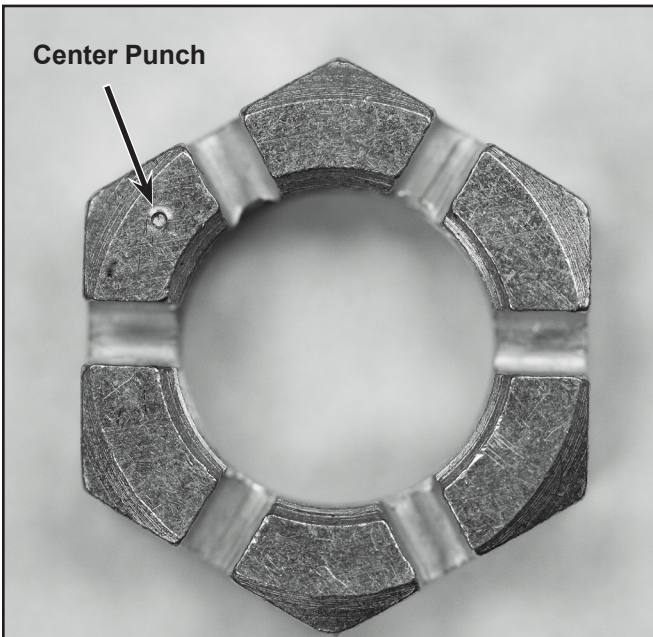


Figure 5 - Center-Punch Mark

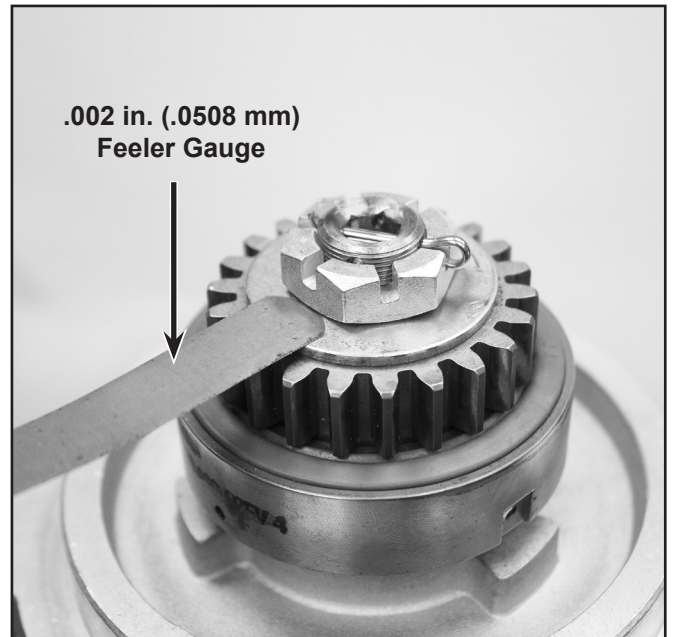


Figure 6 - Gap Measurement

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PlanePower Alternator P/N	Continental P/N	Engine Make	Engine Model/Series
ALT-9522 ALT-9522R	641668	Continental	GTSIO-520-C, -D, -F, -G, -H, -K, -L, -M, -N, -R
			IO-520-A, -B, -BA, -BB, -C, -CB, -M, -MB
			IO-550-A, -B, -C, -G, -N, -P, -R
			TSIO-520-B, -BB, -BE, -D, -DB, -E, -EB, -J, -JB, -K, -KB, -L, -LB, -N, -NB, -U, -UB, -VB, -WB
			TSIO-550-A, -B, -C, -E
			TSIOL-550-A, -B, -C
ALV-9510 ALV-9510L ALV-9510R	-	Continental	GTSIO-520-C
			IO-520-A
			TSIO-520-E
ALV-9610	-	Continental	GTSIO-520-C, D, F, G, H, K, L, M, N, R
			IO-520-A, B, BA, BB, C, CB, M, MB
			IO-550-A, B, C, G, N, P, R
			TSIO-520-B, BB, BE, D, DB, E, EB, J, JB, K, KB, L, LB, N, NB, U, UB, VB, WB
			TSIO-550-A, B, C, E
			TSIOL-550-A, B, C
ALX-9524 ALX-9524R	641670	Continental	IO-520-B, -C
C14-100 C14-100S	-	Continental	IO-520-B, -BA, -BB, -C, -CB
			IO-550-A, -B, -G, -N, -P, -R
			IOF-550-B, -C
			TSIO-520-D, -DB, -NB
			TSIO-550-B, -C, -E
			TSIOL-550-B

