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Alert Service Bulletin

Alert Service Bulletin No. 048 Rev. 3

**Turbocharger TA0411
P/N 410188-0019 Turbine Wheel Replacement**

This page transmits the revision of Alert Service Bulletin 048 Rev. 2 to Alert Service Bulletin Rev. 3, dated November 4, 2013.

- Revision ASB 048 Rev. New, dated November 16/12
- Revision ASB 048 Rev. 1, dated December 5/12
- Revision ASB 048 Rev. 2, dated July 22/13
- Revision ASB 048 Rev. 3, dated November 4/13

FAA approval has been obtained on technical data in this publication that affects type design.

Changes are shown by a change bar in the left or right margins coinciding with the change in the affected page.

Some of these changes that do not affect technical content may not be highlighted in this transmittal sheet.

This revision is issued to change the following:

- Revise 1.F(1) Approval - Add approval date for Rev. 3, change Airworthiness Directive 2012-24-09 to Airworthiness Directive 2013-21-02.

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1. Planning Information

A. Effectivity

- (1) Hartzell Engine Technologies LLC (HET) P/N 410188-0019 turbine wheels with serial numbers **H120716 through H121988** are affected by this Alert Service Bulletin (ASB).
- (2) HET model TA0411 turbochargers with part number and serial number listed in Table 1 and Table 2 are affected by this ASB.
- (3) HET model TA0411 turbochargers overhauled or repaired since August 29, 2012 using P/N 410188-0019 T-wheel with serial numbers **H120716 through H121988** are affected by this ASB.

TABLE 1 - Turbocharger Part Numbers Affected * (Field Repairs)

466642-0001	466642-9001
466642-0002	466642-9002
466642-0006	466642-9006

* For aid in identifying engine or aircraft model, see Table 3 Reference Guide.

TABLE 2 - Turbocharger Serial Numbers Affected (Factory Shipped)

Turbocharger P/N 466642-0001						
H-PGL00031	H-PGL00090					
Turbocharger P/N 466642-0002						
H-PFL00404	H-PFL00405	H-PFL00406	H-PFL00407	H-PFL00408	H-PFL00409	H-PFL00410
H-PFL00411	H-PFL00412	H-PFL00413	H-PGL00178	H-PGL00179	H-PHL00003	H-PHL00004
H-PHL00058	H-PHL00059	H-PHL00061	H-PHL00063	H-PHL00064		
Turbocharger P/N 466642-9002						
H-PFR00525	H-PFR00526	H-PFR00527	H-PGR00175	H-PGR00176	H-PGR00177	H-PIR00109
H-PIR00110	H-PIR00111	H-PIR00112	H-PIR00113	H-PIR00114		
Turbocharger P/N 466642-0006						
H-PFL00330	H-PFL00331	H-PFL00332	H-PFL00414	H-PFL00415	H-PFL00416	H-PFL00417
H-PFL00418	H-PFL00523	H-PFL00524	H-PGL00149	H-PGL00150	H-PGL00151	H-PGL00152
H-PGL00153	H-PGL00154	H-PGL00155	H-PHL00005	H-PHL00006	H-PIL00132	H-PIL00133
H-PIL00134						
Turbocharger P/N 466642-9006						
H-PFR00533						

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B. Concurrent Requirements

- (1) None

C. Reason

- (1) Hartzell Engine Technologies has discovered the potential for a compromised shaft to wheel head weld for HET P/N 410188-0019 T-wheel.
- (2) This condition may allow the turbocharger turbine head to separate from the shaft. This may result in rapid reduction in or complete loss of engine power. Additionally there is the possibility of the loss of engine oil and fire.
- (3) The affected turbocharger T-wheel must be removed from service and replaced with T-wheels outside of the affected serial number range.
- (4) Regulatory action is expected.

D. Description

- (1) This Service Bulletin provides Instructions for Continued Airworthiness (ICA).
- (2) This Alert Service Bulletin requires the removal from service of all affected HET P/N 410188-0019 turbocharger turbine wheel assemblies.

E. Compliance

- (1) For turbochargers in service with affected T-wheels, compliance is required before further flight.
- (2) This Alert Service Bulletin requires the replacement of all existing inventory of affected T-wheels. Compliance is required before installation and no later than Dec. 31, 2012.
- (3) Compliance with the Accomplishment Instructions is the terminating action for this Alert Service Bulletin.

F. Approval

- (1) This Alert Service Bulletin is approved by the Manager, FAA, Chicago Aircraft Certification Office, ACE 115C, by approval document dated November 4, 2013, as an alternative method of compliance with Airworthiness Directive 2013-21-02. Note that FAA AD 2013-21-02 supersedes AD 2012-24-09.

