

TURBOCHARGER EXHAUST FLANGE INSPECTION AND/OR TURBINE HOUSING REPLACEMENT (TCM)

REASON FOR REVISION: To clarify effectivity by including RAM P/N 2059-1 cross reference.

INTRODUCTION:

It has come to the attention of Kelly Aerospace Power Systems (KAPS) that a possible interference condition may exist between the turbocharger turbine exhaust outlet flange area and the mating flange of the airframe exhaust tube. The piloted type exhaust tube flange may contact the filet radius of the turbine housing relief cut not allowing the two flange faces to meet properly. (see Figure 3 on page 4) Turbine housings manufactured between August 25, 2006 and January 25, 2008 are suspect. If this condition exists, exhaust pipe security may be compromised. While the exhaust outlet side of the turbocharger turbine has relatively low pressures, the potential of an exhaust leak, a loosening of the "V" band clamp, and a rise of temperature within the engine cowling exist. Left uncorrected, failure of the "V" band clamp may occur with possible loss of the tail pipe connection with resultant uncontained hot exhaust gas within the engine cowl.

This Service Bulletin is being issued to mandate the inspection and/or replacement of affected turbocharger turbine housing(s) P/N 441977-0023 or 441977-0025 as found on KAPS turbochargers per the serial numbers found in the table below.

COMPLIANCE:

Within the next ten (10) hours time in service or at the next regularly scheduled maintenance event or annual inspection which ever occurs first.

EFFECTIVITY:

Any Cessna **P210** Pressurized Centurion utilizing a Teledyne Continental Motors (TCM) TSIO-520-AF or TSIO-520-P engine with a Cessna P/N C295001-0202 (465680-0004) turbocharger. Any Cessna **404** Titan utilizing a TCM GTSIO-520-M engine with a TCM P/N 641672-2 (465930-0002) turbocharger. Any Cessna **414** utilizing a TCM TSIOL-550-A, C engine with a TCM P/N 652964 (466412-0003) turbocharger. Any Cessna **421** Golden Eagle utilizing a TCM GTSIO-520-L,N engine with a TCM P/N 641672-3 (465930-0003) turbocharger. Any **RAM** Modification using a 466412-0004 (RAM P/N 2059-1) turbocharger.

Suspect Serial Numbers For:

Turbocharger P/N **465930-0003** (TCM 641672-3) with GTSIO-520-L,N engine, P/N **466412-003**

JHL00386	JHL00387	JHL00388	JHL00389	JHL00390	JHL00391	JHL00392	JHL00393
JHL00394	JHL00395	JHL00396	JHL00397	JHL00398	JHL00399	JHL00400	JIL00284
JIL00285	JIL00286	JIL00287	JIL00288	JIL00289	JIL00290	JIL00291	JIL00292
JIL00293	JIL00905	JIL00906	JIL00907	JIL00908	JIL00909	JIL00910	JIL00911
JIL00912	JIL00913	JKL00023	JKL00024	JKL00025	JLL00176	JLL00177	JLL00490
JLL00491	JLL00492	JLL00493	JLL00494	KAL00167	KAL00168	KAL00252	KAL00253
KAL00254	KAL00255	KAL00256	KAL00452	KAL00453	KAL00454	KAL00455	KAL00456
KBL00271	KBL00272	KBL00273	KBL00274	KBL00275	KBL00276	KBL00277	KCL00846
KCL00847	KCL00848	KCL00849	KCL00850	KCL00851	KCL00852	KCL00853	KEL00044
KEL00045	KFL00129	KFL00151	KGL00225	KGL00226	KGL00227	KHL00321	KHL00322
KHL00323	KHL00324	KHL00325	KHL00326	KHL00327	KHL00328	KHL00329	KHL00330
KHL00331	KHL00452	KHL00453	KIL00157	KIL00158	KIL00159	KIL00160	KIL00161
KIL00162	KIL00163	KIL00164	KIL00165	KIL00758	KIL00759	KIL00760	KIL00763
KIL01235	KIL01236	KIL01237	KIL01238	KIL01239	KIL01240	KIL01444	KIL01445
KIL01446	KIL01447	KIL01448	KIL01449	KJL00027			

(TCM 652964) with TSIOL-550-A, C engine, and P/N **466412-0004** (RAM P/N 2059-1), as used in any RAM modification only). (Utilizing P/N 441977-0023 turbine housings.)

