



Notification of a Proposal to issue an Airworthiness Directive

PAD No.: 17-059

Issued: 11 May 2017

Note: This Proposed Airworthiness Directive (PAD) is issued by EASA, acting in accordance with Regulation (EC) 216/2008 on behalf of the European Union, its Member States and of the European third countries that participate in the activities of EASA under Article 66 of that Regulation.

In accordance with the EASA Continuing Airworthiness Procedures, the Executive Director is proposing the issuance of an EASA Airworthiness Directive (AD), applicable to the aeronautical product(s) identified below.

All interested persons may send their comments, referencing the PAD Number above, to the e-mail address specified in the 'Remarks' section, prior to the consultation date indicated.

Design Approval Holder's Name:

AUSTRO ENGINE GmbH

Type/Model designation(s):

E4 engines

Effective Date: [TBD – standard: 14 days after AD issue date]

TCDS Number(s): EASA.E.200

Foreign AD: Not applicable

Supersedure: None

ATA 72 – Engine – Timing Chain – Replacement / Aircraft Flight Manual – Limitations Section – Amendment

Manufacturer(s):

Austro Engine GmbH

Applicability:

Model E4 engines, all serial numbers having configuration “-B” or “-C”, and E4P engines, all serial numbers, installed on twin engine aeroplanes.

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

Reason:

Considerable wear of the timing chain has been detected on some engines. This may have been caused by windmilling restarts, which are known to cause high stress onto the timing chain.

This condition, if not detected and corrected, could lead to failure of the timing chain and consequent engine power loss, possibly resulting in reduced control of the aeroplane.



To address this potential unsafe condition, Austro Engine included instructions in the engine maintenance manual to periodically inspect the condition of the timing chain, and, depending on findings, to replace the timing chain and the chain wheel, and updated the operation manual to allow windmilling restart only as an emergency procedure.

More recently, Austro Engines published Mandatory Service Bulletin (MSB) MSB-E4-017/2, providing instructions to replace the timing chain for engines with known windmilling restarts.

For the reason described above, this AD requires replacement of the timing chain for engine with known windmilling restarts, and requires amendment of the applicable Aircraft Flight Manual (AFM).

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

Required as indicated, unless accomplished previously:

Note 1: For the purpose of this AD, a timing chain is affected if it was installed on an engine while operating a windmilling restart, or if it cannot be determined that the engine did not experience any windmilling restart. A review of maintenance records and/or flight logs is acceptable to determine whether a timing chain is affected.

Note 2: For the purpose of this AD, a Group 1 engine is an engine equipped with an affected timing chain (see Note 1 of this AD). A Group 2 engine is an engine that is not equipped with an affected timing chain.

Note 3: For the purpose of this AD, Austro Engine MSB-E4-017/2 is hereafter referred to as “the MSB” in this AD.

Replacement:

- (1) For Group 1 engines: Before the affected timing chain exceeds 945 flight hours (FH) since first installation on an engine, or within 110 FH after the effective date of this AD, whichever occurs later, replace the timing chain in accordance with the instructions of the MSB.
- (2) For Group 1 and Group 2 engines: From the effective date of this AD, following each windmilling restart of an engine, before the timing chain of that engine exceeds 945 FH since first installation on an engine, or within 110 FH, whichever occurs later, replace the timing chain of that engine in accordance with the instructions of the MSB.

AFM update:

- (3) For Group 1 and Group 2 engines: Within 30 days after the effective date of this AD, amend the applicable AFM, as specified in Austro Engine operational manual OM-TR-MDC-E4-359b to limit windmilling restart only as emergency procedure, inform all flight crews and, thereafter, operate the aeroplane accordingly.

Note 4: For DA 42 NG and DA 42 M-NG aeroplanes, using AFM TR TR-MÄM-42-973 and for DA 62 airplanes, using AFM TR TR-MÄM-62-240 to update the applicable AFM is an acceptable method to comply with the requirements of paragraph (3) of this AD.



- (4) From the effective date of this AD, it is allowed to install a Group 1 engine on an aeroplane, provided the timing chain of that engine has not exceeded 945 FH since first installation on an engine.

Ref. Publications:

Austro Engine SB MSB-E4-017/2, dated 02 December 2016.

Austro Engine Operation Manual OM-TR-MDC-E4-359b, dated 09 November 2016.

The use of later approved revisions of these documents is acceptable for compliance with the requirements of this AD.

Remarks:

1. This Proposed AD will be closed for consultation on 08 June 2017.
2. Enquiries regarding this PAD should be referred to the EASA Safety Information Section, Certification Directorate. E-mail: ADs@easa.europa.eu.
3. For any question concerning the technical content of the requirements in this AD, please contact: Austro Engine GmbH, Rudolf-Diesel-Str. 11, A-2700 Wiener Neustadt, Austria Telephone +43-2622-23000-2525, E-mail service@austroengine.at.

The referenced publication can be downloaded directly from the Austro Engine GmbH [Service Bulletin](#) webpage.

