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SERVICE BULLETIN

SERVICE BULLETIN No. 090

Alternator Thru-Bolts

1. Planning Information

A. Effectivity

- (1) Alternator part numbers listed in Table 1 shipped by Hartzell Engine Technologies LLC between 15 Feb. 2022 and 04 Mar. 2022 are affected by this Service Bulletin (SB).
 - (a) Alternators and engine/aircraft model/series affected by this SB are shown in Table 1.
 - (b) Alternator serial numbers affected are shown in Table 2.

NOTE: Table 1 is for reference only and is not an all-inclusive list of engines/aircraft affected by this SB. 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WARNING: DO NOT USE OBSOLETE OR OUTDATED INFORMATION.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 SERVICE BULLETIN.

B. Concurrent Requirements

- (1) None

C. Reason

- (1) Alternator P/Ns listed in Table 1 could contain thru-bolts with inadequate mechanical properties.
 - (a) This condition may result in thru-bolt fracture and loss of clamping force between the alternator drive-end and slip-ring-end housings.
- (2) This SB is to advise the field of a known condition and to supply inspection criteria to identify affected alternators.

D. Description

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

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E. Compliance

- (1) Compliance with section 3.A of this SB is required prior to further flight.
- (2) Compliance with the Accomplishment Instructions is the terminating action for this SB.

F. Approval

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

G. Manpower

- (1) Up to two (2) hours labor for alternator removal and installation.

H. References

- (1) HET Manual OE-A2, *Alternator and Starter Maintenance and Overhaul Manual*
- (2) Continental Aerospace Technologies' Manual M-0, *Standard Practice for Spark Ignited Engines*.
- (3) Continental Aerospace Technologies' Engine Maintenance/Overhaul Manuals and Service Publications.
- (4) Lycoming Engines' Engine Maintenance/Overhaul Manuals and Service Publications.
- (5) Applicable Aircraft Service Instructions or Maintenance Manual.
- (6) Applicable Aircraft AFM or POH.

I. Weight and Balance

- (1) No Change

2. Materials Required

- A. One new, overhauled, or repaired alternator of the part number removed, or a certified new or overhauled replacement part number that is not affected by this Service Bulletin.

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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 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 engine maintenance manual to gain access to the alternator and inspect the alternator against criteria found in section 1.A of this SB.
 - (a) If the alternator **is** affected per section 1.A, continue to 3.B. - Corrective Action.
 - (b) If the alternator is **not** affected per section 1.A, continue to 3.C. - Return to Service.

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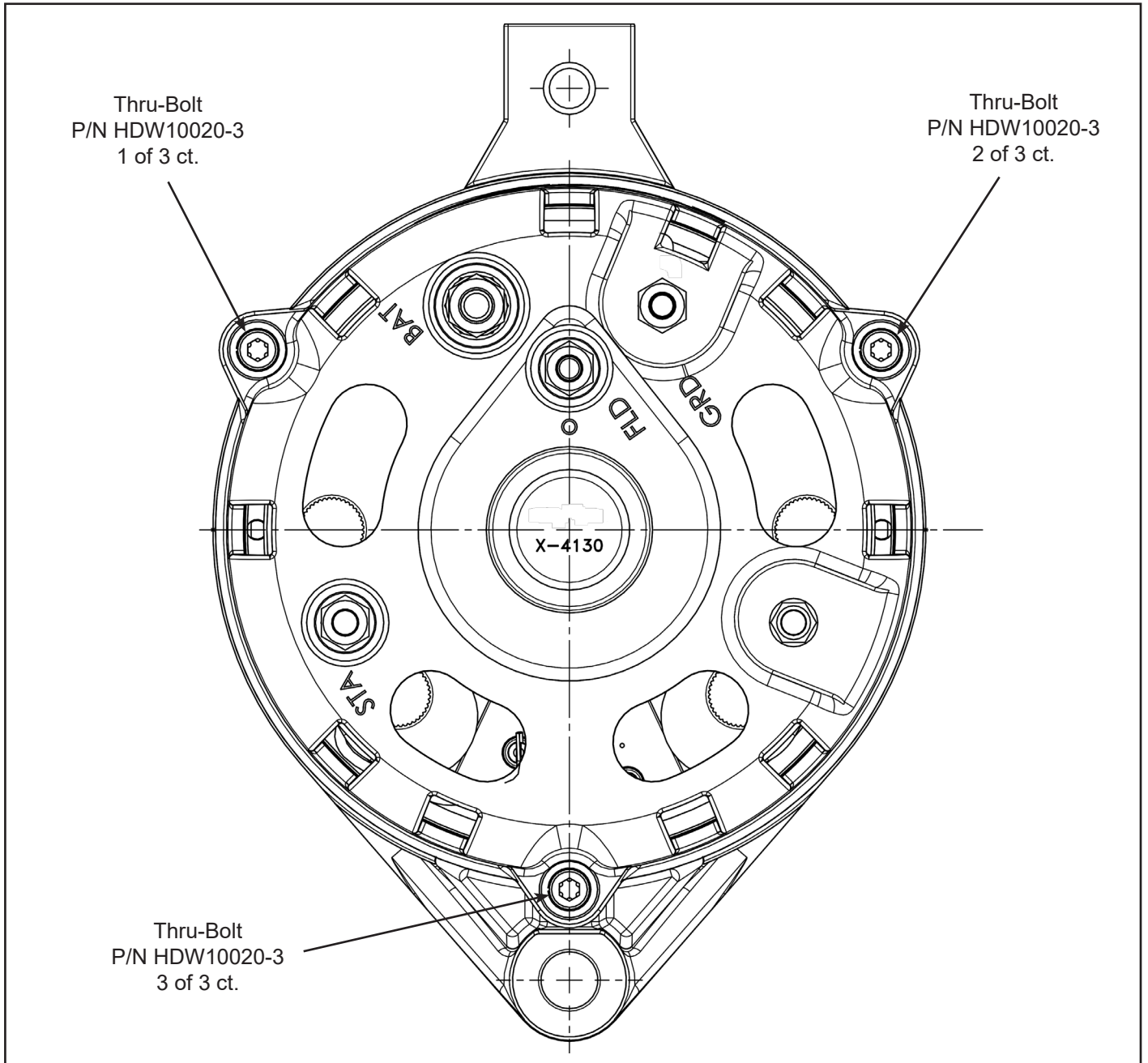