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G. Manpower

- (1) Refer to aircraft or engine labor time or service manuals for estimates regarding labor requirements. Refer to Appendix I.
- (2) Negligible for return of parts in inventory.
- (3) Four (4.0) man hours of labor are required for removal and replacement of an affected T-wheel from a turbocharger.

H. 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) HET 400600-0000 Turbocharger Overhaul & Maintenance Manual
- (2) Applicable Continental Motors or Lycoming engine maintenance manuals
- (3) Applicable aircraft maintenance manuals

I. Other Publications Affected

- (1) None

J. Weight and Balance

- (1) Not affected

2. Material Information

- (1) One each, repaired or replacement turbocharger shown in Table 1 as applicable to your turbocharger.
- (2) One each, replacement Turbocharger T-wheel, HET P/N 410188-0019.

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

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A. Inspection

CAUTION: DO NOT RELY ON THE AIRCRAFT OR THE ENGINE PAPERWORK ALONE WHEN IDENTIFYING THE TURBOCHARGER SERIAL NUMBER.

- (1) If needed, access the aircraft turbocharger in accordance with the instructions contained in the aircraft maintenance manual.
- (2) Locate the turbocharger part number and serial number found on the data plate and determine if it is an affected part number and/or serial number. Refer to Table 1 & 2.
 - (a) If the turbocharger serial number **is not listed** in Table 2 and an overhaul or repair has **not** been performed since August 29, 2012, proceed to “Return to Service” 3.C.(3).
 - (b) If the serial number **is listed** in Table 2, continue with Corrective Action 3.B(1).
 - (c) If the turbocharger was overhauled or repaired between August 29, 2012 and November 16, 2012 and the HET P/N 410188-0019 T-wheel was replaced, then determine if the serial number etched on the T-wheel shaft is affected. This may be done by removing the oil drain fitting and with adequate lighting, observing the shaft. (see Fig. 1).
 - (i) If an affected serial number is found, continue with Corrective Action 3.B(1).
 - (ii) If an affected serial number **is not** found, reconnect the oil drain fitting per applicable aircraft and/or engine manufacturer’s maintenance manuals or service instructions. Proceed to “Return to Service” 3.C.(3).
- (3) Identify affected T-wheel Piece Part
 - (a) Examine the turbocharger T-wheel by observing serial number etched on the T-wheel shaft. If a serial number is found in the range of **H120716 through H121988**, the T-wheel is affected. If found in inventory as piece part or as part of a complete turbocharger assembly, continue with Corrective Action 3.B(3).

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B. Corrective Action:

- (1) If it has been determined that an affected T-wheel is installed:
 - (a) The turbocharger must be removed and suitable arrangements made to replace the T-wheel or turbocharger. Remove in accordance with the applicable aircraft and/or engine manufacturer's maintenance manuals or service instructions. ***If returning the turbocharger to HET, do not send with fittings, oil reservoir, or other engine or airframe parts as they cannot be returned.***
- (2) Return any affected turbocharger T-wheel HET P/N 410188-0019 within thirty (30) days from the date of this Alert Service Bulletin. Refer to 1.A.(1).
- (3) Prior to installation of a repaired turbocharger, please check that the unit is received in undamaged condition with proper paperwork.
- (4) Utilizing the applicable aircraft and/or engine manufacturer's maintenance manuals or service instructions, re-install the turbocharger assembly and proceed to "Return to Service".

C. Return to Service

- (1) After the turbocharger has been properly installed, the aircraft will be ready for "return to service".
- (2) Perform the recommended turbocharger operational tests in accordance with Hartzell Engine Technologies Service Bulletin 023.
 - (a) The operational tests consist of turbocharger pre-lubrication, ground running tests, and operational flight test.
 - (b) Make sure air, exhaust, or oil leaks are not present.
- (3) Using the applicable aircraft and engine manufacturer's maintenance manuals of the latest revision, install any portion of the aircraft that was removed to gain access.

D. Upon successful completion of this Alert Service Bulletin per the applicable compliance listed, make an appropriate log book entry noting compliance with this Alert Service Bulletin as terminating action.

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4. Contact Information:

- A. All communications regarding this ASB, must be placed either through Hartzell Engine Technologies Technical Support at (334)-386-5441 or (888) 461-6077, for international calling +1 (334)-386-5441. If by Fax use (334) 386-5450.
- B. Written communications must be placed through Hartzell Engine Technologies Technical Support, 2900 Selma Highway, Montgomery, AL 36108, USA.
- C. If E-mail communication is desired, go to our website:<http://www.hartzellenginetech.com> and select "contact" and follow the instructions.
- D. If returning the T-wheel or turbocharger for repair or replacement, refer to Appendix 1.

