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MANDATORY

SERVICE BULLETIN

DATE: January 04, 2024 Service Bulletin No. 655
Engineering Aspects are
FAA Approved

SUBJECT: Hartzell Engine Tech (HET) Service Bulletin (SB) No. 203

MODELS AFFECTED: Turbochargers manufactured, rebuilt or overhauled by HET and HET turbocharger Overhaul Kits shipped between 10/31/2022 and 5/17/2023 with less than 50 hours time in-service for the turbocharger.

TIME OF COMPLIANCE: If applicable, immediately perform a one-time inspection of the affected turbocharger.

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. 203 to ensure that owners, operators, and maintenance providers of Lycoming engines are aware of the potential for undersized journal bearings in some turbochargers or Overhaul Kits between 10/31/2022 and 5/17/2023. Under certain conditions, an undersized journal bearing could lead to premature bearing wear, reduction in engine power, and/or potential seizure of the turbocharger. Lycoming is requiring that all operators follow the Required Action below to determine if their installed turbocharger(s) or turbocharger(s) in spares inventory are affected.

Turbocharger P/Ns

- 46C19836 (Hartzell P/N 466011-2 or 466011-9002)
- 46C16839*
- 46C22924*
- Any turbocharger repaired or overhauled in the field using an HET Overhaul Kit described in HET SB 203.

*Proprietary Lycoming P/N manufactured by HET for Lycoming. These do not appear in HET SB 203 but are suspected to contain the same undersized journal bearing as described in SB 203.

Required Action

NOTICE: If your turbocharger is not affected by HET SB 203, or your affected turbocharger is already in compliance with SB 203, no further action is required.

1. Identify whether you have any of the affected turbochargers listed above installed on your Lycoming engine or in spares inventory.
2. Affected turbochargers are to be inspected, repaired, or replaced in accordance with HET SB No. 203. Do not send turbochargers to Lycoming for repair. Doing so will cause unnecessary delays.



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3. Removal and reinstallation of the turbocharger (if required) must be performed in accordance with the appropriate engine maintenance manual, overhaul manual, or applicable ICA. Refer to the latest revision of Lycoming Service Instruction No. 1562 – Turbocharged Exhaust System Installation for additional guidance when performing maintenance on a turbocharged exhaust system.
4. Record any repair activity and compliance with this MSB in the engine maintenance records.

⚠ CAUTION USE PROPER TECHNIQUE WHEN INSTALLING AND TIGHTENING OIL AND DRAIN LINES TO THE TURBOCHARGER. SUPPORT HOSES WHILE TIGHTENING TO PREVENT TWISTS AND KINKS IN THE HOSE. A TWISTED OR KINKED FLEXIBLE HOSE ASSEMBLY WILL RESTRICT OIL FLOW.

Warranty Consideration

For affected customers, after complying with this MSB, please file a warranty claim directly with HET per the Commercial Assistance section in the appendix of the latest revision of HET Service Bulletin SB-203.

⚠ WARNING: REFER TO THE INTERNET LINK <https://aeroforce.aero/wp-content/uploads/2023/08/SB-203-Journal-Bearing.pdf> TO BE SURE YOU HAVE THE LATEST VERSION OF HET’S SERVICE BULLETIN NO. 203. FAILURE TO COMPLY WITH THIS WARNING COULD CREATE AN UNSAFE CONDITION THAT CAN RESULT IN DEATH, SERIOUS BODILY INJURY, AND/OR PROPERTY DAMAGE. PROCEDURES IN HET’S BULLETIN MUST BE COMPLETED BY COMPETENT QUALIFIED PERSONNEL FAMILIAR WITH THE SUBJECT ENGINES AND ASSOCIATED AIRFRAMES, SPECIFICALLY THE ENGINE FUEL SYSTEM. FAILURE TO DO SO COULD RESULT IN ECONOMIC LOSS, EQUIPMENT DAMAGE, AND/OR PHYSICAL INJURY. USE ALL APPLICABLE LYCOMING ENGINES’ MAINTENANCE MANUALS AND/OR SERVICE DOCUMENTS IN CONJUNCTION WITH THIS HET BULLETIN AND THE APPLICABLE AIRFRAME MAINTENANCE MANUAL AND PILOT’S OPERATING HANDBOOK

Hartzell Engine Technologies Service Bulletin No. 203 dated August 28, 2023 is reprinted in its entirety as follows and is current at the time Lycoming Service Bulletin 655 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 203.