Suspect Serial Numbers For:

JJL00128	JJL00129	JJL00130	JJL00661	JJL00662	JKL00026	JLL00173	JLL00175
KDL00037	KDL00942	KDL00943	KDL00944	KDL00945	KGL00132	KGL00183	KIL00590
KIL00632	KIL00633	KIL00634					

Turbocharger P/N **465680-0004** (Cessna C295001-0202) with a TSIO-520-AF or TSIO-520-P engine and P/N **465930-0002** (TCM 641672-2) with a GTSIO-520-M engine. (Utilizing P/N 441977-0025 turbine housings.)

PROCEDURE:

CAUTION:

This procedure must be performed by competent and qualified personnel familiar with engine and airframe maintenance activities that are specific to turbocharged aircraft.

CAUTION:

Do not depend on this Service Bulletin for gaining access to the aircraft or engine. This will require that you use the applicable manufacturers maintenance manuals or service instructions. In addition, any preflight or in flight operational checks require use of the appropriate AFM or POH.

INSPECTION:

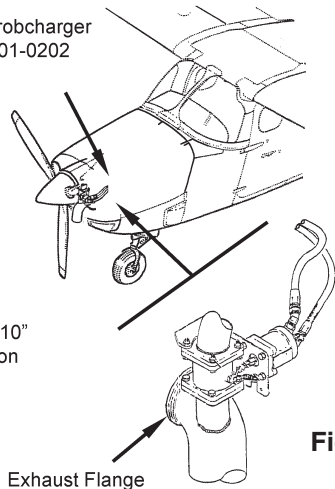
NOTE:

If the turbocharger installed on the engine(s) can be positively identified **as not being affected** by this service bulletin using the aircraft log books or other certified aircraft paperwork, no further action is necessary. If it cannot be established positively, then inspection of the data tag will be required.

1. Access the aircraft turbocharger by removing the cowling as required in accordance with the instructions contained in the Cessna Aircraft maintenance manual. Refer to appropriate aircraft in Figure 1.
2. Identify the affected turbocharger by checking data tag for part number and serial number and comparing to the suspect serial number table on page 2. If the turbocharger is affected continue with these instructions, if not, proceed to the "Return to Service" section step 3 and 4.
3. Carefully remove the "V" band clamp from around the turbocharger turbine housing at the turbocharger exhaust outlet taking care not to move the exhaust tube and tail pipe assembly. Figure 2 shows a "V" band clamp improperly installed, notice gap and clamp riding up on flange.
4. Inspect the turbocharger turbine housing at the flange area captured by the "V" band clamp. Use a feeler gauge at the split line between the turbine housing flange and the exhaust tube flange all around the circumference. The maximum gap should not exceed .005 inch at any point. **If you suspect or know that the exhaust tube and tail pipe assembly was moved at any point prior to checking for the gap, apply pressure towards the turbine housing flange before taking a measurement.** Refer to Figure 3 on page 4.
5. If a gap exceeding tolerance is found, the turbocharger and tail pipe assembly should be removed. To accomplish this, follow the instructions contained in the Cessna Aircraft or STC holder's maintenance manual or as applicable the appropriate TCM service information. Inspect and clean flange areas using methods recommended by Cessna or TCM. *Do not attempt repair of the turbine housing.* Connect the cleaned exhaust tube to the turbocharger and re-inspect per step 4 above. If the gap still exceeds tolerance, the turbocharger turbine housing (P/N 441977-23 or 441977-25) must be replaced. Proceed to step 6. If gap tolerance is **not exceeded**, metal stamp a 1/8" upper case "I" in the area shown in Fig 4 (per step 7) to indicate the instruction was performed then proceed to step 10.

