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MANDATORY

SERVICE BULLETIN

DATE: January 8, 2025 Service Bulletin No. 658
 Engineering design data in this service document is FAA approved.


SUBJECT: Starter Inspection, Hartzell Engine Tech (HET) Service Bulletin (SB) No.211

MODELS AFFECTED: IO-360-A1A, -A1B, -A1B6, -A1B6D, -A1D6, -A2B, -A3B6, -A3B6D, -M1A, -M1B, -N1A, -P1A -LIO-360-M1A
 AEIO-360-A1A, -A1B, -A1B6, -A1D, -A1E, -A1E6, -A2C
 IO-390-A1A6, -A1B6, -A3A6, -A3B6
 AEIO-390-A1A6, -A1B6, -A3A6, -A3B6
 IO-540-V4A5, -V4A5D, -W1A5, -W1A5D, -W3A5D

TIME OF COMPLIANCE: Next regularly scheduled aircraft inspection or engine maintenance event, whichever occurs first.

NOTICE: Incomplete review of all the information in this document can cause errors. Read the entire Service Bulletin to make sure you have a complete understanding of the requirements.

This Mandatory Service Bulletin (MSB) transmits HET Service Bulletin No. 211 to ensure that owners, operators, and maintenance providers of Lycoming engines are aware of a potential condition where the power-lead on the starter may contact a fuel fitting on the fuel injection servo. It also entails inspection criteria to identify proper and improper starter installations of affected starter models when installed on a Lycoming engine equipped with a forward-facing fuel injection servo with a top mounted 90° fuel fitting. If improperly installed, the electrical insulation on the power-lead and boot may become damaged resulting in a short-circuit when the starter is energized. This condition may result in a fuel leak if the short-circuit damages the fuel hose assembly connected to the 90° fitting.

 WARNING FAILURE TO INSPECT AND/OR ADDRESS THIS CONDITION MAY RESULT IN AN ENGINE FIRE AND ECONOMIC LOSS, AIRCRAFT DAMAGE, PROPERTY DAMAGE, AND/OR PHYSICAL INJURY/LOSS OF LIFE

HET Service Bulletin No. 211 lists one model of starter and possible engine installations for which HET holds an installation approval. However, Lycoming approves additional starter part numbers and applicable engine model installations in the most current revision of Lycoming Service Instruction No. 1154 that have the same starter power-lead and boot configuration. This Lycoming MSB differs from the HET Service Bulletin by including all engine models equipped with a forward-facing fuel injection servo that are eligible to have a similar starter installed. Lycoming is requiring that all operators follow the Required Action below to determine if their installed starters are installed properly and if further inspections are required.



ISSUED			REVISED			PAGE NO.	REVISION
MO	DAY	YEAR	MO	DAY	YEAR	1 of 11	--
01	08	25	--	--	--		

Table 1 Starter Part Numbers

Lycoming Part Number	HET Model Number
31B23590*	122-NL
31B23592*	149-NL
31B23593*	149-NLR
31B26555*	149-NLR/EC
31B26554	149-NL/EC

***Proprietary Lycoming P/N manufactured by HET for Lycoming. These do not appear in HET SB211 but share the same configuration as described in HET SB 211.**

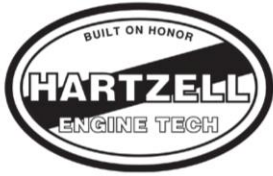
Required Action

1. Identify whether you have any of the affected engine models and starters listed above installed on your Lycoming engine.
2. If affected, inspect and comply in accordance with HET SB No. 211.
3. Removal and reinstallation of the starter (if required) must be performed in accordance with the appropriate engine maintenance manual, overhaul manual, or applicable Instructions for Continued Airworthiness (ICA).
4. Record any repair activity and compliance with this MSB in the engine maintenance records.

Hartzell Engine Technologies Service Bulletin No. 211 dated April 24, 2024 is reprinted in its entirety as follows and is current at the time Lycoming Service Bulletin 658 is issued. However, compliance with this Service Bulletin is to be in accordance with the latest revision of the Hartzell Engine Technologies Service Bulletin SB 211.

If you have any questions, contact Lycoming Technical Support by phone at 570-327-7222 or 877-839-7878 or by email to Technicalsupport@lycoming.com.

ISSUED			REVISED			PAGE NO.	REVISION	S.B. 658
MO	DAY	YEAR	MO	DAY	YEAR			
01	08	25	--	--	--	2 of 11	--	



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Service Bulletin

Service Bulletin No. 211

Aircraft Starter Power-Lead Inspection

1. Planning Information

A. Effectivity

- (1) Skytec starter P/N 149NL/EC manufactured by Hartzell Engine Tech LLC (HET) is affected by this Service Bulletin (SB).
 - (a) Aircraft engines using a fuel injection servo with a top mounted 90° fuel fitting are affected by this SB.
 - 1) Refer to Table-1 for aircraft engine effectivity.

