

#### 2900 Selma Highway Montgomery, AL 36108 USA Tel: 334-386-5400 Fax: 334-386-5450

## ALERT SERVICE BULLETIN Alert Service Bulletin No. 074

- 1. Planning Information
  - A. Effectivity
    - (1) Aeroforce turbocharger center housings P/N 441320-12 manufactured by Hartzell Engine Technologies (HET) are affected by this Alert Service Bulletin (ASB).
      - (a) All turbocharger center housings P/N 441320-12 shipped between 10 May, 2017 and 01 Nov, 2017 as service parts are affected by this ASB. Refer to Table 2 for affected turbocharger center housing serial numbers.
        - **NOTE:** Serial numbers found in Table 2 may or may not be preceded by the letter "H" as shown in Figure 3.
      - (b) All turbochargers that were assembled by HET using center housing P/N 441320-12 between 05 May, 2017 and 01 Nov, 2017 are affected by this ASB. Refer to Table 3 for a list of affected turbocharger serial numbers.
      - (c) Aircraft Type/Model and turbocharger part numbers potentially affected by this ASB are shown in Table 4.
        - **NOTE:** Table 4 is for reference only and is not an inclusive listing of aircraft affected by this ASB. 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  - WARNING: DO NOT USE OBSOLETE OR OUTDATED INFORMATION.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 ALERT SERVICE BULLETIN. INFORMATION CONTAINED HEREIN MAY BE SIGNIFICANTLY CHANGED FROM EARLIER REVISIONS. FAILURE TO COMPLY WITH THIS ALERT 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 LEVEL OF THIS ALERT SERVICE BULLETIN.
  - B. Concurrent Requirements
    - (1) None

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- C. Reason
  - Hartzell Engine Technologies has discovered that turbocharger center housing P/N 441320-12 shipped between 10 May, 2017 and 01 Nov, 2017 may contain undersized bearing bores.
  - (2) Under certain conditions, an undersized bearing bore could lead to premature bearing wear and potential seizure of the turbocharger.
- D. Description
  - (1) This ASB provides Instructions for Continued Airworthiness (ICA).
  - (2) This Alert Service Bulletin provides instructions for inspection and replacement of affected turbocharger center housing P/N 441320-12.
- E. Compliance
  - (1) Single Engine Aircraft
    - (a) Single engine aircraft with affected turbochargers that produce equal to or less than thirty (30) inches manifold air pressure (MAP) during take-off (turbonormalized), compliance is required within ten (10) hours time-in-service from the effective date of this ASB or at the next regularly scheduled inspection, whichever occurs first.
    - (b) Single engine aircraft with affected turbochargers that produce greater than thirty (30) inches MAP during take-off (turbosupercharged), compliance is required prior to next flight.
  - (2) Multi Engine Aircraft
    - (a) Multi engine aircraft with affected turbochargers, compliance is required within twenty-five (25) hours time-in-service from the effective date of this ASB or at the next regularly scheduled inspection, whichever occurs first.
  - (3) Service Parts
    - (a) This Alert Service Bulletin requires the replacement of all existing inventory of affected turbocharger center housings. Compliance is required prior to installation but no later than ninety (90) days from the original publication date of this Alert Service Bulletin.
  - (4) Compliance with the Accomplishment Instructions is the terminating action for this Alert Service Bulletin.

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- F. Approval
  - (1) FAA acceptance has been obtained on the technical data in this publication that affects type design.
- G. Manpower
  - (1) Three (3.0) man hours of labor are needed for removal, inspection, and replacement of an affected center housing from a turbocharger.
  - (2) Four and one half (4.5) man hours of labor are needed for removal and installation of the turbocharger.
- H. References
  - (1) HET 400600-0000 Rev. B or later FAA approved revision Turbocharger Overhaul & Maintenance Manual
  - (2) Applicable aircraft POH or AFM
  - (3) Aircraft maintenance manual (as applicable).
- I. Weight and Balance
  - (1) No Change
- 2. Material Required
  - A. New or factory reworked turbocharger center housing P/N 441320-12.
  - B. Refer to Table 1A thru 1C for rework material, including kit part numbers, required to correct turbocharger assemblies affected by this ASB.

