



Airworthiness Directive

AD No.: 2022-0110R1

Issued: 22 November 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):

BR700-710 engines

Effective Date: Revision: 22 November 2023
Original issue: 29 June 2022

TCDS Number(s): EASA.E.018

Foreign AD: Not applicable

Revision: This AD revises EASA AD 2022-0110 dated 15 June 2022.

ATA 72 – Engine – Low Pressure Compressor Rotor (Fan) Disc – Inspection

Manufacturer(s):

Rolls-Royce Deutschland Ltd & Co KG (RRD)

Applicability:

BR700-710A1-10 engines, all serial numbers (s/n) up to 11504 inclusive;
BR700-710A2-20 engines, all s/n up to 12426 inclusive; and
BR700-710C4-11 engines, all s/n up to 15213 inclusive, having configuration standard 710C4-11 engraved on the engine data plate (RRD Service Bulletin (SB) SB-BR700-72-101466 not incorporated); and all s/n up to 15329 inclusive, having configuration standard 710C4-11/10 engraved on the engine data plate (RRD SB-BR700-72-101466 incorporated).

These engines are known to be installed on, but not limited to, Bombardier BD-700-1A10 and BD-700-1A11 aeroplanes, and Gulfstream GV (commercial designation G500) and GV-SP (commercial designation G550) aeroplanes.

Definitions:

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

The NMSB: RRD Alert Non-Modification Service Bulletin (NMSB) BR700-72-900732.



Affected part: Low Pressure (LP) compressor rotor (fan) discs, having Part Number (P/N) BRR20791 or P/N FW33929, with LP compressor (fan) blades installed, having P/N FW33513, P/N FW33980, P/N FW33925, P/N FW34114, P/N FW34776, P/N FW42806, P/N FW42814 or P/N FW42815; and LP compressor rotor (fan) discs, having P/N BRR24829, with LP compressor (fan) blades installed, having P/N FW33513, P/N FW33980, P/N FW42806, P/N FW42814 or P/N FW42815.

Serviceable part: An affected part (with LP compressor (fan) blades installed) that is new (not previously installed); or an affected part that has not exceeded 500 flight hours (FH) or 150 flight cycles (FC) since new, or since it was last inspected in accordance with the instructions of the applicable RRD Engine Maintenance Manual (EMM), task 72-31-01-200-802; or an LP compressor rotor (fan) disc, eligible for installation, that is not an affected part.

EMM: RRD EMM M-710-1BR for BR700-710A1-10 engines, EMM M-710-2BR for BR700-710A2-20 engines, or EMM M-710-4BR for BR700-710C4-11 engines, as applicable.

TLM: RRD Time Limits Manual (TLM) T-710-1BR for BR700-710A1-10 engines, TLM T-710-2BR for BR700-710A2-20 engines, or TLM T-710-4BR for BR700-710C4-11 engines, as applicable.

Reason:

Occurrences were reported of finding cracks on certain LP compressor rotor (fan) discs.

This condition, if not detected and corrected, could lead to LP compressor rotor (fan) or blade failure, possibly resulting in high energy debris release, with consequent damage to, and reduced control of, the aeroplane.

To address this potential unsafe condition, RRD issued the NMSB to provide inspection instructions. Consequently, EASA issued AD 2022-0110 to require repetitive visual inspections of each affected part and, depending on findings, installation of a serviceable part. That AD also provided optional terminating actions for the inspections required by that AD.

Since that AD was issued, Rolls-Royce issued another NMSB, BR700-72-900743, providing instructions for an improved ultra-sonic (US) inspection, and updated the Engine Maintenance Manual (EMM), introducing that improved US inspection as task 72-31-01-270-801.

For the reason described above, this AD is revised to include reference to the new NMSB as an alternative method of compliance, as well as an optional terminating action for the repetitive visual inspections as required by this AD.