NOTE: Table-1 is for reference only and is not an all-inclusive list of aircraft engines affected by this SB. It is the responsibility of the owner/operator to verify whether an affected starter 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 WWW.SKYTEC.AERO FOR THE MOST RECENT REVISION LEVEL OF THIS SERVICE BULLETIN.

HET Starter P/N	Aircraft Engine Effectivity (Lycoming) *
149NL/EC	AEIO-360-A1A, A1B, A1B6, A1D, A1E, A1E6, A2C; IO-360-A1A, A1B, A1B6, A1B6D, A1D6, A2B, A3B6, A3B6D, M1A, M1B, N1A; IO-390-A1A6, A3A6; IO-540-V4A5, V4A5D, W1A5, W1A5D, W3A5D

Table-1 - Aircraft Engine Effectivity

* Listed engine models utilize a fuel injection servo with a top mounted 90° fuel fitting.

ISSUED			REVISED			PAGE NO.	REVISION	S.B. 658
MO	DAY	YEAR	MO	DAY	YEAR			
01	08	25	--	--	--	3 of 11	--	

Service Bulletin

Service Bulletin No. 211

Aircraft Starter Power-Lead Inspection

B. Concurrent Requirements

- (1) None

C. Reason

- (1) Hartzell Engine Tech has discovered that affected starter models, when installed on engines containing a fuel injection servo with a top mounted 90° fuel fitting, may have an improper installation.
- (2) This SB is to advise the field of a potential condition and to supply inspection criteria to identify proper and improper starter installations.

D. Description

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

E. Compliance

- (1) Comply with section 3, Accomplishment Instructions, at the next regularly scheduled aircraft inspection or engine maintenance event, whichever occurs first.

F. Approval

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

G. Manpower

- (1) Labor is negligible for identification and inspection when performed in conjunction with regularly scheduled maintenance required by the engine/aircraft manufacturer.
- (2) Up to one (1) hour labor required for starter removal and installation, if starter removal is required.

H. References

- (1) Applicable aircraft POH or AFM.
- (2) Aircraft maintenance manual (as applicable).
- (3) Engine Service Instructions or maintenance manual (as applicable).

I. Other Publications Affected

- (1) None

J. Weight and Balance

- (1) No Change

ISSUED			REVISED			PAGE NO.	REVISION	S.B. 658
MO	DAY	YEAR	MO	DAY	YEAR			
01	08	25	--	--	--	4 of 11	--	

Service Bulletin

Service Bulletin No. 211

Aircraft Starter Power-Lead Inspection

2. Material Required

A. If Required:

- (1) One new or overhauled starter P/N 149NL/EC not affected by this Service Bulletin. See Section 3.B. of this document for replacement criteria.

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 AIRCRAFT STARTER SYSTEM. FAILURE TO DO SO MAY RESULT IN ECONOMIC LOSS, EQUIPMENT DAMAGE, AND/OR PHYSICAL INJURY.

CAUTION 1: DO NOT USE OBSOLETE OR OUTDATED INFORMATION. PERFORM ALL INSPECTIONS OR WORK IN ACCORDANCE WITH THE MOST RECENT REVISION OF THIS SERVICE BULLETIN AND THE APPLICABLE AIRCRAFT, ENGINE, AND OVERHAUL MANUAL. INFORMATION CONTAINED IN THESE MANUALS OR 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 SKYTEC WEBSITE (WWW.SKYTEC.AERO) FOR THE MOST RECENT REVISION LEVEL OF THIS SERVICE BULLETIN.

CAUTION 2: DO NOT DEPEND ON THIS SERVICE BULLETIN FOR GAINING ACCESS TO THE ENGINE. ACCESS REQUIRES THE 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. Starter Identification

- (1) If positive identification of the starter can be made through the engine or aircraft documentation, and the starter **is** affected per 1.A, continue to 3.B., Inspection. If the starter is **not** affected, continue to 3.D, Maintenance Record.
- (2) If positive identification cannot be made through engine or aircraft documentation, gain access and locate the data tag on the starter assembly to verify effectivity.
 - (a) If the starter **is** affected, continue to section 3.B., Inspection.
 - (b) If the starter is **not** affected, install any components that were removed to gain access in accordance with the latest engine/airframe service instructions or maintenance manual. Continue to 3.D., Maintenance Record.

