Airworthiness Directive

AD No.: 2024-0236

Issued: 10 December 2024

Note: This Airworthiness Directive (AD) is issued by EASA, acting in accordance with Regulation (EU) 2018/1139 on behalf of the European Union, its Member States and of the European third countries that participate in the activities of EASA under Article 129 of that Regulation.

This AD is issued in accordance with Regulation (EU) 748/2012, Part 21.A.3B. In accordance with Regulation (EU) 1321/2014 Annex I Part M.A.301, or Annex Vb Part ML.A.301, as applicable, the continuing airworthiness of an aircraft shall be ensured by accomplishing any applicable ADs. Consequently, no person may operate an aircraft to which an AD applies, except in accordance with the requirements of that AD, unless otherwise specified by the Agency [Regulation (EU) 1321/2014 Annex I Part M.A.303, or Annex Vb Part ML.A.303, as applicable] or agreed with the Authority of the State of Registry [Regulation (EU) 2018/1139, Article 71 exemption].

Design Approval Holder's Name:	Type/Model designation(s):
CONTINENTAL AEROSPACE TECHNOLOGIES GmbH	TAE 125-02-125 engines

Effective Date:	17 December 2024
TCDS Number(s):	EASA.E.055
Foreign AD:	Not applicable
Supersedure:	None

ATA 72 – Engine – Engine Coolant Contamination – Inspection

Manufacturer(s):

Continental Aerospace Technologies GmbH (CG), formerly Technify Motors GmbH, Thielert Aircraft Engines GmbH (TAE)

Applicability:

TAE 125-02-125 engines, all serial numbers.

These engines are known to be installed on, but not limited to, Tecnam P2010 series aeroplanes.

The installation of these engines was done by either the aeroplane manufacturer or through modification of the aeroplane by Supplemental Type Certificate (STC).

Definitions:

For the purpose of this AD, the following definitions apply:

The SB: CG Service Bulletin (SB) CG 125-1030 P1 Revision 3.

Affected part: Cylinder heads, having Part Number (P/N) 05-7231-K020401 or P/N 05-7231-K024501.

Serviceable part: Cylinder heads, eligible for installation in accordance with CG instructions, which are new (were never operational); or affected parts which have last been removed from an engine that has passed the inspection in accordance with the instructions of the SB (no discrepancies were found after sampling and analysing the engine coolant).

Reason:

Several cases of cracks in cylinder heads of TAE 125-02-125 engines have been reported. Such cracks may cause leakage of engine coolant into the combustion chamber(s), causing loss of coolant, which could lead to engine overheat and eventually to engine failure or seizure.

Although the investigation of the root cause for these cylinder head ruptures is still on-going, it has been determined that contamination of the engine coolant, especially with Potassium, triggers certain critical types of chemical corrosion, depending on the nature of such contamination.

This condition, if not detected and corrected, could lead to an uncommanded in-flight shutdown of the engine and a forced landing, possibly resulting in damage to the aeroplane and injury to occupants.

To address this potential unsafe condition, CG published SB CG 125-1030 P1 (original issue, later revised), to provide instructions for accomplishment of a read-out of the FADEC (full authority digital engine control) data and a one-time inspection (sampling and analysis) of the engine coolant.

For the reason described above, this AD requires a one-time inspection of the engine coolant and, depending on findings, applicable corrective action(s). This AD also regulates the (re)installation of affected parts.

This AD is considered to be an interim action and further AD action may follow.

Required Action(s) and Compliance Time(s):

Required as indicated by this AD, unless the action(s) required by this AD have been already accomplished:

Inspection(s):

(1) Within the compliance time as identified in Table 1 of this AD, accomplish a one-time inspection (sampling and analysis) of the engine coolant in accordance with the instructions of the SB (see Note 1 of this AD).

Table 1 – Compliance Time

For engines that, on the effective date of this AD, have accumulated 50 flight hours (FH) or more since last engine coolant exchange or since new, as applicable	Within 5 FH after the effective date of this AD
For engines that, on the effective date of this AD, have accumulated less than 50 FH since last engine coolant exchange or since new, as applicable	Within 55 FH since that last engine coolant exchange or since new, but not before having accumulated 50 FH since that last engine coolant exchange or since new, as applicable

Note 1: Following accomplishment of the inspection as required by paragraph (1) of this AD, pending the results of the analysis of the sampled coolant and accomplishment of the corrective actions as required by paragraph (2) or (3) of this AD, as applicable, further operation of the engine is not permitted.

Corrective Action(s):

(2) If, following the inspection as required by paragraph (1) of this AD, the analysis shows that the Aluminium (Al) and/or Fluoride concentration in the sampled coolant exceeds the acceptable limit as specified in Appendix A of the SB, before next flight, replace the cylinder head with a serviceable part, as defined in this AD, in accordance with the instructions of the SB, and thereafter flush the engine cooling system and refill it with new coolant in accordance with the instructions of the SB.

(3) Unless required otherwise by paragraph (2) of this AD, if, following the inspection as required by paragraph (1) of this AD, the analysis shows that any parameter, except the Aluminium (Al) and Fluoride concentration, in the sampled coolant exceeds the acceptable range as specified in Appendix A of the SB, before next flight, drain and flush the engine cooling system and refill it with new coolant in accordance with the instructions of the SB.

Credit:

(4) Inspections and corrective actions, accomplished on an engine before the effective date of this AD in accordance with the instructions of CG SB CG 125-1030 P1 at Revision 2, are acceptable to comply with the requirements of the paragraphs (1) to (3) of this AD, as applicable, for that engine.

Parts Installation:

(5) From the effective date of this AD, it is only allowed to install on an engine a cylinder head that is a serviceable part, as defined in this AD.

Ref. Publications:

CG SB CG 125-1030 P1 Revision 2 dated 20 August 2024, or Revision 3 dated 16 September 2024.

The use of later approved revisions of the above-mentioned document is acceptable for compliance with the requirements of this AD.

Remarks:

1. If requested and appropriately substantiated, EASA can approve Alternative Methods of Compliance for this AD.

2. Based on the required actions and the compliance time, EASA have decided to issue a Final AD with Request for Comments, postponing the public consultation process until after publication. All interested persons may send their comments, referencing the AD Number, to the E-mail address specified in below Remark 3, prior to 07 January 2025. Only if any comment is received during the consultation period, a Comment Response Document will be published in the EASA Safety Publications Tool, in a compressed ('zipped') file, attached to the record for this AD.

3. Enquiries regarding this AD should be referred to the EASA Safety Information Section, Certification Directorate. E-mail: ADs@easa.europa.eu.

4. Information about any failures, malfunctions, defects or other occurrences, which may be similar to the unsafe condition addressed by this AD, and which may occur, or have occurred on a product, part or appliance not affected by this AD, can be reported to the EU aviation safety reporting system. This may include reporting on the same or similar components, other than those covered by the design to which this AD applies, if the same unsafe condition can exist or may develop on an aircraft with those components installed. Such components may be installed under an FAA Parts Manufacturer Approval (PMA), Supplemental Type Certificate (STC) or other modification.

5. For any question concerning the technical content of the requirements in this AD, please contact: Continental Aerospace Technologies GmbH, Platanenstrasse 14, 09356 Sankt Egidien, Germany; Telephone: +49 37204 696 0; Fax: +49 37204 696 2912;
E-Mail: support@continentaldiesel.com or airworthiness@continental.aero.