Cessna Turbocharger
P/N C295001-0202

Typical "210"
Installation



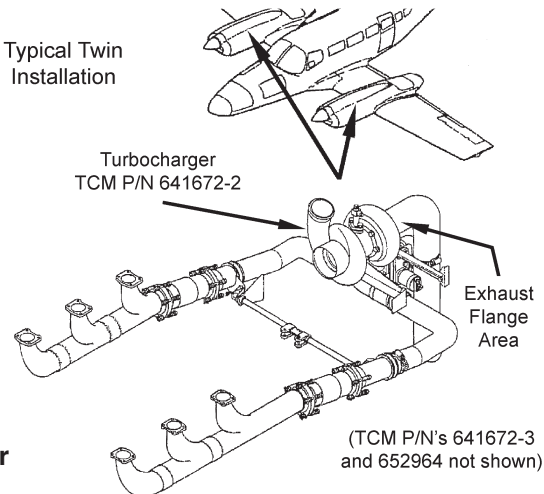
Typical Twin
Installation

Turbocharger
TCM P/N 641672-2

Exhaust
Flange
Area

(TCM P/N's 641672-3
and 652964 not shown)

RAM
modifications
not shown



**Figure 1 - Turbocharger
Installation**



Figure 2 - "V" band Clamp Showing Gap

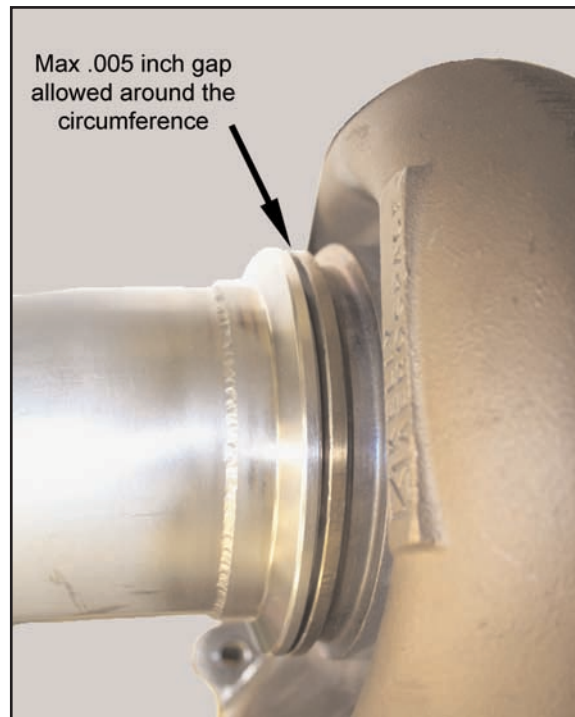


Figure 3 - Gap Inspection Area

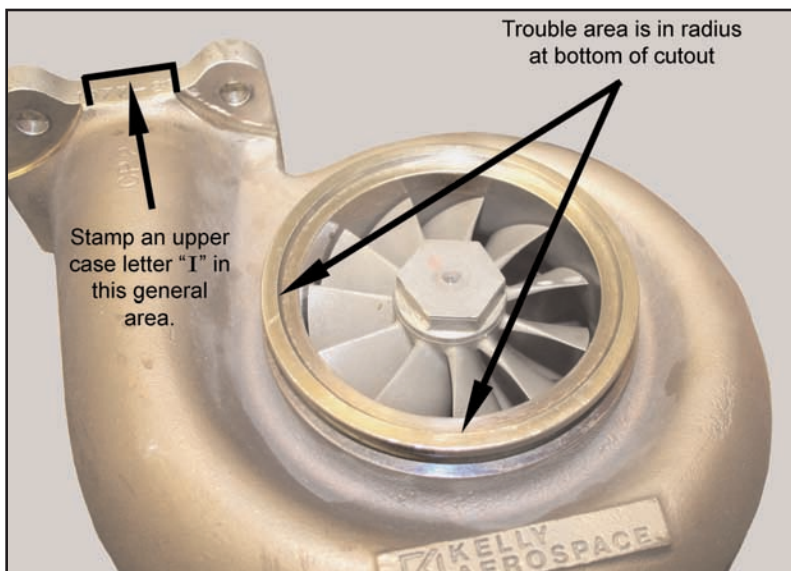


Figure 4 - Turbine Housing Trouble Area

6. The turbocharger must be sent to a properly certificated part 145 repair station (or foreign equivalent) experienced in turbocharger repair.
7. Once the turbocharger has been repaired, visually inspect for condition and orientation of the turbine housing then, using a 1/8" metal stamp of an upper case "I", stamp the turbine housing in the area shown in Figure 4. Care must be taken not to extend stamp within 1/8" of the mating edge as it may bulge and distort the mating surface. When stamped, proceed with the installation.
8. Utilizing the applicable aircraft, STC holder and/or engine manufacturers maintenance manuals or service instructions, re-install the turbocharger assembly.

NOTE:

If the existing "V" band clamp is to be used, it should be inspected for damage on the inside of the "V" prior to re-use. If the inside radius of the "V" is flattened or cut it should not be used. Obtain the clamp part number from the appropriate aircraft or engine parts catalog.

9. When connecting the exhaust tube and tail pipe assembly to the repaired turbocharger, it is advisable to re-check the flange fit per step 4 prior to installing the clamp. Carefully, position and install the "V" band clamp to manufacturer specifications and proceed to "Return to Service" below.
10. If gap tolerance was **not exceeded** and the metal stamp "I" has been applied per step 5, carefully, position and install the "V" band clamp to manufacturer specifications and proceed to "Return to Service" below.

RETURN TO SERVICE:

1. When the turbocharger has been replaced, the aircraft may now be prepared for return to service.