Figure 1 - Thru-Bolt Locations

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B. Corrective Action

(1) Option 1

- (a) Gain access to the alternator in accordance with the latest revision of the aircraft and/or engine maintenance manual.
- (b) Visually inspect the three (3) thru-bolts (Fig.1) for evidence of cracks, broken safety-cable/wire, and/or sheared bolt heads. If indications are present, proceed to 3.B.2 and replace the alternator prior to further flight.
 - 1) If no cracks, broken safety cable/wire, or sheared thru-bolt heads are present, perform a recurring inspection every 25 aircraft-hours not to exceed one-hundred aircraft-hours from the initial inspection.
 - 2) At an accumulated one-hundred aircraft-hours or at the next scheduled annual aircraft inspection, whichever occurs first, the alternator must be replaced. See **Option 2**.

(2) Option 2

- (a) Remove the alternator from the engine in accordance with the latest revision of the aircraft and/or engine manufacturer's maintenance manual.
- (b) Install a new, overhauled, or repaired alternator in accordance with applicable engine manufacturer's maintenance manual. Refer to 2.A, Materials Required.
- (c) Reconnect alternator electrical connections and cooling hardware in accordance with applicable aircraft manufacturer's maintenance manual. Continue to 3.C. Return to Service.

C. Return to Service

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

D. Maintenance Record

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

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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@hartzell.aero
- (4) Address

Hartzell Engine Technologies LLC - ATTN: Product Support
2900 Selma Highway
Montgomery, AL 36108
USA

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HET Alternator P/N	Aircraft/Engine Make/Model	Aircraft/Engine Model/Series
ASG10001-13 DOFF10300JR DOFF10300BR	Cessna	152 S/N 15279406 and up
		A152 S/N A1520735 and up
		F152 S/N F15201449 and up
		FA152 S/N FA1520337 and up
		172 S/N 172269310 & up
		172Q S/N 17275869 & up
		F172 S/N F17201640 & up
		R172 S/N R1722725 thru R1723454
		FR172 S/N FR172-0001 thru FR17200675
		172RG S/N 172RG0001 & up
		177 S/N 17702673 thru 17702753
		177RG S/N 177RG1267 thru 177RG1366
		180 S/N 18052906 thru 18053203
		182 S/N 18265966 & up
		F182 S/N F18200065 thru F18200169
		R182 S/N R18200001 & up
		FR182 S/N FR18200001 thru FR18200070
		T182 S/N 18267716 & up
		TR182 S/N 18200584 & up
		185 S/N 18503459 & up
		U206 S/N U20601573 thru U20604468
		TU206 S/N U20601573 thru U20604468
		207 20700451 & up
T207 20700451 & up		
210 S/N 21059503 thru 21064897		
ASG10001-17 ASG10001-17R	Cessna	188, S/N 1880318 thru 18802348
		A188, S/N 188031 & up
		T188C S/N 18803327T & up
		207, S/N 20700228 thru 20700450
		T207, S/N 20700228 thru 20700450
		172R, S/N 17280001 & up
		172S, S/N 172S8001 & up
		182S, S/N 18280097 & up
182T, S/N 18280097 & up		

