
AIRWORTHINESS DIRECTIVE

For the reasons set out in the background section, the CASA delegate whose signature appears below issues the following Airworthiness Directive (AD) under subregulation 39.001(1) of CASR 1998. The AD requires that the action set out in the requirement section (being action that the delegate considers necessary to correct the unsafe condition) be taken in relation to the aircraft or aeronautical product mentioned in the applicability section: (a) in the circumstances mentioned in the requirement section; and (b) in accordance with the instructions set out in the requirement section; and (c) at the time mentioned in the compliance section.

Turbochargers

AD/TURBO/2

Kelly Aerospace Turbochargers

**7/2008
TX**

Applicability: This Directive applies to the following turbochargers:

1. Kelly Aerospace Power Systems (KAPS) turbochargers, part number (P/N) 409170-0001 (Lycoming P/N LW-12463), installed on Lycoming Engines (L)TIO-540-J2B and (L)TIO-540-J2BD engines:
 - (a) With the engine serial numbers (SNs) listed in Table 1 of Lycoming Engines Mandatory Service Bulletin (MSB) No. 580, dated 15 February 2008; and
 - (b) With the turbocharger SNs listed in KAPS MSB No. 029, dated 1 February 2008.

Note 1: Lycoming Engines (L)TIO-540-J2B and (L)TIO-540-J2BD engines are installed on, but not limited to, Piper PA31-350 Navajo Chieftain, Piper T1020 airplanes, and Colemill Panther conversion airplanes using a 350 horsepower engine.

2. KAPS turbochargers, P/N 465930-0003 (Teledyne Continental Motors (TCM) P/N 641672-3), installed on TCM GTSIO-520-L and GTSIO-520-N engines, with the turbocharger SNs listed in KAPS MSB No. 030, Revision A, dated 1 April 2008.
3. KAPS turbochargers, P/N 466412-0003 (TCM P/N 652964), installed on TCM TSIOL-550-A and TSIOL-550-C engines, with the turbocharger SNs listed in KAPS MSB No. 030, Revision A, dated 1 April 2008.
4. KAPS turbochargers, P/N 466412-0004, installed on RAM modifications only, with the turbocharger SNs listed in KAPS MSB No. 030, Revision A, dated 1 April 2008.
5. KAPS turbochargers, P/N 466412-0003 (TCM P/N 652964), installed on Cessna 414 airplanes with a TCM TSIOL-550-A or TSIOL-550-C engine (Supplemental Type Certificate (STC) SA7633SW), with the turbocharger SNs listed in KAPS MSB No. 030, Revision A, dated 1 April 2008.
6. KAPS turbochargers, P/N 465930-0003 (TCM P/N 641672-3), installed on Cessna 421 Golden Eagle airplanes with a TCM GTSIO-520-L or GTSIO-520-N engine with the turbocharger SNs listed in KAPS MSB No. 030, Revision A, dated 1 April 2008.

Turbochargers

AD/TURBO/2 (continued)

