

## Emergency Airworthiness Directive

**AD No.:** 2021-0203-E

**Issued:** 10 September 2021

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, 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 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:** 14 September 2021

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

**Foreign AD:** Not applicable

**Supersedure:** None

### ATA 72 – Engine – High Pressure Pump Driving Gear – Inspection / Replacement

**Manufacturer(s):**

Austro Engine GmbH

**Applicability:**

Model 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 inspection SB:** Austro Engine Service Bulletin (SB) MSB-E4-035.

**The replacement SB:** Austro Engine SB MSB-E4-034/1.

**Affected cylinder head:** Cylinder heads, having Part Number (P/N) E4A-12-500-000.

**Affected HPP gear:** High pressure pump (HPP) driving gears, having P/N E4A-30-000-201 and having a s/n as listed in Chapter 1.3 of the replacement SB, as defined in this AD.

**Serviceable part:** Any HPP driving gear, eligible for installation, which is not an affected part.

**Groups:** Group 1 are Model E4 engines in configuration “-A”, installed on single engine aeroplanes. Group 2 are Model E4 engines in configuration “-B” or “-C” and Model E4P engines, installed on twin-engine aeroplanes.

**Reason:**

Occurrences were reported of HPP driving gear failure. Subsequent investigation determined that a certain batch of HPP driving gears was produced with a worn out assembly tool P/N AE300T012-1. Those HPP driving gears may have been damaged during assembly. Concurrently, it was determined that, for engines equipped with a certain cylinder head, a stack up of tolerances exists between the cylinder head, cylinder head cover, camshaft gear and HPP gear. Both scenarios could result in premature HPP gear failure.

This condition, if not corrected, could lead to engine in-flight shut-down with consequent forced landing, possibly resulting in damage to the aeroplane and injury to occupants.

To address this potential unsafe condition, Austro Engine published the inspection SB, as defined in this AD, to provide instructions for HPP gear inspection on engines equipped with an affected cylinder head, as defined in this AD. Austro Engine also published the replacement SB, as defined in this AD, to provide instructions for replacement of affected HPP gears, as defined in this AD.

For the reason described above, this AD requires inspection and/or replacement of HPP gears and prohibits re-installation of affected HPP gears.

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

Required as indicated, unless accomplished previously:

**Inspection:**

- (1) For engines equipped with an affected cylinder head: Before next flight after the effective date of this AD, inspect the HPP driving gear in accordance with the instructions of the inspection SB.

**Corrective Action(s):**

- (2) If, during the inspection as required by paragraph (1) of this AD, the HPP driving gear does not meet the acceptable criteria, as defined in the inspection SB, before next flight, contact Austro Engine for approved instructions and accomplish those instructions accordingly.
- (3) Replacement of the HPP driving gear on an engine in accordance with the instructions of the replacement SB is an acceptable method to comply with the requirements of paragraphs (1) and (2) of this AD for that engine.

**Replacement:**

- (4) For engines equipped with an affected HPP gear: Within the compliance times specified in Table 1 of this AD, as applicable, replace each affected HPP gear with a serviceable part in accordance with the instructions of the replacement SB.

Table 1 – HPP Driving Gear Replacement

Engine Group / Flight Hours (FH) accumulated (see Note 1)		Compliance Time
1	40 FH or more	Before next flight after the effective date of this AD
	less than 40 FH	Before exceeding 40 FH
2	80 FH or more	Before next flight after the effective date of this AD
	less than 80 FH	Before exceeding 80 FH

Note 1: Unless specified otherwise, the FH in Table 1 of this AD are those accumulated by the affected HPP gear since first installation on the HPP.

#### Ferry Flight:

- (5) For a twin-engine aeroplane that has one or two Group 2 engine(s) installed, a single ferry flight is allowed to position that aeroplane to a location where the actions required by this AD can be accomplished on the affected engine(s).

#### Part(s) Installation:

- (6) From the effective date of this AD, do not install an affected part on any engine.

#### Ref. Publications:

Austro Engine SB MSB-E4-034 Revision 1 dated 10 September 2021.

Austro Engine SB MSB-E4-035 original issue dated 10 September 2021.

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 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-Str. 11, 2700 Wiener Neustadt, Austria, Telephone +43-2622-23000-2525, E-mail [service@austroengine.at](mailto:service@austroengine.at).