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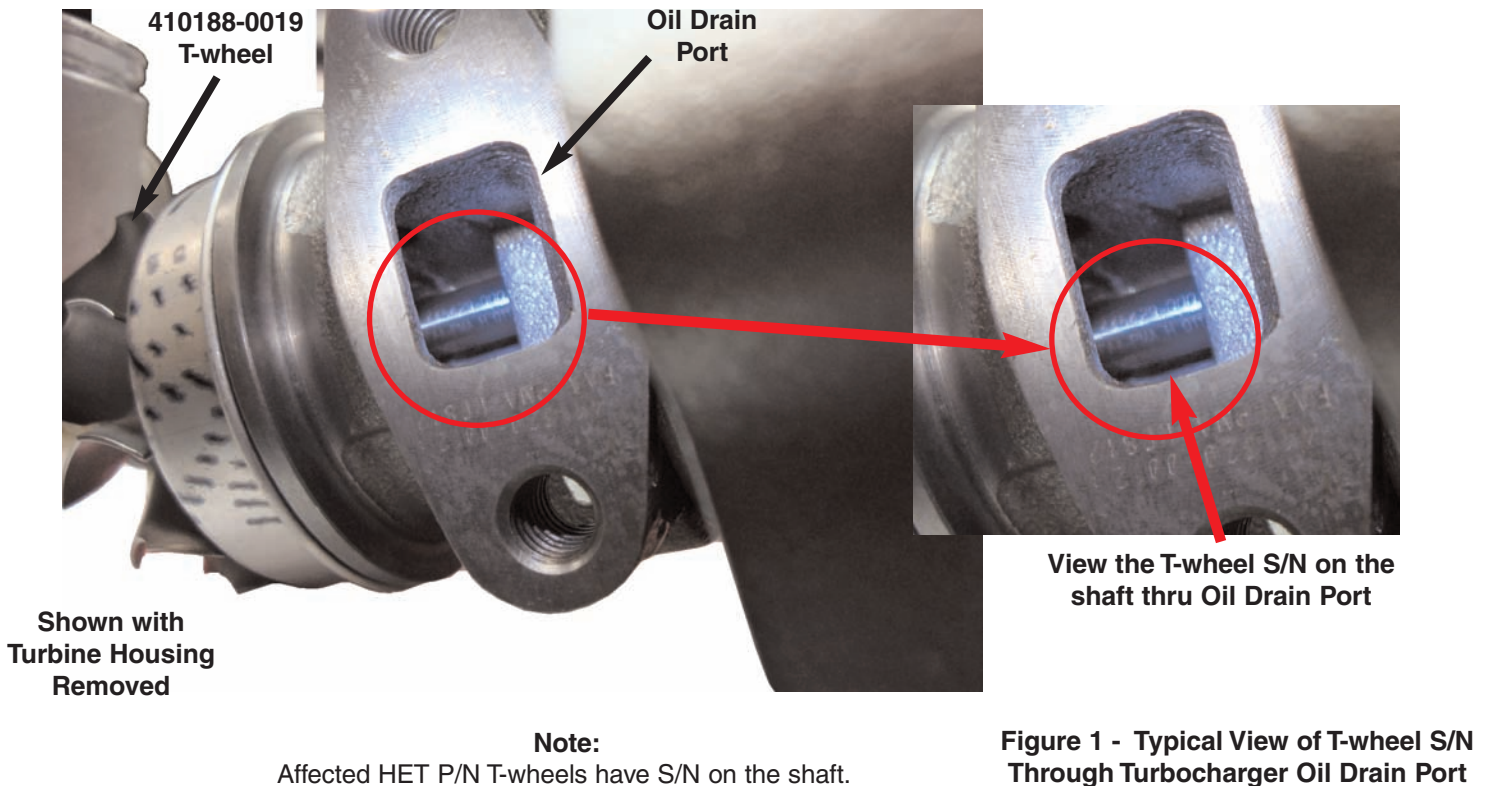
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Table 3 - Aircraft / Engine Reference Guide*

Turbocharger P/N	Engine Model	Engine P/N	Aircraft Models
466642-0001	TSIO-360-MB, -SB	649151-1 (CMI)	Mooney Encore
466642-9001	TSIO-360-MB, -SB	649151-1 (CMI)	Mooney Encore
466642-0002	TSIO-360-RB LTSIO-360-RB	649151-2 (CMI)	Piper Seneca V - PA34-220T
466642-9002	TSIO-360-RB LTSIO-360-RB	649151-2 (CMI)	Piper Seneca V - PA34-220T
466642-0006	TIO-540-AK1A (LYC)	46C22924 (LYC)	Cessna T182T
466642-9006	TIO-540-AK1A (LYC)	46C22924 (LYC)	Cessna T182T

* Use for reference purposes only. Aircraft/engines listed are inclusive of but not limited to these models.



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