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### **Turbocharger Center Housing Inspection**

Turbocharger P/N	Quantity	Description	Part Number
TA0401 ,TA0402, &	1	Compressor Wheel Locknut	400768-11
TA3601	1	Ring, Piston	408049-2
465292(-0,-9)002 465292(-0,-9)004 466304(-0,-9)003 465398-(0,-9)002	4	Bolt; Back Plate	400834-202
	1	Seal Ring; Cnt. Hsg. To Back Plate	400424
	1	Ring, Piston; Seal	403818-9
	4	Retaining Ring	400568
	2	Pin, Spring; Anti-Rotation	400705

#### Material Required: Kit P/N 79906 Table 1A

Turbocharger P/N	Quantity	Description	Part Number
TA0411	6	Self-Locking Bolt; Compressor Side	400975-303
	1	Compressor Wheel Locknut	400768-11
466642(-0,-9)001 466642(-0,-9)002 466642(-0,-9)005 466642(-0,-9)006	1	Ring, Piston	408049-2
	4	Bolt; Back Plate	400834-202
	1	Seal Ring; Cnt. Hsg. To Back Plate	400424
	1	Ring, Piston; Seal	403818-9
	4	Retaining Ring	400568
	2	Pin, Spring; Anti-Rotation	400705

#### Material Required: Kit P/N 79907 Table 1B

Turbocharger P/N	Quantity	Description	Part Number
TA0413	1	Compressor Wheel Locknut	444205-1
	1	Ring, Piston	408049-2
466011(-0,-9)002	4	Bolt; Back Plate	400834-202
	1	Seal Ring; Cnt. Hsg. To Back Plate	400424
	1	Ring, Piston; Seal	403818-9
	4 Retaining Ring		400568
	2	Pin, Spring; Anti-Rotation	400705

#### Material Required: Kit P/N 79908 Table 1C

**NOTE:** Remaining parts may be reused if inspected and found to be in good condition.

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### **Turbocharger Center Housing Inspection**

#### 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 ALERT SERVICE BULLETIN. INFORMATION CONTAINED HEREIN MAY BE SIGNIFICANTLY CHANGED FROM EARLIER REVISIONS. FAILURE TO COMPLY WITH THIS ALERT 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 FOR THE MOST RECENT REVISION LEVEL OF THIS ALERT SERVICE BULLETIN, WWW.AEROFORCE.AERO.
- **CAUTION:** REFER TO THE APPLICABLE MANUFACTURER'S MAINTENANCE MANUALS OR SERVICE INSTRUCTIONS TO GAIN ACCESS TO THE AIRFRAME OR TURBOCHARGER. 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 turbocharger or center housing has been installed. Refer to Tables 2 & 3 of this ASB for affected serial numbers.
    - **NOTE:** Serial numbers found in Table 2 may or may not be preceded by the letter "H" as shown in Figure 3.
    - (a) If the center housing serial number is affected per Table 2 or the turbocharger is affected per Table 3, continue to "Corrective Action" 3.B.(1).
  - (2) If effectivity of the turbocharger cannot be established using aircraft or engine maintenance records, utilize the the applicable aircraft maintenance manual to gain access to the turbocharger and inspect the turbocharger serial number against affected serial numbers found in Table 3 of this ASB.