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.

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Service Bulletin

Service Bulletin No. 203

Undersized Turbocharger Journal Bearing

1. Planning Information

A. Effectivity

- (1) New, rebuilt, or overhauled Aeroforce turbochargers manufactured by Hartzell Engine Tech with journal bearing P/N 406902-0000 between 10/31/2022 and 5/17/2023 are affected by this Service Bulletin (SB).
 - (a) Table 1 contains turbocharger assembly P/Ns, S/Ns, and associated aircraft/engines affected by this SB.
- (2) All turbocharger kits containing journal bearing P/N 406902-0000 sold between 10/31/2022 and 5/17/2023 are affected by this SB.
 - (a) Table 2 contains turbocharger overhaul kit P/Ns affected by this SB.

NOTE: Aircraft and engine models found in Table 1 are for reference only. Table 1 is not an all-inclusive list of aircraft and engines affected by this SB. It is the responsibility of the owner/operator to verify whether an affected turbocharger 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.AEROFORCE.AERO FOR THE MOST RECENT REVISION LEVEL OF THIS SERVICE BULLETIN.

B. Concurrent Requirements

- (1) None

C. Reason

- (1) Hartzell Engine Tech has discovered that affected turbochargers and overhaul kits shipped between 10/31/2022 and 5/17/2023 may contain undersized journal bearing P/N 406902-0000.
 - (a) Under certain conditions, an undersized journal bearing could lead to premature bearing wear, reduction in engine power, and/or potential seizure of the turbocharger.

D. Description

- (1) This SB provides Instructions for Continued Airworthiness (ICA).
- (2) This SB is to advise the field of a known condition, supply inspection criteria to identify affected turbocharger assemblies, and provide corrective actions for affected turbochargers.

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E. Compliance

- (1) Affected Turbochargers with less than 50 hours time-in-service:
 - (a) Immediately perform a one-time inspection of the affected turbocharger in accordance with the Accomplishment Instructions of this SB.
- (2) Affected Turbochargers with more than 50 hours time-in-service:
 - (a) Compliance with this SB is not required.
- (3) Affected overhaul kits in inventory:
 - (a) Return affected overhaul kits to place of purchase. Refer to Table 2, this document.
- (4) Compliance with Accomplishment Instructions of this SB is the terminating action for this SB.

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 or by aircraft documentation review.
- (2) Up to one-half (.5) hour to perform a one-time inspection of the affected turbochargers.
- (3) Up to two (2) hours labor required for removal and installation of the turbocharger.

H. References

- (1) Applicable aircraft POH or AFM.
- (2) Aircraft maintenance manual (as applicable).
- (3) Engine Service Instructions or maintenance manual (as applicable).
- (4) *Aircraft Turbocharger Maintenance and Overhaul Manual*, HET P/N 400600-0000 Rev. D or latest FAA approved revision.

I. Other Publications Affected

- (1) None

J. Weight and Balance

- (1) No Change

2. Material Required

- A. One turbocharger assembly that is not affected by this Service Bulletin.

