

Airworthiness Directive

AD No.: 2023-0087
Issued: 26 April 2023

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:

ROLLS-ROYCE DEUTSCHLAND Ltd & Co KG

Type/Model designation(s):

Trent 1000 engines

Effective Date: 10 May 2023

TCDS Number(s): EASA.E.036

Foreign AD: Not applicable

Supersedure: None

ATA 75 – Air – Intermediate / High Pressure Air Tubes / Connectors – Inspection

Manufacturer(s):

Rolls-Royce plc

Applicability:

Trent 1000-AE3, Trent 1000-CE3, Trent 1000-D3, Trent 1000-G3, Trent 1000-H3, Trent 1000-J3, Trent 1000-K3, Trent 1000-L3, Trent 1000-M3, Trent 1000-N3, Trent 1000-P3, Trent 1000-Q3 and Trent 1000-R3 engines, all serial numbers.

These engines are known to be installed on, but not limited to, Boeing 787 aeroplanes.

Definitions:

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

The NMSB: Rolls-Royce Alert Non-Modification Service Bulletin (NMSB) TRENT 1000 75-AK920.

Affected part: Intermediate pressure (IP) Stage 8 (IP8), high pressure (HP) Stage 3 (HP3) air transfer tubes and front bearing housing IP8 air feed tubes, as identified in Appendix 1 of the NMSB, including the tube connectors.

Qualified engine shop visit: A shop visit where a core module flange is separated.

Reason:

The Rolls-Royce Trent 1000 TEN Time Limits Manual (TLM) T-Trent-10RRT normally contains instructions for visual inspections to determine the integrity of critical IP8 and HP3 air system tubes at intervals consistent with exposure assumptions used in critical part life assessments. However, the intervals of some of these inspections, not previously included in the TLM, are shorter than the planned refurbishment interval shop visits for the engine. It was therefore determined that certain more frequent inspections are necessary.

This condition, if not detected and corrected, affects the engine internal cooling and sealing flows, possibly resulting in affected part failure, with consequent damage to the engine, and reduced control of the aeroplane.

To address this potential unsafe condition, Rolls-Royce issued the NMSB, providing instructions to inspect the affected parts.

For the reasons described above, this AD requires repetitive visual inspections of each affected part and, depending on findings, replacement. It is expected that the Rolls-Royce Trent 1000 TEN TLM T-Trent-10RRT will be amended to include the inspections as required by this AD.

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

Required as indicated, unless accomplished previously:

Inspection(s):

- (1) During the next qualified engine shop visit, as defined in this AD, after the effective date of this AD, and, thereafter, at intervals not to exceed 1 000 engine flight cycles, during a qualified engine shop visit, inspect each affected part in accordance with the instructions of section 3 of the NMSB.

For an engine that, on the effective date of this AD, is in a qualified engine shop visit where the re-assembly has not yet started, accomplish the inspection before release to service of that engine.

Corrective Action(s):

- (2) If, during any inspection as required by paragraph (1) of this AD, cracking, damage or any sign of air leakage wear is found, before release to service of the engine, replace the affected part(s) with serviceable parts in accordance with the instructions of section 3 of the NMSB.

Terminating Action:

- (3) None.

Ref. Publications:

Rolls-Royce Alert NMSB TRENT 1000 75-AK920 original issue dated 28 February 2023.

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. This AD was posted on 23 March 2023 as PAD 23-036 for consultation until 20 April 2023. The Comment Response Document can be found in the [EASA Safety Publications Tool](#), in the 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 your designated Rolls-Royce representative, or download the publication from your Rolls Royce Care account at <https://customers.rolls-royce.com>.

If you do not have a designated representative or Rolls-Royce Care account, please contact **Corporate Communications** at **Rolls-Royce plc**, P.O. Box 31, Derby, DE24 8BJ, United Kingdom Telephone +44 (0)1332 242424,

or send an email through <https://www.rolls-royce.com/contact-us/civil-aerospace.aspx> identifying the correspondence as being related to **Airworthiness Directives**.