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

Required as indicated, unless accomplished previously:

Inspection(s):

- (1) Within the compliance time specified in Table 1 of this AD, as applicable, and, thereafter, at intervals not to exceed 500 FH or 150 FC, whichever occurs first, visually inspect the affected part in accordance with the instructions of section 3 of the NMSB.



Table 1 – Initial Visual Inspection of Affected Parts (see Note 1 of the AD)

FH / FC Accumulated	Compliance Time
500 FH or 150 FC, or less	Before exceeding 550 FH or 165 FC, whichever occurs first
More than 500 FH or 150 FC	Within 30 days after 29 June 2022 [the effective date of the original issue of this AD]

Note 1: The FH and FC specified in Table 1 of this AD are those accumulated on 29 June 2022 [the effective date of the original issue of this AD] by the affected part since new, or since the last visual inspection of the affected part in accordance with the instructions of the applicable RRD EMM, task 72-31-01-200-802.

- (2) Before the initial inspection as required by paragraph (1) of this AD, inspect the front face of the affected part for dry film lubricant (DFL) coating and, if present, remove the DFL coating locally from the front face of the affected part in accordance with the instructions of section 3 of the NMSB. Following inspection of the affected part, do not re-apply DFL coating.
- (3) For an engine or module that, on 29 June 2022 [the effective date of the original issue of this AD], is in an engine shop, the initial inspection as required by paragraph (1) of this AD must be accomplished before release to service of that engine.

Corrective Action(s):

- (4) If, during any inspection as required by paragraph (1) of this AD, cracks (as specified in the NMSB) are detected, remove the affected part from service and, before next flight, or before release to service of the engine, as applicable, install a serviceable part, as defined in this AD.

Terminating Action:

- (5) Modification of an engine in accordance with the instructions of RRD SB-BR700-72-101474 (introducing LP compressor rotor (fan) disc, having P/N FW33927 and new blades); or in accordance with the instructions of RRD SB-BR700-72-101952 (introducing LP compressor rotor (fan) disc, having P/N KH22509 and new blades), constitutes terminating action for the repetitive inspections as required by this AD for that engine.

Following at least one visual inspection as required by paragraph (1) of this AD, accomplishment of a one-time on-wing US inspection (no defects detected) of the affected part on an engine in accordance with the instructions of Rolls-Royce NMSB BR700-72-900743 constitutes terminating action for the repetitive visual inspections as required by this AD for that engine.

If, during the US inspection as specified in NMSB BR700-72-900743, cracks (as specified in that NMSB) are detected, remove the affected engine from service and, before release to service of that engine, contact RRD for approved corrective action instructions.

Parts Installation:

- (6) From 29 June 2022 [the effective date of the original issue of this AD], it is allowed to install on any engine an affected part, provided it is a serviceable part, as defined in this AD.



TLM Repetitive Inspection Task:

- (7) Following accomplishment of a terminating action as specified in paragraph (5) of this revised AD, the engine must be inspected in accordance with the instructions of the applicable EMM, Chapter 72-31-01, PB601 / task 72-31-01-270-801, which is referenced in the applicable TLM.

The inspection (visual as well as US) instructions and associated intervals as specified in the applicable TLM are required by EASA AD 2022-0033, to be implemented into the approved Aircraft Maintenance Programme (AMP) on the basis of which the operator or the owner ensures the continuing airworthiness of each operated engine.

Ref. Publications:

RRD Alert NMSB BR700-72-900732 original issue dated 07 June 2022, or Revision 1 dated 16 June 2023.

RRD NMSB BR700-72-900743 original issue dated 16 June 2023.

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. 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.
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: Rolls-Royce Deutschland Ltd & Co KG, Eschenweg 11, Dahlewitz, 15827 Blankenfelde-Mahlow, Germany, Telephone: +49 (0) 33 7086 1200 or +49 (0) 33 7086 3500, E-mail: dwthd@rolls-royce.com or DWOSD@rolls-royce.com.