7. KAPS turbochargers, P/N 465680-0004 (Cessna P/N C295001- 0202), installed on TCM TSIO-520-AF or TSIO-520-P engines, with the turbocharger SNs listed in KAPS MSB No. 030, Revision A, dated 1 April 2008.
8. KAPS turbochargers, P/N 465930-0002 (TCM P/N 641672-2), installed on TCM GTSIO-520-M engines, with the turbocharger SNs listed in KAPS MSB No. 030, Revision A, dated 1 April 2008.
9. KAPS turbochargers, P/N 465680-0004 (Cessna P/N C295001- 0202), installed on Cessna P210 Pressurized Centurion airplanes with a TCM TSIO-520-AF or TSIO-520-P engine, with the turbocharger SNs listed in KAPS MSB No. 030, Revision A, dated 1 April 2008.
10. KAPS turbochargers, P/N 465930-0002 (TCM P/N 641672-2), installed on Cessna 404 Titan airplanes with a TCM GTSIO-520-M engine, with the turbocharger SNs listed in KAPS MSB No. 030, Revision A, dated 1 April 2008.
11. KAPS overhauled turbochargers, P/N 465930-9003, installed on TCM GTSIO-520-L or GTSIO-520-N engines, with the turbocharger SNs listed in KAPS MSB No. 031, dated 28 February 2008.
12. KAPS overhauled turbochargers, P/N 409170-9001, installed on Lycoming Engines TIO-540-J2B; TIO-540-J2BD; TIO-540-N2BD, and LTIO-540-N2BD engines, with the turbocharger SNs listed in KAPS MSB No. 031, dated 28 February 2008.
13. KAPS overhauled turbochargers, P/N 465680-9005, installed on Lycoming Engines TIO-540-V2AD and TIO-540-W2A engines, with the turbocharger SNs listed in KAPS MSB No. 031, dated 28 February 2008.
14. KAPS overhauled turbochargers, P/N 465930-9002, installed on TCM GTSIO-520-M engines, with the turbocharger SNs listed in KAPS MSB No. 031, dated 28 February 2008.
15. Also, the following KAPS turbochargers might have been overhauled or repaired by other than KAPS, that used a P/N 441977- 0023S or P/N 441977-0025S turbine housing sold as a spare part, through the Aviall Company. These turbine housings have the date code of 1006 and might have been installed between October 2006 and 25 January 2008. The turbocharger data plates might include manufacturer's information other than KAPS information, such as, Garrett:
 - (a) P/N 409170-0001; installed on Lycoming Engines TIO-540-J2B; TIO-540-J2BD; TIO-540-N2BD; and LTIO versions of the noted engine models.
 - (b) P/N 465680-0004; installed on TCM TSIO-520-AF and TSIO-520P engines.

Turbochargers

AD/TURBO/2 (continued)

- (c) P/N 465680-0005; installed on Lycoming Engines TIO-540-V2AD and TIO-540-W2A engines.
- (d) P/N 465930-0002; installed on TCM GTSIO-520-M engines.
- (e) P/N 465930-0003; installed on TCM GTSIO-520-L and GTSIO-520-N engines.
- (f) P/N 465448-0004; installed on TCM TSIO-520-CE engines.
- (g) P/N 466412-0003; installed on TCM TSIOL-550-A and TSIOL-550-C engines.
- (h) P/N 466412-0004; installed on engines modified by RAM.

Requirement: **Onetime Visual Inspection of Turbocharger**

1. 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 tailpipe assembly.
2. Visually inspect the area that was 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.
3. The maximum gap must not exceed 0.005 inch.
4. Replace any turbocharger that exceeds the 0.005 inch maximum gap, with a serviceable turbocharger.
5. If the maximum gap is not exceeded, metal stamp a 1/8" upper case "I" on the side of the turbocharger discharge flange. Information on the stamping location can be found in the MSBs referenced in this Directive.

Definition: For the purpose of this Directive, a serviceable turbocharger is one that is not listed in the suspect SN lists of the Lycoming Engines MSB or KAPS MSBs referenced in this Directive, or one that passes the visual inspection in this Directive.

Note 2: FAA AD 2008-08-17 dated 10 April 2008 refers.

Compliance: For Requirements 1, 2, 3 and 5: Within 10 hours time-in-service or at the next regular inspection interval, after the effective date of this Directive, whichever occurs first, unless previously accomplished.

For Requirement 4: Before further flight.

This Airworthiness Directive becomes effective on 13 May 2008.

Turbochargers

AD/TURBO/2 (continued)

Background: This Directive results from two reports of exhaust leakage occurring between the turbocharger turbine housing flange and the exhaust tube flange due to machining defects of the turbocharger turbine housing flange. The issuing of this Directive is intended to prevent hazardous amounts of carbon monoxide from entering the cabin, an increase in under-cowl temperatures hampering engine and accessory function, and loss of tailpipe retention, which could lead to an in-flight fire and loss of control of the aeroplane.



James Coyne
Delegate of the Civil Aviation Safety Authority

8 May 2008