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- **NOTE :** The turbocharger data tag can be found in one of two locations depending on model. Refer to Figures 1 & 2 for locations.
- (a) If the turbocharger serial number is affected per 1.A, continue to "Corrective Action" 3.B.(1).
- **NOTE:** If the turbocharger was field repaired or overhauled between 10 May, 2017 and the effective date of this ASB, it could contain an affected center housing regardless of turbocharger serial number.
- (3) If the turbocharger was serviced between 10 May, 2017 and the effective date of this ASB, and effectivity cannot be established from the maintenance records, utilize the applicable aircraft maintenance manual to gain access to and remove the turbocharger center housing oil drain line from (lower) flange. Inspect turbocharger center housing serial number against affected serial numbers found in Table 2 of this ASB. (See Figure 3 for serial number illustration)
  - **NOTE:** Serial numbers found in Table 2 may or may not be preceded by the letter "H" as shown in Figure 3.
  - (a) If the center housing serial number is affected per 1.A, continue to "Corrective Action" 3.B.(1).
  - (b) If the center housing serial number is not affected per 1.A, reinstall oil drain reservoir onto turbocharger center housing lower port per applicable maintenance manual and continue to "Maintenance Record" 3.D.(1)
- B. Corrective Action
  - **NOTE:** HET requires that turbocharger repair be accomplished by an FAA certificated repair station (or foreign equivalent) or certificated A & P mechanic experienced in servicing turbocharger systems utilizing the turbocharger overhaul manual, HET P/N 400600-0000 Rev. B or later FAA approved revision.
  - (1) Affected turbochargers and/or center housings
    - (a) Replace turbocharger center housing with one not associated with this ASB.
      - <u>1</u> Replacement center housing may be new or factory reworked.
      - 2 Factory reworked center housings will be identified by a laser etched "B" located on the side of the oil drain flange (See Figure 4).

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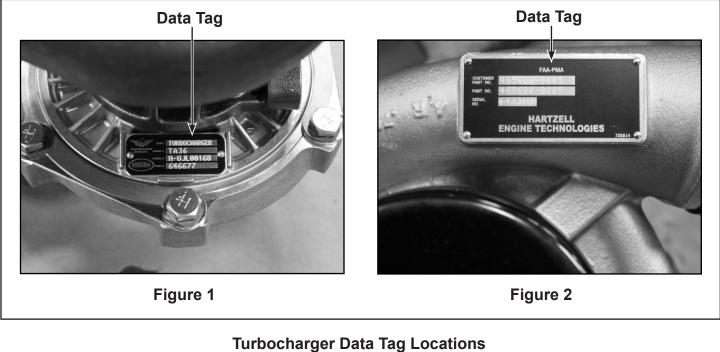
### **Turbocharger Center Housing Inspection**

- C. Return to Service
  - (1) Reinstall turbocharger in accordance with the applicable airframe and/or engine maintenance manual.
  - (2) Perform the recommended turbocharger operational tests in accordance with the aircraft AFM or POH.
- D. Maintenance Record
  - (1) For terminating action, make an aircraft logbook entry to indicate compliance with this ASB.
- 4. Contact Information
  - A. Contact HET Product Support for all communications regarding the technical content of this Alert 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

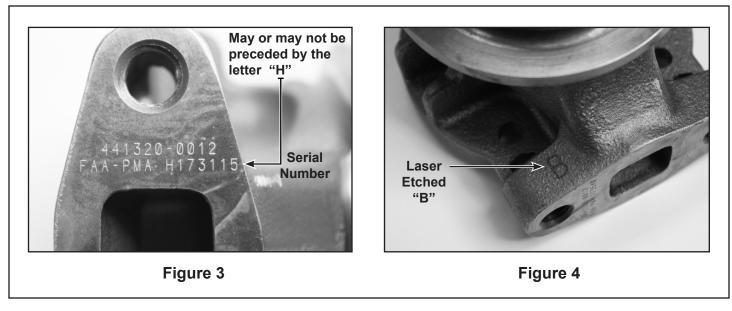
Hartzell Engine Technologies LLC - ATTN: Product Support 2900 Selma Highway Montgomery, AL 36108 USA

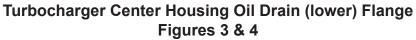
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### **Turbocharger Center Housing Inspection**



