適航指令發布單
Airworthiness Directive Issuance Form

民航局AD編號 AD number	CAA-2026-07-015A	發布日期 Date issued	2026/11/17
適用之航空產品 Applied to (models, serial numbers or part numbers, as applicable)	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 (s/n); and Trent 7000-68, Trent 7000-70, Trent 7000-72, Trent 7000-72 C and Trent 7000 72-D engines, all s/n. These engines are known to be installed on, but not limited to, Boeing 787 and Airbus A330 aeroplanes, as applicable.		
主旨摘要 Subject	Engine - Intermediate Pressure Compressor Shaft Assembly / Front Air Seal - Inspection		

民航局
CAA

○ 本國產品
Native product

○ 其他個案
Other

設計國民航主管機構
Original Authority

○ FAA	○ Germany LBA
◉ EASA	○ CAA-NL
○ Brazil	○ UK CAA
○ Transport Canada Civil Aviation	○ Japan CAB
○ DGAC	○ CAA of Israel
	○ Other____

設計國AD編號 Original AD number	2026-0143R1

1. 直接採用原AD之內容? (Is the original AD directly adopted?)
   ◉ 是(Yes) ○ 否(No)_
   a. 生效日期另訂為(Re-specify the effective date as):
   b. 執行時限另訂為(Re-specify the compliance time or period as):
2. 使用人是否需要將AD執行結果向民航局提出報告?
   (Do users need to report the status of compliance to the CAA?)
   ○ 需要(Yes) ◉ 不需要(No)

備註 Note	This AD revises EASA AD 2026-0143(CAA-2026-07-015) dated 20 July 2026, which superseded EASA AD 2024-0178 dated 12 September 2024.

註： 1. AD內容後附。
2. 航空器產品使用人得向民航局提出豁免、替代符合方法、執行時限之展延之申請。
3. 如有任何問題，請聯絡交通部民用航空局初始適航科。Tel：(02)2349-6330 / 6332, Fax：(02)2545-8464, adcaa@mail.caa.gov.tw

Note：1. The AD text is enclosed.
2. Exemption, an alternative method of compliance or adjustment of the compliance time may be proposed to the CAA for approval.
3. For further information, please contact Civil Aviation Administration on Tel：(02)2349-6330 / 6332, Fax：(02)2545-8464, adcaa@mail.caa.gov.tw

Airworthiness Directive

AD No.: 2026-0143R1

Issued: 06 November 2026

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 and Trent 7000 engines

Effective Date: Revision 01: 13 November 2026
Original issue: 03 August 2026

TCDS Number(s): EASA.E.036

Foreign AD: Not applicable

Revision: This AD revises EASA AD 2026-0143 dated 20 July 2026, which superseded EASA AD 2024-0178 dated 12 September 2024.

ATA 72 – Engine – Intermediate Pressure Compressor Shaft Assembly / Front Air Seal – Inspection

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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 (s/n); and

Trent 7000-68, Trent 7000-70, Trent 7000-72, Trent 7000-72 C and Trent 7000 72-D engines, all s/n.

These engines are known to be installed on, but not limited to, Boeing 787 and Airbus A330 aeroplanes, as applicable.

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

Affected part(s): Intermediate pressure compressor (IPC) shaft assemblies, having Part Number (P/N) LV18447 or P/N LV19601.

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Serviceable part: IPC shaft assembly, eligible for installation in accordance with Rolls-Royce instructions which is not an affected part; or an affected part which is new (never installed); or an affected part which passed an inspection (no defect found) in accordance with the instructions of the NMSB, as defined in this AD, or Rolls-Royce NMSB Trent 1000 72-K618 Revision (Rev.) 2.

The NMSB: Rolls-Royce Alert Non-Modification Service Bulletin (NMSB) Trent 1000 72−AL139 Rev. 1.

The modification SB: Rolls-Royce Service Bulletin (SB) TRENT 1000 72-L197 (installing IPC shaft assembly P/N LV39600), or TRENT 1000 72-L198 (installing IPC shaft assembly P/N LV39838), or TRENT 1000 72-L199 (installing IPC shaft assembly P/N LV39600), or TRENT 1000 72-L200 (installing IPC shaft assembly P/N LV39838), as applicable to engine model and s/n.

Where, in this AD, reference is made to a Rolls-Royce SB or NMSB with an 'A' (Alert) in the number, it should be recognised that an earlier or later revision may not have that 'A'. This kind of change does not effectively alter the publication references for the purpose of this AD.

Groups:
Group 1 engines are:
Trent 1000 engine models that have IPC shaft assembly's P/N LV18447 or P/N LV19601 installed; and
Trent 7000-72, Trent 7000-72 C engine models that have IPC shaft assembly's P/N LV18447 or P/N LV19601 installed.

Group 2 engines are Trent 7000-68 and Trent 7000-70 and Trent 7000 72-D engine models that have IPC shaft assembly P/N LV19601 installed.

Group 3 are engines which are not Group 1 nor Group 2 engines.

