

TURBOCHARGER INSPECTION AND REPLACEMENT

INTRODUCTION:

It has come to the attention of Kelly Aerospace Power Systems of a disabled turbocharger where the turbine and compressor wheel shaft bearing journals were pushed inward and damaged on a part number 466304-0003 turbocharger. Examination of the damage revealed that a conical vibration along the turbine wheel and shaft assembly was the principal source of the damage. Investigation of the cause has determined that the turbine wheel shaft assembly for this particular turbocharger may have been improperly balanced. Continued operation with a turbine wheel shaft imbalance may result in the separation of the turbine wheel head from the shaft rendering the turbocharger inoperative and may result in the partial or total loss of engine power.

This Service Bulletin is being issued to mandate the replacement of affected turbochargers P/N 466304-0003 (TCM P/N 646677) as listed by serial number in the table below.

COMPLIANCE:

Prior to next flight. *If the turbocharger replacement can not be accomplished on site, a ferry permit is required to deliver the aircraft to a suitable facility for repair. (To determine if the turbocharger is suitable to apply for a ferry permit, see visual inspection below.)*

EFFECTIVITY:

Any aircraft utilizing a Teledyne Continental Motors engine with a Kelly Aerospace Power Systems turbocharger P/N 466304-0003 (TCM P/N 646677) with the serial numbers listed below.

Suspect Serial Numbers

KBL00782	KBL00789	KBL00797	KCL00588	KCL00627	KCL00639	KCL00724
KBL00783	KBL00790	KCL00581	KCL00589	KCL00629	KCL00717	KCL00725
KBL00784	KBL00792	KCL00582	KCL00590	KCL00631	KCL00718	KCL00726
KBL00785	KBL00793	KCL00583	KCL00621	KCL00633	KCL00719	KCL00727
KBL00786	KBL00794	KCL00584	KCL00623	KCL00636	KCL00720	KCL00728
KBL00787	KBL00795	KCL00585	KCL00625	KCL00637	KCL00721	KCL00730
KBL00788	KBL00796	KCL00587	KCL00626	KCL00638	KCL00722	KCL00731

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 inflight operational checks require use of the appropriate AFM or POH.

This procedure has two steps. First, the visual inspection; the purpose is to determine if the turbocharger may be used and is suitable for the relocation of the aircraft. Second, the basic instructions to remove, replace, and check the turbocharger. *See caution above. See Table on page 1 for serial numbers affected.*

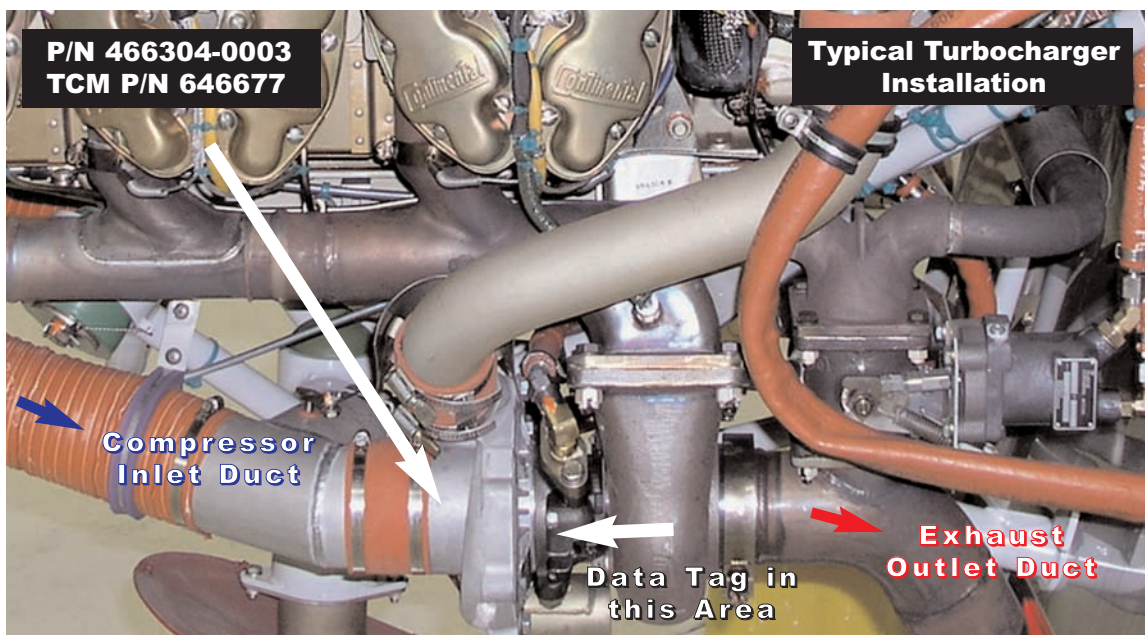


Figure 1 - Turbocharger Installation

VISUAL INSPECTION:

1. Access the aircraft turbochargers in accordance with the instructions in the aircraft maintenance manual.
2. Remove the compressor inlet ducts to expose the compressor wheels (see caution above). Refer to Figure 1.
3. Visually inspect each turbocharger through the compressor inlet for any signs of contact. Look for witness marks from the impeller wheel, giving careful attention to the outer edges of the wheel blades and the inner wall of the compressor housing. Contact marks on the housing from the wheel will appear as a burnishing on the inner wall. Grooves or gouges of any sort are cause for turbocharger replacement. Utilize supplemental lighting if needed to facilitate visual inspection. Refer to Figure 2, page 3.
4. If any anomalies are noted during the visual inspection, replace the turbocharger. If nothing appears in the visual inspection, the turbocharger is suitable to submit for a ferry permit. This will allow the aircraft to be relocated to qualified facility for turbocharger replacement.

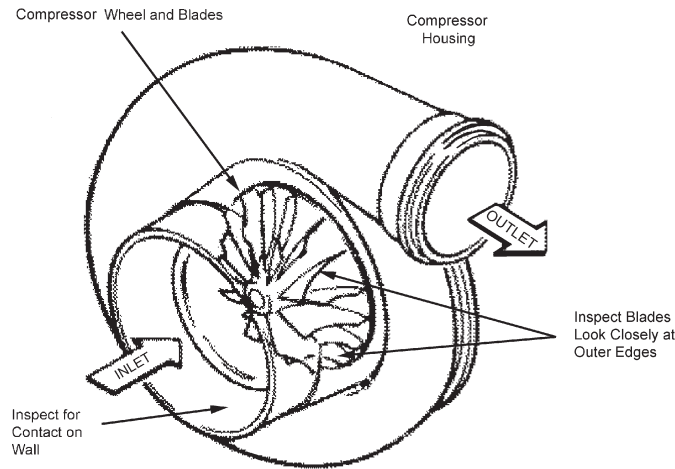


Figure 2 - Turbocharger Inspection Points

TURBOCHARGER REPLACEMENT:

1. The affected turbocharger P/N 466304-0003 (TCM P/N 646677) must be removed and replaced per the table shown on page 1. Each aircraft has two turbochargers. Check the data tag on each to identify whether the serial number of the turbocharger is one that is affected. When identification is made, remove the turbocharger from the aircraft. Removal must be in accordance with the aircraft and/or engine manufacturers maintenance manuals or service instructions. Contact the aircraft and/or engine manufacturer to determine the disposition of the suspect turbocharger and information regarding the return of the turbocharger(s). All warranty applications must be made through the aircraft and/or engine manufacturer. *Refer to Fig 1 as required.*
2. Upon replacement of the turbocharger, it is recommended that the inlet and outlet oil lines and drain can be flushed. Change the oil and oil filter in accordance with the aircraft and/or engine manufacturers maintenance manual or service instructions.
3. Utilizing the applicable aircraft and/or engine manufacturers maintenance manuals or service instructions, re-install the turbocharger assembly and connect the oil lines. Connect the turbocharger compressor inlet duct and coupling, torque the clamps to manufacturer specifications. Connect the exhaust outlet duct carefully, position and torque the "V" band clamp to manufacturer specifications. *It is critical that a new gasket be installed at the oil drain adapter and installed and torqued down properly. An oil leak in this area may result in engine oil starvation and subsequent engine failure.*

RETURN TO SERVICE:

NOTE:

Check for the latest publication issued by the applicable aircraft manufacturer regarding exact aircraft model, serial number and warranty procedures.

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 and 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.*
4. Utilizing the applicable aircraft and engine manufacturers maintenance manuals, install any portion of the aircraft removed to gain access.
5. Upon successful completion of this service bulletin per the applicable compliance time listed on page 1, make an appropriate log book entry.

PARTS REQUIRED:

One (1) or two (2) each, turbocharger, part number 466304-0003 (TCM P/N 646677) as required. One (1) each engine oil filter as required. Up to (4) each, turbocharger oil inlet or drain adapter gasket, part number as per the engine or aircraft manufacturers parts list. Parts must be obtained from the engine or airframe manufacturer.

WARRANTY STATEMENT:

The sole warranty applicable to this service publication is related to the terms and conditions in the aircraft or engine manufacturers Limited Warranty Policy. 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. All claims for warranty must be forwarded to the the airframe and/or engine manufacturer per the requirements contained in their Limited Warranty policies as applicable.

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.