Table 2 - Alternator / Engine Effectivity (Cont'd→)

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PlanePower Alternator P/N	Continental P/N	Engine Make	Engine Model/Series
C28-150 C28-150S	-	Continental	GTSIO-520-C, -D, -E, -F, -H, -K, -L, -M, -N
			IO-520-B, -BA, -BB, -C, -CB, -M, MB, -N, -NB
			IO-550-A, -B, -C, -G, -N, -P, -R
			IOF-550-B, -C, -N, -P, -R
			TSIO-520-B, -BB, -BE, -D, -DB, -E, -EB, -J, -JB, -K, -KB, -L, -LB, -N, -U, -NB, -UB, -VB, -WB
			TSIO-550-A, -B, -C, -E, -G, -K
			TSIOF-550-D, -J, -K
			TSIOL-550-A, -B, -C
ES-6024D	-	Continental	GTISO-520-C, -D, -H, -K, -L, -M, -N
			IO-520-B, -BA, -BB, -C, -CB, -M, -MB
			IO-550-A, -B, -C, -G, -N, -P, -R
			TSIO-520-B, -BB, -BE, -D, -DB, -E, -EB, -J, -JB, -K, -KB, -L, -LB, -N, -NB, -U, -UB, -VB, -WB
			TSIO-550-A, -B, -C, -E
ES-10024	656802	Continental	IO-550-A, -B, -C, -D, -E, -F, -G, -L, -N, -P, -R
			IOF-550-B, -C, -D, -E, -F, -L, -N, -P, -R

(Cont'd) **Table 2 - Alternator / Engine Effectivity**

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1. Eligibility:

- A. Plane-Power alternators P/N ALT-9522(R), ALV-9510(R), ALV-9610, ALX-9524(R), C14-100(S), C28-150(S), ES-6024D, and ES-10024 manufactured by Hartzell Engine Technologies (HET) and shipped between 05 January 2011 and 21 May 2019 are affected by Alert Service Bulletin (ASB) 081.
 - (1) Engine model/series affected are shown in Table 2 of ASB 081.

2. Commercial Assistance Program:

The following will be provided with the submission of a completed ASB 081 Claim Form, copies of invoices showing breakdown of material and labor charges, and log book entries. **Any commercial assistance or other consideration shall expire twelve (12) calendar months from the original published date of Alert Service Bulletin No. 081.**

- A. Required material listed in section 2 of ASB 081.
- B. Labor for inspection, removal, & installation compliance with ASB 081 on affected alternator will be paid at a shop rate of \$75 an hour up to the amount specified below:
 - (1) Up to one (1.0) man-hour of labor is needed for removal, inspection, and installation of the alternator if replacement of castellated hex-nut **is not** required.
 - (2) Up to two (2.0) man-hours of labor are needed for removal, inspection, and installation of the alternator if replacement of castellated hex-nut **is** required.

3. Commercial Assistance ADMINISTRATION:

- A. Complete the Service Bulletin ASB 081 Claim Form attached to this appendix.
 - (1) Mail, e-mail, or fax the ASB 081 Claim Form to the attention of Product Support as indicated on the Alert Service Bulletin Claim Form.
- B. Upon receipt of the Alert Service Bulletin Claim Form, Hartzell Engine Technologies LLC HET will:
 - (1) Ship the required material in accordance with section 2 (HET parts) to the service provider indicated.
 - (2) The service provider must return proof of service within thirty (30) days or the service provider shall be invoiced for the HET supplied materials.
- C. For labor and Continental Aerospace Technologies' parts listed in section 2:
 - (1) Aircraft/engine service facility or owner must submit an invoice up to the amount specified in section 2, copies of logbook entries, and a completed ASB 081 Claim Form for reimbursement (*May be a copy of the original form provided*).

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4. WARRANTY STATEMENT:

- A. The sole warranty for the actions of ASB 081 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 ASB 081 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 +1.334.386.5410.
 - (3) E-mail at techsupport@HartzellEngineTech.com.
 - (4) Address
Hartzell Engine Technologies LLC
2900 Selma Highway,
Montgomery, AL 36108
USA

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ASB 081 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: Alternator _____ Part Number: _____

Serial Number: _____ (Alternator) Date Removed: _____

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

For RMA Number

Send this ASB 081 Claim Form to:

Hartzell Engine Technologies Product Support

Fax: +1.334.386.5410

E-mail: techsupport@hartzellenginetech.com

RMA Number:

(write in HET assigned RMA number)

Hartzell Use Only - do not write below this line.

Warranty No: _____ Authorized by: _____