



## Emergency Airworthiness Directive

**AD No.:** 2024-0172-E

**Issued:** 28 August 2024

Note: This Emergency 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:

AUSTRO ENGINE GmbH

### Type/Model designation(s):

E4 and E4P engines

**Effective Date:** 30 August 2024

**TCDS Number(s):** EASA.E.200

**Foreign AD:** Not applicable

**Supersedure:** None

## ATA 72 – Engine – Piston – Inspection / Replacement

### Manufacturer(s):

Austro Engine GmbH, Wuhu Diamond Aeroengine Co. Ltd.

### Applicability:

E4 and E4P engines, all serial numbers (s/n).

These engines are known to be installed on, but not limited to, Diamond Aircraft Industries DA 40 NG, DA 42 NG, DA 42 M-NG and DA 62 aeroplanes.

### Definitions:

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

**The MSB:** Austro Engine Mandatory Service Bulletin (MSB) MSB-E4-043.

**Affected part:** Piston having Part Number E4A-72-400-000.

### Groups:

Group 1 are engines having an affected part installed.

Table 1 of the MSB provides list of the engine s/n and engine core s/n known to have an affected part installed in production.



Group 2 are engines which are not equipped with an affected part.

**Time since installation:** Flight hours (FH) accumulated by an affected part since new.

**E4A Engine Configuration:** E4 engine model having an s/n E4-A-00001 and subsequent or E4 engine model having an s/n E4-A-156W00001 and subsequent for engines which were manufactured by Wuhu Diamond Aeroengine Co. Ltd.

**E4P Engine Configuration:** E4P engine model having an s/n E4P-B-00001 and subsequent (for E4P-B engines) or an s/n E4P-C-00001 and subsequent (for E4P-C engines).

**E4B Engine Configuration:** E4 engine model having an s/n E4-B-00001 and subsequent or E4 engine model having an s/n E4-B-156W00001 and subsequent for engines which were manufactured by Wuhu Diamond Aeroengine Co. Ltd.

**E4C Engine Configuration:** E4 engine model having an s/n E4-C-00001 and subsequent or E4 engine model having an s/n E4-C-156W00001 and subsequent for engines which were manufactured by Wuhu Diamond Aeroengine Co. Ltd.

**Reason:**

Occurrences of engines failures have been reported, where, during subsequent engine inspection, cracks in pistons were identified. Following investigation determined that only affected part(s), as defined in this AD, are subject(s) of that failure. Further investigation is on-going to determine the root cause of that failure.

This condition, if not corrected, could lead to engine failure, with consequent reduced control of the aeroplane and, for single engine aeroplanes, in emergency landing, possibly resulting in damage to the aeroplane and injury to occupants.

To address this potential unsafe condition, Austro Engine published the MSB, providing instructions for repetitive borescope inspections of affected part(s), and requiring replacement of cracked parts with new ones.

For the reasons described above, this Emergency AD requires repetitive inspections and, depending on findings, replacement of each affected part, and also requires reporting of inspection(s) results to Austro Engine.

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:

**Repetitive Inspection(s):**

- (1) For Group 1 engines: Within the compliance time specified in the Table 1 of this AD, and, thereafter, at intervals not to exceed the value specified in Table 1 of this AD, as applicable,



perform a borescope inspection of each affected part in accordance with the instructions of the MSB.

Table 1 – Initial and Repetitive Inspections Threshold

Engine Configuration	Time Since Installation on the effective date of this AD	Initial Inspection	Repetitive Inspection since last inspection (see Note 1 of this AD)
E4A and E4P	Less than 100 FH	Before exceeding 100 FH since installation	Not to exceed 50 FH
	100 FH or more	Before next flight	
E4B and E4C	Less than 200 FH	Before exceeding 200 FH since installation	Not to exceed 100 FH
	200 FH or more	Before next flight	

Note 1: A non-cumulative tolerance of 10 FH may be applied to the interval for the repetitive inspection specified in paragraph (1) of this AD to allow synchronization of the required inspections with other maintenance tasks, for which a non-cumulative tolerance is already granted in the applicable Maintenance Manual.

#### Corrective Action(s):

- (2) If, during any inspection as required by paragraph (1) of this AD, any discrepancy, as described in the MSB, is detected, before next flight accomplish all the corrective actions in accordance with the instructions of the MSB paragraph 2.1.1.

#### Ferry Flight:

- (3) For the need of initial inspection, as required by paragraph (1) of this AD, a single ferry flight without passengers, not exceeding 3 FH in Visual Meteorological Condition, is allowed to position the aeroplane to a maintenance location where the required inspection can be performed.

#### Reporting:

- (4) Within 30 days after each inspection, as required by paragraph (1) of this AD report the inspection results, to Austro Engine in accordance with the instructions of the MSB section 2.1.3 or 2.1.1.3, as applicable.

#### Credit:

- (5) Inspections and corrective actions accomplished on an engine, before the effective date of this AD in accordance with the instructions of Austro Engine Authorization Request AR1734, are acceptable to comply with the requirements of paragraphs (1), (2) and (4) of this AD for that engine.

#### Terminating Action:

- (6) None.

#### Part Installation:



- (7) For Group 2 engines: From the effective date of this AD, an installation of an affected part on an engine is allowed, provided that after installation this affected part is inspected and, depending on findings corrected, as required by this AD. After installation of an affected part, or an engine core with an affected part installed, on a Group 2 engine, this engine effectively becomes a Group 1 engine.

**Ref. Publications:**

Austro Engine MSB-E4-043 original issue dated 27 August 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. The results of the safety assessment have indicated the need for immediate publication and notification, without the full consultation process.
3. Enquiries regarding this AD should be referred to the EASA Safety Information Section, Certification Directorate. E-mail: [ADs@easa.europa.eu](mailto: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: Austro Engine GmbH, Rudolf-Diesel-Straße 11, A-2700 Wiener Neustadt, Austria.