Figures 1 & 2





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Affected Turbocharger Center Housing Serial Number Listing						
Table 2           *** NOTE: Serial number on center housing may or may not be preceded by the letter "H" ***						
170794	171549	171606	171657	172277	172681	
170795	171552	171607	171658	172284	172682	
170796	171553	171608	171660	172286	172808	
170799	171555	171609	171663	172287	172820	
170800	171557	171610	171954	172288	172825	
170801	171560	171611	172227	172289	172830	
170802	171561	171613	172228	172290	172833	
170806	171562	171614	172230	172291	172834	
170808	171563	171616	172231	172292	172835	
170859	171566	171617	172232	172295	173111	
170860	171568	171618	172234	172450	173117	
170863	171573	171619	172236	172451	173119	
170864	171576	171620	172237	172456	173126	
170865	171577	171621	172238	172459	173129	
170866	171578	171622	172240	172461	173130	
170867	171579	171623	172242	172462	173131	
170869	171581	171624	172244	172466	173133	
170870	171583	171625	172245	172469	173134	
170871	171584	171626	172246	172470	173137	
170874	171585	171628	172247	172472	173138	
170875	171586	171631	172248	172473	173141	
170876	171587	171633	172249	172474	173142	
170877	171589	171634	172250	172478	173143	
170879	171590	171635	172251	172479	173146	
170880	171591	171637	172252	172481	173147	
170882	171593	171638	172253	172484	173148	
170883	171594	171639	172254	172652	173151	
170884	171595	171641	172255	172654	173153	
170885	171596	171642	172256	172655	173154	
170887	171597	171643	172258	172656	173156	
170890	171598	171646	172259	172659	173159	
170891	171600	171648	172260	172660	173173	
170892	171601	171649	172261	172662	173174	
170896	171602	171651	172262	172663	173175	
171546	171603	171653	172263	172666	173177	
171547	171604	171655	172264	172672		
171548	171605	171656	172270	172673		

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Affected Turbocharger (Assembly) Serial Number Listing						
Table 3						
H-UEL00054	H-UER00013	H-UFL00059	H-UFR00047	H-UGL00001	H-UGR00053	
H-UEL00055	H-UER00014	H-UFL00061	H-UFR00048	H-UGL00002	H-UGR00055	
H-UEL00056		H-UFL00063	H-UFR00049	H-UGL00003	H-UGR00056	
H-UEL00057		H-UFL00066	H-UFR00050	H-UGL00004	H-UGR00120	
H-UEL00058		H-UFL00067	H-UFR00086	H-UGL00005	H-UGR00123	
H-UEL00059		H-UFL00068	H-UFR00088	H-UGL00006	H-UGR00124	
H-UEL00060		H-UFL00069	H-UFR00089	H-UGL00007		
H-UEL00073		H-UFL00070	H-UFR00090	H-UGL00008		
H-UEL00074		H-UFL00071	H-UFR00119	H-UGL00009		
H-UEL00113		H-UFL00072	H-UFR00120	H-UGL00011		
H-UEL00114			H-UFR00121	H-UGL00012		
H-UEL00115			H-UFR00122	H-UGL00032		
H-UEL00117			H-UFR00124	H-UGL00059		
H-UEL00118				H-UGL00060		
H-UEL00119				H-UGL00061		
H-UEL00120				H-UGL00062		
H-UEL00121				H-UGL00063		
H-UEL00122				H-UGL00064		
H-UEL00123				H-UGL00102		
H-UEL00124				H-UGL00105		
H-UEL00126				H-UGL00172		
H-UEL00129						

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Affected Turbocharger (Assembly) Serial Number Listing								
	Table 3 (cont'd)           H-UHL00127         H-UIL00004         H-UIR00132         H-UJL00089         H-UJR00011         -							
H-UHL00127					-			
	H-UIL00005	H-UIR00133	H-UJL00090	H-UJR00012				
H-UHL00129	H-UIL00006	H-UIR00137	H-UJL00091	H-UJR00085				
H-UHL00130	H-UIL00007	H-UIR00164		H-UJR00096 H-UJR00097				
H-UHL00131 H-UHL00132	H-UIL00008 H-UIL00009			H-UJR00097				
	H-UIL00010			H-UJR00104				
	H-UIL00011			H-UJR00104				
	H-UIL00012			H-UJR00105				
	H-UIL00013			H-UJR00107				
	H-UIL00014			H-UJR00118				
	H-UIL00015			H-UJR00119				
	H-UIL00039			H-UJR00120				
	H-UIL00040			H-UJR00121				
	H-UIL00041							
	H-UIL00042							
	H-UIL00043							
	H-UIL00044							
	H-UIL00046							
	H-UIL00048							
	H-UIL00050							
	H-UIL00105							
	H-UIL00126							
	H-UIL00127							
	H-UIL00128							
	H-UIL00129							
	H-UIL00188							