2. Refer to Kelly Aerospace Power Systems Service Bulletin 23 and perform the recommended turbocharger operational tests. This consists of turbocharger pre-lubrication, ground running tests, and an operational flight test. Make sure no air, exhaust, or oil leaks are present. *Service Bulletin may be viewed or downloaded online via www.kellyaerospace.com.*
3. Utilizing the applicable Cessna Aircraft or STC holder's maintenance instructions and/or manuals, install the engine cowls removed to gain access.
4. Upon successful completion of this service bulletin per the applicable compliance time listed on page 1, make an appropriate log book entry that includes the affected turbocharger model and serial number, along with an appropriate statement of the inspection and/or repair.

MATERIAL REQUIRED:

One (1) or two (2) each, turbocharger turbine housing, P/N 441977-23 or 441977-25 as required. All KAPS parts must be obtained through an AVIALL, Inc. supplier. AVIALL is the sole distributor for KAPS turbocharger parts. *NOTE: Other incidental parts may be required during the removal and installation of the turbocharger. These parts must be obtained per the aircraft or engine manufacturers parts list from the applicable manufacturer.*

DISPOSITION OF STOCK:

Any turbocharger which appears on the Suspect Serial Number Table(s) on page 2 which remains in stock may be returned for repair or replacement.

WARRANTY STATEMENT:

Kelly Aerospace Power Systems will supply warranty consideration for each affected KAPS Turbine Housing (up to two per aircraft). Additionally, up to one (1) hour labor per engine or two (2) hours labor per aircraft (at 75.00 USD) will be allowed for the inspection and repair required in this service bulletin. Warranty must be filed through AVIALL Inc. with the affected turbine housing returned. All normal KAPS warranty procedures apply. No other warranty consideration related to this service publication applies. This publication does not imply or state any responsibility for the workmanship of any person or entity performing work or maintenance on the turbocharger, engine, or aircraft.

CONTACT INFORMATION:

If you have any questions concerning the instructions in this service bulletin, please contact Kelly Aerospace Power Systems Technical Support at (888) 461-6077.

Questions concerning aircraft service or operation must be forwarded to the applicable manufacturer of that product.