Table 1 - Alternator Part Number Effectivity (cont'd →)

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Alternator P/N	Aircraft/Engine Make/Model	Aircraft/Engine Model/Series
ES-4000	Cessna	172, R172, 172RG, 182
ES-4009	Continental	TSIO-360-A, -AB, -B, -BB, -C, -CB, -D, -DB, -E, -EB, -F, -FB, -G, -GB, -H, -HB, -JB, -KB, -LB, -MB, -NB, -PB, -RB, -SB
ES-4024LP	Continental	O-200-A, -B
		O-300-C
		GTSIO-520-L,M, -N
		IO-240-A, -B
		IOF-240-B
		IO-360-C, -CB, -D, -DB, -ES, -G, -GB, -H, -HB, -J, -JB, -K, -KB, -LB
		IO-470-K, -N
		IO-520-BB, -CB, -D, -F, -K, -P
		IO-550-A, -B, -C, -D, -E, -F, -L, -N, -P, -R
		IOF-550-B, -C, -N, -P, -R
		LTSIO-360-E, -EB, -KB, -RB
		TSIO-360-A, -AB, -C, -CB, -D, -DB, -E, -F, -FB, -GB, -H, -HB, -J, -JB, -K, -KB, -LB, -MB, -RB, -SB
		TSIO-520- BB, -BE, -NB, -UB, -VB, -WB
		TSIO-550-A, -B, -C, -E, -G, -K, -N
		TSIOF-550-D, -J, -K
TSIOL-550-A		

(cont'd) **Table 1 - Alternator Part Number Effectivity**

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Affected Serial Numbers				
H-W012428	H-W022556	H-W022616	H-W022628	H-W022749
H-W012429	H-W022580	H-W022617	H-W022629	H-W022753
H-W012430	H-W022594	H-W022618	H-W022630	H-W022755
H-W012431	H-W022600	H-W022619	H-W022631	H-W022756
H-W012432	H-W022607	H-W022620	H-W022632	H-W022757
H-W022194	H-W022610	H-W022621	H-W022633	H-W022776
H-W022195	H-W022611	H-W022622	H-W022634	H-W022778
H-W022552	H-W022612	H-W022623	H-W022635	H-W022877
H-W022553	H-W022613	H-W022624	H-W022641	N/A
H-W022554	H-W022614	H-W022626	H-W022644	N/A
H-W022555	H-W022615	H-W022627	H-W022746	N/A

Table 2 - Alternator Serial Number Effectivity

SERVICE BULLETIN APPENDIX

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Alternator Thru-Bolts

1. Eligibility:

- A. Alternator part numbers listed in Table 1 of Service Bulletin (SL) 090 shipped by Hartzell Engine Technologies LLC between 15 Feb. 2022 and 04 Mar. 2022 are affected.
- B. Alternator serial numbers affected are shown in Table 2 of SB 090.

2. Commercial Assistance Program:

The following will be provided with the submission of a completed Service Bulletin 090 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 Service Bulletin No. 090.**

- A. Required material listed in section 2 of SB 090.
- B. Labor for inspection, removal, & installation of an affected aircraft alternator will be paid at a shop rate of \$85 per hour, not to exceed US\$170 per affected alternator.
 - (1) Up to two (2) man hours of labor are needed for removal and replacement of the alternator assembly.

3. Commercial Assistance ADMINISTRATION:

- A. Complete the Service Bulletin SB 090 Claim Form attached to this appendix.
 - (1) Mail, e-mail, or fax the SB 090 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, 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 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 SB 090 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 SB 090 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 090 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@Hartzell.aero
- (4) Address

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

SERVICE BULLETIN APPENDIX

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Alternator Thru-Bolts

SB 090 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 Assembly _____ Part Number: _____

Serial Number: _____ (Alternator) Date Removed: _____

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

For RMA Number

Send this SL 090 Claim Form to:

Hartzell Engine Technologies Product Support

Fax: +1.334.386.5410

E-mail: techsupport@hartzell.aero

RMA Number:

(write in HET assigned RMA number)

Hartzell Use Only - do not write below this line.

Warranty No: _____ Authorized by: _____