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### **Turbocharger Center Housing Inspection**

Center Housing Part Number	Turbocharger Assembly Part Number	Engine Model	Aircraft Model	Aircraft Make
441320-0012	465292-(0, 9)001	TSIO-360-H	T337 (78 - 80)	Cessna Aircraft
	465292-(0, 9)002	0-540-L3C5D	T182	Cessna Aircraft
	+03232-(0, 3)002	0-540-L3C5D	TR182	Cessna Aircraft
	465292-(0, 9)004	TSIO-520-T	T188C	Cessna Aircraft
		(L)TO-360-E1A6D	PA44-180T	Piper Aircraft
		TSIO-550-E	A500	Adam Aircraft
		TSIO-550-C	LC41-550FG	Cessna Aircraft
		TSIO-550-C	T240 (TTx)	Cessna Aircraft
		TSIO-550-K	SR22T	Cirrus Aircraft
	465398-(0, 9)002	IO-550-N	TAT Cirrus SR22	Cirrus Aircraft
		TSIOF-550-K	KC-100 Naraon	Korea Aerospace Industries
		TSIO-550-B	Lancair IV & IVP	Lancair
		TSIO-550-E	Lancair IV & IVP	Lancair
		TSIO-550-G	M20TN Acclaim	Mooney International
		TSIO-550-C	Malibu Conversion	Piper Aircraft
		TIO-540-AG1A	114TC	Commander Aircraft Group
	466011-(0, 9)002	TIO-540-AG1A	115TC	Commander Aircraft Group
		TIO-540-AF1A	M20M (TLS)	Mooney International
		TIO-540-AF1B	M20M (TLS Bravo)	Mooney International
		TIO-540-AH1A	PA32-301T, Saratoga	Piper Aircraft
	466642-(0, 9)001	TSIO-360-SB	Mooney Encore	Mooney International
	466642-(0, 9)002	(L)TSIO-360-RB	PA-34-220T, Seneca V	Piper Aircraft
	466642-(0, 9)005	IO-360-A1B6, A1B6D	177RG	Cessna Aircraft
	400042-(0, 9)005	TIO-540-AE2A	PA46-350P	Piper Aircraft
	466642-(0, 9)006	TIO-540-AK1A	T182T	Cessna Aircraft

#### Type/Model Aircraft Effectivity Table 4

**NOTE:** Turbochargers with HET part numbers ending with -0xxx are New. Turbochargers ending with -9xxx are Factory Rebuilt.

## **Alert Service Bulletin Appendix**

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### **Turbocharger Center Housing Inspection**

#### 1. ELIGIBILITY:

- A. Turbochargers with an affected P/N 441320-12 Center Housing installed.
- B. Affected Turbocharger Center Housing P/N 441320-12 shipped as parts.

#### 2. COMMERCIAL ASSISTANCE PROGRAM:

The following will be provided with the submission of a completed ASB 074 Claim Form, copies of invoices showing breakdown of labor charges and log book entries. Any commercial assistance or other consideration shall expire twelve (12) calender months from the original published date of ASB 074.