ISSUED			REVISED			PAGE NO.	REVISION	S.B. 658
MO	DAY	YEAR	MO	DAY	YEAR			
01	08	25	--	--	--	5 of 11	--	

Service Bulletin

Service Bulletin No. 211

Aircraft Starter Power-Lead Inspection

B. Inspection

(1) Starters installed in conjunction with a fuel injection servo containing a top mounted 90° fuel fitting:

(a) Inspect the starter power-lead against Improper (Fig. 1) and Proper (Fig. 2) installations.

1) Starters found with an improper installation (Fig. 1):

a) Remove the starter assembly in accordance with the latest aircraft/engine maintenance manual and service instructions.

b) Visually inspect the starter power-lead and boot for damage, e.g., chaffing, tears, heat damage, or exposed wire core.

1: If the starter power-lead and/or boot is damaged, replace the starter in accordance with the latest aircraft/engine maintenance manual and service instructions.

2: If the starter power-lead and boot are not damaged, re-install the starter onto the engine.

WARNING: TO PREVENT DAMAGE TO THE STARTER AND/OR AIRCRAFT, ENSURE TO POSITION THE STARTER POWER-LEAD BOOT BETWEEN THE FUEL INJECTION SERVO 90° FUEL FITTING AND THE STARTER HOUSING, AS SHOWN IN FIG. 2.

c) Install any components that were removed to gain access in accordance with the latest engine/airframe service instructions or maintenance manual. Continue to 3.C., Return to Service.

2) Starters found with a proper installation (Fig. 2):

a) Inspect the starter power-lead and boot for damage, e.g., chaffing, tears, heat damage, or exposed wire core.

1: If the starter power-lead and/or boot is damaged, replace the starter in accordance with the latest aircraft/engine maintenance manual and service instructions.

WARNING: TO PREVENT DAMAGE TO THE STARTER AND/OR AIRCRAFT, ENSURE TO POSITION THE STARTER POWER-LEAD BOOT BETWEEN THE FUEL INJECTION SERVO 90° FUEL FITTING AND THE STARTER HOUSING, AS SHOWN IN FIG. 2.

2: If the starter power-lead and boot are not damaged, continue to 3.B(2), Recurrent Inspection.

ISSUED			REVISED			PAGE NO.	REVISION	S.B. 658
MO	DAY	YEAR	MO	DAY	YEAR	6 of 11	--	
01	08	25	--	--	--			

Service Bulletin

Service Bulletin No. 211

Aircraft Starter Power-Lead Inspection

(2) Recurrent Inspection

(a) Starters found with a proper installation (Fig. 2):

1) At each regularly scheduled aircraft inspection or engine maintenance event, inspect the starter power-lead and boot for damage, e.g., chaffing, tears, heat damage, or exposed wire core.

a) If the starter power-lead and/or boot **is** damaged, replace the starter in accordance with the latest aircraft/engine maintenance manual and service instructions.

WARNING: TO PREVENT DAMAGE TO THE STARTER AND/OR AIRCRAFT, ENSURE TO POSITION THE STARTER POWER-LEAD BOOT BETWEEN THE FUEL INJECTION SERVO 90° FUEL FITTING AND THE STARTER HOUSING, AS SHOWN IN FIG. 2.

b) If the starter power-lead and boot are **not** damaged, continue 3.D (1), Maintenance Record.

C. Return to Service

(1) Perform the recommended starter system set up and functional tests in accordance with the appropriate aircraft maintenance manual, engine service instructions, and operational tests in the AFM or POH.

D. Maintenance Record

(1) For recurrent inspections, make a logbook entry at each scheduled aircraft inspection or engine maintenance event indicating compliance with this SB.

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 Tech LLC
2900 Selma Highway,
Montgomery, AL 36108
USA