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Turbocharger P/N Affected	Turbocharger S/N Affected	Aircraft/Engine Make	Aircraft/Engine Model
465292-2	H-ACL00031 H-ACL00032	Textron Aviation Inc.	T182 S/N 1867716 and up, TR182 S/N R18200584 and up
466011-2	H-ZLL00125 H-ZLL00126 H-ZLL00127	Lycoming Engines	TIO-540-AF1A, TIO-540-AF1B, TIO-540-AG1A, TIO-540-AH1A
466011-9002*	H-ADR00025 H-ADR00026 H-ADR00027 H-ADR00028 H-ADR00029	Lycoming Engines	TIO-540-AF1A, TIO-540-AF1B, TIO-540-AG1A, TIO-540-AH1A
466304-3	H-ZLL00137 H-ZLL00138 H-ZLL00139 H-ZLL00140 H-ZLL00141 H-ABL00192 H-ABL00193 H-ABL00194 H-ABL00195 H-ABL00196 H-ABL00197	Continental Aerospace Technologies Inc.	TSIO-520-BE
466304-9003**	H-ABR00142 H-ABR00143	Continental Aerospace Technologies Inc.	TSIO-520-BE
<p>The Aircraft and engine models found in Table 1 are provided for reference only. The applicable aircraft/engine manufacturer's Type Certification information should be consulted as the official source.</p> <p>* -9002 P/N represents 466011-2 rebuilt assemblies.</p> <p>** -9003 P/N represents 466304-3 rebuilt assemblies.</p>			

Table 1 - Turbocharger P/N, S/N, and Aircraft/Engine Effectivity

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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 TURBOCHARGER 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/OR THE HET P/N 400600-0000 MAINTENANCE MANUAL. INFORMATION CONTAINED IN THESE MANUALS OR THIS SERVICE BULLETIN MAY BE SIGNIFICANTLY CHANGED FROM EARLIER REVISIONS. FAILURE TO COMPLY WITH THE 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 AEROFORCE WEBSITE (WWW.AEROFORCE.AERO) FOR THE MOST RECENT REVISION OF THE 400600-0000 MANUAL.

CAUTION 2: DO NOT DEPEND ON THIS SERVICE BULLETIN FOR GAINING ACCESS TO THE ENGINE OR TURBOCHARGER. 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. Turbocharger Identification

- (1) If positive identification of the turbocharger model and serial number can be made through the engine or aircraft documentation, and the turbocharger is affected per 1.A, continue to 3.C, Corrective Action. If the turbocharger is not affected, continue to 3.E, Maintenance Record.
- (2) If positive identification cannot be made through engine or aircraft documentation, use engine/airframe service instructions or maintenance manual to gain access to the turbocharger to verify effectivity by inspecting the turbocharger data tag.
 - (a) If the turbocharger is affected, proceed to section 3.C., Corrective Action.
 - (b) If the turbocharger is not affected, install any components removed to gain access in accordance with the latest engine/airframe service instructions or maintenance manual. Continue to 3.E, Maintenance Record.

B. Turbocharger Overhaul Kit Identification

- (1) Refer to Table 2 for affected turbocharger overhaul kits containing journal bearing P/N 406902-0000.

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Overhaul Kit P/N	Work Order Number *
465292-2, 4OHK	M521760
	M539140
	M594240
	M683290
465398-2OHK	M683300
466011-2OHK	M585130
	M645270
	M665190
	M683310
	M705810
4466304-3OHK	M493570
	M521700
	M521710
	M535540
	M539050
	M539060
	M539070
	M594170
	M594180
	M645290
	M664370
	M665150
	M665160
466642-1, 2OHK	M521780
	M534500
	M594220
	M665130
	M683280
* Refer to Figure 1, Overhaul Kit Label, for Work Order Number Identification	

Table 2 - Overhaul Kit Effectivity ((cont'd)

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Overhaul Kit P/N	Work Order Number *
466642-5OHK	M521740
	M539110
	M616950
	M633230
	M645220
	M665110
	M665120
466642-6OHK	M521720
	M539080
	M539090
	M568820
	M645280
	M683270
	M705800

* Refer to Figure 1, Overhaul Kit Label, for Work Order Number Identification

(cont'd) Table 2 - Overhaul Kit Effectivity (end)