Reason:
Occurrences of cracked IPC shaft assembly front air seals, installed on Group 1 engines were reported. The subsequent investigations identified possible change of the vibration and flutter characteristics of the affected parts and identified a potential propagation of the cracking into the IPC stage 1 disc.

This condition, if not detected and corrected, could possibly lead to IPC stage 1 disk burst with subsequent release of high energy debris and damage to the aeroplane or failure of the IPC front seal and release of debris, leading to an engine in-flight shut down, and consequent reduced control of an aeroplane.

To address this potential unsafe condition, Rolls-Royce published the original issue of the NMSB Trent 1000 72−AL139 and EASA issued AD 2024-0178 to provide inspection instructions.

Since the issuance of AD 2024-0178, it has been determined that IPC shaft assembly having P/N LV19601 is eligible for installation on additional engine models (defined as Group 2 engines in this AD). Additionally, Rolls-Royce published the modification SBs introducing IPC shaft assemblies P/N LV39838 and P/N LV39600 which incorporate a redesigned tapered front seal ring for better stiffness and vibration behaviour, along with minor geometric and manufacturing refinements.

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Consequently, EASA issued AD 2026-0143 retaining the requirements of EASA AD 2024-0178, which was superseded, expanded the Applicability to all engines potentially exposed to the unsafe condition and required repetitive inspections of the front air seal of the affected part(s) and, depending on findings, removal of the engine from service and subsequent applicable corrective action(s). This AD also introduced modification of the engines in accordance with the modification SB, installing IPC shaft assemblies that are not an affected part under this AD, as optional terminating action for the repetitive inspections required by this AD.

Since that AD was issued, Rolls-Royce determined that a number of IPC shaft assemblies reworked in accordance with TRENT 1000 72-L198 or TRENT 1000 72-L200 at original issue had already been delivered to operators. Subsequently, Rolls-Royce issued Revision 1 and later Revision 2 of SB TRENT 1000 72-L198 and TRENT 1000 72-L200. Following a review of the differences between the original issue and the subsequent revisions of SB TRENT 1000 72-L198 and TRENT 1000 72-L200, Rolls-Royce confirmed that all issues embody the same approved modification and result in the same post-modification configuration, with the later revisions only updating accomplishment, manufacturing, and process-control instructions without changing the modification objective or its engineering substantiation. Consequently, EASA determined that a modification accomplished in accordance with SB TRENT 1000 72-L198 or TRENT 1000 72-L200 at original issue provides an equivalent level of safety.

For that reason, this AD is revised to recognise modifications accomplished in accordance with any issue of SB TRENT 1000 72-L198 or TRENT 1000 72-L200 as constituting the same approved modification and providing the same level of safety.

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:

On–wing Inspection:

(1) For Group 1 engines: Within 500 engine flight cycles (EFC) accumulated by the affected part since new (for P/N LV19601) or since embodiment of Rolls-Royce SB Trent 1000 72-K571 (for P/N LV18447) or SB Trent 1000 72-K570 (for P/N LV18447), as applicable, **or** within the compliance time as defined in Table 1 of this AD, whichever occurs later, and, thereafter at intervals not to exceed 300 EFC, accomplish a visual inspection of the front air seal of each affected part in accordance with the instructions of the NMSB (Method A or Method B).

Table 1 – Compliance Time

Number of EFC (see Note 1 of this AD)	**Compliance Time**
Less than 500	Within 500 EFC after embodiment of Rolls-Royce SB Trent 1000 72-K571 (Trent 1000 engines) or SB Trent 1000 72-K570 (Trent 7000 engines), as applicable; or within 300 EFC after 26 September 2024 [the effective date of EASA AD 2024-0178], whichever occurs later
500 or more but less than 800	Within 800 EFC after embodiment of Rolls-Royce SB Trent 1000 72-K571 (Trent 1000 engines) or SB Trent 1000 72-K570 (Trent 7000

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	engines), as applicable; or within 200 EFC after 26 September 2024 [the effective date of EASA AD 2024-0178], whichever occurs later
800 or more	Within 1 000 EFC after embodiment of Rolls-Royce SB Trent 1000 72-K571 (Trent 1000 engines) or SB Trent 1000 72-K570 (Trent 7000 engines), as applicable; or within 50 EFC after 26 September 2024 [the effective date of EASA AD 2024-0178], whichever occurs later

Note 1: The EFC specified in column 'Number of EFC' of the Table 1 of this AD are those accumulated on 26 September 2024 [the effective date of EASA AD 2024-0178] by the affected part having P/N LV18447 since accomplishment of Rolls-Royce SB Trent 1000 72-K571 (Trent 1000 engines) or SB Trent 1000 72-K570 (Trent 7000 engines), as applicable; or by the affected part having P/N LV19601 since new, as applicable.

(2) For Group 2 engines: Within 500 EFC accumulated by the IPC shaft assembly having P/N LV19601 since new, **or** within the compliance time as defined in Table 2 of this AD, whichever occurs later, and, thereafter at intervals not to exceed 300 EFC, accomplish a visual inspection of the front air seal of each affected part in accordance with the instructions of the NMSB (Method A or Method B).