Turbochargers containing an affected P/N 441320-12 Center Housing will be eligible for the following:

- A. Factory Rework
  - (1) Upon receipt of an eligible turbocharger, HET will disassemble, rework an affected center housing, reassemble, balance, and return the turbocharger freight prepaid.
  - (2) Provide up to 4.5 hours labor allowance for removal and installation of the turbocharger from the aircraft paid at shop rate of up to US\$75 per hour, not to exceed US\$337.50.
- B. Field Repair
  - (1) Upon receipt of an eligible center housing from a certificated turbocharger repair station, HET will rework or replace the center housing, at HET's option, and provide the appropriate parts kit as noted in ASB 074 at no charge.
  - (2) Provide up to a 3.0 hour labor allowance for disassembly, inspection, and re-assembly of an eligible turbocharger at a certificated turbocharger repair station at a shop rate of up to US\$75 per hour, not to exceed US\$225 per turbocharger.
    - (a) If field repair is desired, HET suggests use of a Recommended Service Facility for this work. A recommended facility is listed below.

Quality Aircraft Accessories 5746 East Apache Street Tulsa, OK 74115, USA. E-mail websales1@qaa.com

(3) Provide up to 4.5 hour labor allowance for removal and installation of the turbocharger from the aircraft paid at shop rate of up to US\$75 per hour, not to exceed US\$337.50.

#### 3. COMMERCIAL ASSISTANCE ADMINISTRATION:

- A. Complete the Alert Service Bulletin ASB 074 Claim Form attached to this appendix.
  - (1) Mail, e-mail, or fax the ASB 074 Claim Form to the attention of Product Support as indicated on the Alert Service Bulletin Claim Form.
  - (2) Customer must obtain an RMA approval number from HET before returning an affected turbocharger or center housing for factory repair.
- B. Upon receipt of the Alert Service Bulletin Claim Form and the affected turbocharger or center housing, HET will provide the rework as indicated above.

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### **Turbocharger Center Housing Inspection**

- C. For labor charges:
  - (1) Aircraft service facility to submit an invoice up to the amount specified in section 2.A.(2) and copies of logbook entries for reimbursement.
  - (2) Approved turbocharger service facility to submit an invoice up to the amount specified in section 2.B.(2) and return of the affected center housing.

#### 4. WARRANTY STATEMENT:

- A. The sole warranty for the actions of ASB 074 is contained in the HET Limited Warranty Policy issued with the purchase of each new/rebuilt turbocharger or piece part (see terms and conditions therein).
- B. Commercial assistance may apply as stated in this Appendix.
- C. Issuance of ASB 074 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 turbocharging system.

#### 5. CONTACT INFORMATION:

- A. Contact HET Product Support for all communications regarding the technical content of this Alert Service Bulletin.
  - (1) Phone +1.334.386.5441
  - (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.

6. SHIPPING INFORMATION:

If a turbocharger or center housing is being returned, the part must be securely packaged so damage will not occur in shipping. A copy of the properly completed ASB 074 Claim Form for each affected part must be placed inside the shipping container. All parts must be received undamaged. Next day shipping of eligible product to HET will be reimbursed.

Ship To: Hartzell Engine Technologies LLC 2900 Selma Highway Montgomery, AL 36108, USA.

Attn: PRODUCT SUPPORT DEPT / ASB 074



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2900 Selma Highway Montgomery, AL 36108 USA Tel: 334-386-5400 Fax: 334-386-5450

#### **Turbocharger Center Housing Inspection**

ASB 074 CLAIM FORM

Owner information			
Name:	Date:	Tel:	Fax:
Company Name:		E-mail:	
Address:			
City:	State:	Postal Code:	
Country:			
Aircraft Service Facility information			
Name:			
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:
Turbocharger Service Facility i Name:		Tel:	Fax:
Company Name:			
Address:			
City:			
Country:			
Product or Component Informa	ition		
Nomenclature: <u>Turbocharger / Cent</u> (circle one)	<u>er Housing</u>	Part Number:	
Serial Number:	(Turbocharger)		
Part Time in Service:	(Turbocharger)	Date Installed:	Date Removed:
Send this ASB 074 Claim Form to:			
Hartzell Engine Technologies Produ Fax: +1.334.386.5450 E-mail: techsupport@hartzellengine			
Hartzell Use Only - do not write be	elow this line.		
Warranty No:		Authorized by:	