Figure 1 - Overhaul Kit Label

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C. Corrective Action

(1) Turbocharger Repair

- (a) Remove the affected turbocharger in accordance with applicable aircraft/engine maintenance manual and service instructions.
- (b) Visually inspect each side of the turbocharger, both compressor and turbine, for evidence of scoring between associated wheel and housing interface.
 - 1) If evidence of scoring is observed, perform an engine oil and filter change in accordance with applicable aircraft/engine maintenance manual and service instructions.
- (c) Forward the affected turbocharger to an approved HET service facility per the instructions contained in Appendix I, Commercial Assistance, found at the end of this Service Bulletin.
- (d) Install the repaired turbocharger in accordance with applicable engine/airframe maintenance manual and service instructions. Continue to 3.D, Return to Service.

(2) Turbocharger Replacement

- (a) Remove the affected turbocharger in accordance with applicable aircraft/engine maintenance manual and service instructions.
- (b) Visually inspect each side of the turbocharger, both compressor and turbine, for evidence of scoring between associated wheel and housing interface.
 - 1) If evidence of scoring is observed, perform an engine oil and filter change in accordance with applicable aircraft/engine maintenance manual and service instructions.
- (c) Replace the turbocharger with a turbocharger assembly not affected by this SB in accordance with the engine/airframe maintenance manual and service instructions and continue to 3.D, Return to Service.

D. Return to Service

- (1) Close all doors and covers used to gain access to the turbocharger.
- (2) Perform the recommended turbocharger 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.

E. Maintenance Record

- (1) For terminating action, make an engine logbook entry to indicate compliance with this Service Bulletin.

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Undersized Turbocharger Journal Bearing

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

Rev. New: 28 Aug. 2023

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Service Bulletin Appendix

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1. Eligibility:

A. New, rebuilt, or overhauled Aeroforce turbochargers manufactured by Hartzell Engine Tech with journal bearing P/N 406902-0000 between 10/31/2022 and 5/17/2023 are affected by Service Bulletin 203.

(1) Table 1 of Service Bulletin 203 contains turbocharger assembly P/Ns, S/Ns, and associated aircraft/engines affected.

B. All turbocharger kits containing journal bearing P/N 406902-0000 sold between 10/31/2022 and 5/17/2023 are affected by Service Bulletin 203.

(1) Table 2 of Service Bulletin 203 contains turbocharger overhaul kit P/Ns affected.

2. Commercial Assistance Program:

The following will be provided with the submission of a completed Service Bulletin (SB) 203 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. 203.**

A. Parts sent to an authorized service center for repair of an affected turbocharger. Refer to Section 6.

B. Labor for inspection, removal, & installation compliance with SB 203 on an affected turbocharger will be paid at a shop rate of \$85 per hour, not to exceed US \$170 per affected turbocharger.

(1) Up to two (2.0) man hours of labor are needed for removal and replacement per affected turbocharger.

3. Commercial Assistance ADMINISTRATION:

A. Complete the Service Bulletin SB 203 Claim Form attached to this appendix.

(1) Mail, e-mail, or fax the SB 203 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 Tech LLC (HET) will:

(1) Ship the required material (HET parts) to the service provider indicated to repair the affected turbocharger.

(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 203 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 203 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 203 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
 - USA

6. AUTHORIZED SERVICE CENTERS

Quality Aircraft Accessories
5746 E Apache St.
Tulsa, OK 74115

Main Turbo
234 S. Cotta Court
Visalia, CA 93292 U.S.A.

Approved Turbo Components
663 2nd Lane
Vero Beach, FL 32962

Aero Recip
540 Marjorie Street
Winnipeg, Manitoba, Canada R3H 0S9

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SB 203 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: Turbocharger (TC) _____ Part Number: _____

Serial Number: _____ (TC) Date Removed: _____

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

For RMA Number

Send this SB 203 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: _____

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