Table 2 – Compliance Time

Number of EFC (see Note 2 of this AD)	**Compliance Time**
Less than 500	Within 300 EFC after 03 August 2026 [the effective date of this AD at original issue]
500 or more but less than 800	Within 200 EFC after 03 August 2026 [the effective date of this AD at original issue]
800 or more	Within 50 EFC after 03 August 2026 [the effective date of this AD at original issue]

Note 2: The EFC specified in column 'Number of EFC' of the Table 2 of this AD are those accumulated on 03 August 2026 [the effective date of this AD at original issue] by the IPC shaft assembly having P/N LV19601 since new.

In-shop Inspection:

(3) For Group 1 and Group 2 engines: In-shop inspection of an engine or an affected part in accordance with the instructions of the NMSB or Rolls-Royce NMSB Trent 1000 72-K618 Rev. 2 is acceptable to comply with the requirements of paragraph (1) or (2) of this AD, as applicable, provided that the applicable compliance time and intervals as defined in paragraph (1) or (2) of this AD, as applicable, are not exceeded and that, before release to service of that engine, found discrepancies are corrected, as applicable, in accordance with the instructions of the NMSB or Rolls-Royce NMSB Trent 1000 72-K618 Rev. 2.

Corrective Action(s):

(4) If, during any on-wing inspection as required by paragraph (1) or (2) of this AD, as applicable, any cracked affected part is detected, before next flight, remove the engine from service in accordance with the instructions of the NMSB and, before release to service of that engine,

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replace the affected part with a serviceable part, as defined in this AD, in accordance with approved Rolls-Royce maintenance instructions.

Credit:

(5) For Group 1 engines and Group 2 engines converted from Group 1 in accordance with RR approved conversion instructions:
Inspections(s) and corrective actions(s), as applicable, accomplished on an engine before 03 August 2026 [the effective date of this AD at original issue] in accordance with the instructions of Rolls-Royce Alert NMSB Trent 1000 72−AL139 at original issue are acceptable to comply with the requirements of paragraphs (1), (3) and (4) of this AD, as applicable, for that engine.

Acceptable Method of Compliance:

(6) For Group 1 and Group 2 engines: Inspection(s) and corrective action accomplished in-shop or on-wing on an engine in accordance with the instructions of Rolls-Royce Technical Variance (TV) 277059 are acceptable to comply with the initial requirements of the paragraphs (1), (2) and (4) of this AD, as applicable, for that engine.

(7) The IPC shaft assemblies listed (by P/N and s/n) in Appendix 3 of the NMSB are known to have been already inspected before 03 August 2026 [the effective date of this AD at original issue] in accordance with maintenance instructions equivalent to those of the NMSB, and are therefore considered compliant with the initial inspection requirement of paragraphs (1) and (2) of this AD. Appendix 3 of the NMSB provides the number of EFC accumulated by each listed affected part at the time of initial inspection. Subsequent inspections must be accomplished on these parts as required by paragraph (1) or (2) of this AD, as applicable.

Optional Terminating Action:

(8) For Group 1 engines: Modification of an engine in accordance with the instructions of the modification SB constitutes terminating action for the repetitive inspections required by this AD for that engine, provided that, thereafter, no affected part is installed on that engine.

Additional Requirements:

(9) Except for Group 3 engines having IPC shaft assembly P/N LV39838 installed: From 03 August 2026 [the effective date of this AD at original issue], modification of an engine in accordance with the instructions of Rolls-Royce SB Trent 1000 72-K571 (Trent 1000 engines) or SB Trent 1000 72-K570 (Trent 7000 engines), as applicable, is allowed, provided that, after modification, that engine is inspected and, depending on findings, corrected as required by this AD for Group 1 or Group 2 engine, as applicable.

Ref. Publications:

Rolls-Royce Alert NMSB Trent 1000 72−AL139 original issue dated 05 July 2024, or Rev. 1 dated 16 December 2025.

Rolls-Royce NMSB Trent 1000 72-K618 Rev. 2 dated 13 June 2024.

Rolls-Royce SB Trent 1000 72-K570 original issue dated 15 June 2021, or Rev. 1 dated 31 March 2023.

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Rolls-Royce SB Trent 1000 72-K571 original issue dated 15 June 2021, or Rev. 1 dated 22 February 2022.

Rolls-Royce SB TRENT 1000 72-L197 original issue date 10 April 2025.

Rolls-Royce SB TRENT 1000 72-L198 original issue dated 08 June 2025, or Rev. 1 dated 03 October 2025, or Rev. 2 dated 26 February 2026.

Rolls-Royce SB TRENT 1000 72-L199 original issue dated 10 April 2025.

Rolls-Royce SB TRENT 1000 72-L200 original issue dated 08 June 2025, or Rev. 1 dated 17 October 2025, or Rev. 2 dated 26 February 2026.

The use of later approved revisions of the above-mentioned documents 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. The original issue of this AD was posted on 03 June 2026 as PAD 26-071 for consultation until 01 July 2026. 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 E-mail through https://www.rolls-royce.com/contact-us/civil-aerospace.aspx, identifying the correspondence as being related to **Airworthiness Directives**.

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