ISSUED			REVISED			PAGE NO.	REVISION	S.B. 658
MO	DAY	YEAR	MO	DAY	YEAR			
01	08	25	--	--	--	7 of 11	--	

Service Bulletin

Service Bulletin No. 211

Aircraft Starter Power-Lead Inspection



Figure-1 - **Improper** Starter Installation

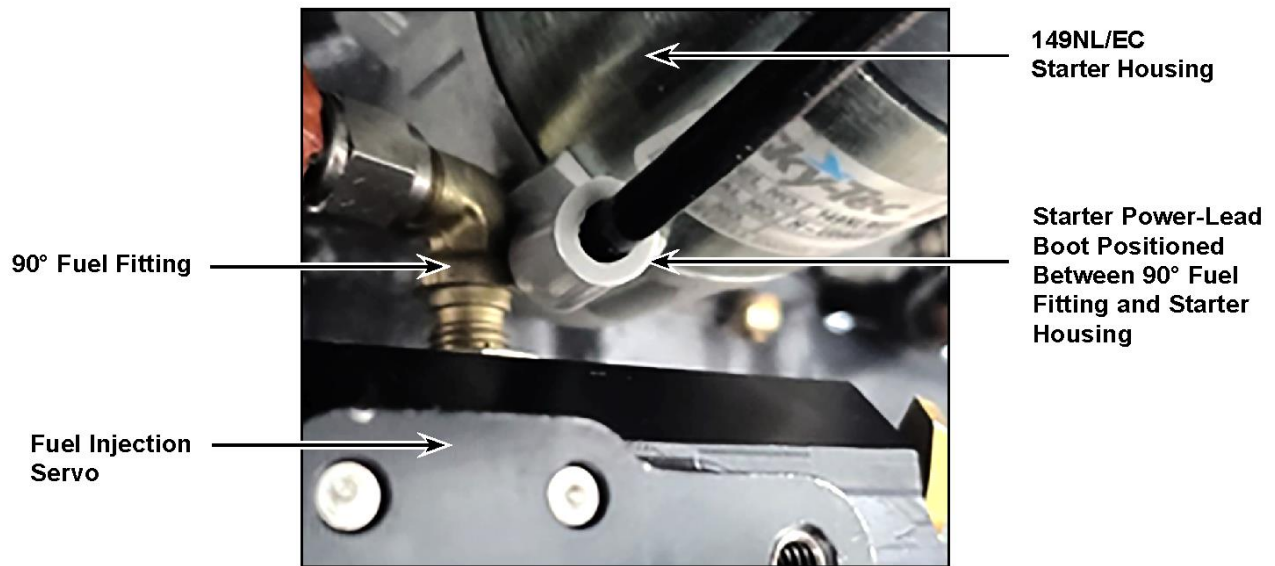


Figure-2 - **Proper** Starter Installation

ISSUED			REVISED			PAGE NO.	REVISION	S.B. 658
MO	DAY	YEAR	MO	DAY	YEAR			
01	08	25	--	--	--	8 of 11	--	

SERVICE BULLETIN APPENDIX

SERVICE BULLETIN No. 211

Aircraft Starter Power-Lead Inspection

1. Eligibility:

A. Skytec starter P/N 149NL/EC manufactured by Hartzell Engine Tech LLC (HET) is affected by Service Bulletin (SB) 211.

(1) Aircraft engines using a fuel injection servo with a top mounted 90° fuel fitting are affected by SB 211.

(a) Refer to Table-1 of SB 211 for aircraft engine effectivity.

2. Commercial Assistance Program:

The following will be provided with the submission of a completed SB 211 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 SB No. 211.**

A. Required material listed in section 2 of SB 211.

B. Labor for inspection, removal, & installation of an affected aircraft starter will be paid at a shop rate of \$85 per hour, not to exceed US \$85 per affected starter.

(1) Up to one (1) man hour of labor are needed for removal and installation of an affected starter assembly.

3. Commercial Assistance ADMINISTRATION:

A. Complete the SB 211 Claim Form attached to this appendix.

(1) Mail, e-mail, or fax the SB 211 Claim Form to the attention of Product Support as indicated on the SB Claim Form.

B. Upon receipt of the SB Claim Form, Hartzell Engine Tech LLC will:

(1) Ship the required material in accordance with section 2 of SB 211 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 211 Claim Form for reimbursement (*May be a copy of the original form provided*).

ISSUED			REVISED			PAGE NO.	REVISION	S.B. 658
MO	DAY	YEAR	MO	DAY	YEAR			
01	08	25	--	--	--	9 of 11	--	

SERVICE BULLETIN APPENDIX

SERVICE BULLETIN No. 211

Aircraft Starter Power-Lead Inspection

4. WARRANTY STATEMENT:

- A. The sole warranty for the actions of SB 211 are contained in the HET Limited Warranty Policy issued with the purchase of each new/overhauled starters (see terms and conditions therein).
- B. Commercial assistance may apply as stated in this Appendix.
- C. Issuance of SB 211 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 Tech LLC
2900 Selma Highway,
Montgomery, AL 36108
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ISSUED			REVISED			PAGE NO.	REVISION	S.B. 658
MO	DAY	YEAR	MO	DAY	YEAR			
01	08	25	--	--	--	10 of 11	--	

SERVICE BULLETIN APPENDIX

SERVICE BULLETIN No. 211

Aircraft Starter Power-Lead Inspection

SB 211 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: Starter Assembly _____ Part Number: _____

Serial Number: _____ (Starter) Date Removed: _____

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

For RMA Number

Send this SB 211 Claim Form to:

Hartzell Engine Tech 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: _____

Rev. New: 24 Apr. 2024

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SB 211

Appendix page 3 of 3

ISSUED			REVISED			PAGE NO.	REVISION	S.B. 658
MO	DAY	YEAR	MO	DAY	YEAR			
01	08	25	--	--	--	11 of 11	--	