



Service Information
No. SI-E4-011

Austro Engine GmbH
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SERVICE INFORMATION

No. SI-E4-011

1. BASIC INFORMATION

1.1. SUBJECT

Global alternative means of compliance (AMOC) to FAA AD 2018-07-16 (g)

1.2. ENGINES AFFECTED

E4-Series engines installed in aircraft under US registry

1.3. REASON

Austro Engine GmbH has certified a waste-gate bridge as a permanent solution instead of the component time limit for the waste-gate controller.

1.4. INFORMATION

Austro Engine GmbH has received FAA approval for a global alternative means of compliance (AMOC) to FAA AD 2018-07-16 paragraph (g) which allows installing a waste-gate bridge according to MSB-E4-022/5 instead of the component time limit for the waste-gate controller.

Austro Engine GmbH recommends the installation of the waste-gate bridge.

In order to use the global AMOC, follow the instructions listed on the global AMOC letter.

2. REMARKS

None

NOTE: SI are used only:

- To distribute information from Austro Engine GmbH to our customers.
- To distribute applicable information/documents from our suppliers to our customers with additional information.

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U.S. Department
of Transportation
**Federal Aviation
Administration**

Compliance and Airworthiness Division

ECO Branch
1200 District Avenue
Burlington, MA 01803
(781) 238-7140, Fax: (781) 238-7199

MAR 06 2019

Christoph Genster
Chief, Office of Airworthiness
Austro Engine GmbH
Rudolf-Diesel-Straße 11
2700 Wiener Neustadt
Austria

Subject: Alternative Method of Compliance Global to Airworthiness Directive (AD) 2018-07-16 relating to Austro Engine GmbH type model E4 and E4P diesel piston engines

Dear Mr. Genster:

The Federal Aviation Administration (FAA) received your email dated December 19, 2018 proposing a Global alternative method of compliance (AMOC) to paragraph (g) of Airworthiness Directive (AD) 2018-07-16.

Airworthiness Directive (AD) 2018-07-16 requires repetitive replacement of the waste gate controller and control rod circlip of all Austro Engine GmbH model E4 and E4P diesel piston engines in accordance with paragraph (g) which refers to the Accomplishment Instructions, paragraph 2.1 of Austro Engine GmbH Mandatory Service Bulletin (MSB) No. MSB-E4-022/2, Rev. 2, dated November 27, 2017 for guidance.

Since the publication of the FAA AD 2018-07-16, Austro Engine has issued a new revision of the Mandatory Service Bulletin MSB-E4-022/5 Rev. 5, dated December 12, 2018. The new revision resolves the unsafe conditions and hence the repetitive replacement of the waste gate controller and control rod circlip is not necessary. The new revision also clarifies that higher level assemblies and engines, that are already produced with the alternative load path (waste-gate con-rod fail-safe bridge) installed, and are considered compliant with the terminating action of the SB.

Your proposal would request alleviation from Airworthiness Directive 2018-07-16 paragraph (g), allowing to replace the repetitive replacement of the waste-gate controller and control rod circlip by the installation of the alternative load-path (fail-safe bridge) in accordance with the terminating action of MSB E4-022/5 for all Austro Engine GmbH type E4, models E4 and E4P, diesel piston engines.

The Engine Certification Office (ECO) has approved your AMOC proposal to paragraph (g) of FAA AD 2018-07-16 for all Austro Engine GmbH type E4, models E4 and E4P, diesel piston engines.

This FAA AMOC is transferable with the aircraft to another owner/operator who operates the aircraft under U.S. registry.

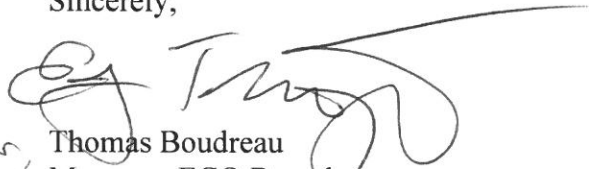
Before using this AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local Flight Standards District Office/Certificate Holding District Office.

All provisions of FAA AD 2018-07-16 that are not specifically referenced above remain fully applicable and must be complied with accordingly.

This AMOC only applies to the FAA AD listed above. The FAA does not have the authority to approve this as an AMOC to any AD issued by another civil aviation authority (CAA). Approval of an AMOC to another CAA's AD must come from that CAA. A copy of this response will be forwarded to the CAA where these aircraft are registered for their consideration.

If you have any questions or need additional information, please contact Wego Wang at telephone (781) 238-7134, fax (781) 238-7199, or electronic mail at wego.wang@faa.gov.

Sincerely,


for, Thomas Boudreau
Manager, ECO Branch

cc: Boston AEG
EASA



MANDATORY SERVICE BULLETIN

No. MSB-E4-022/5
SUPERSEDES MSB-E4-022/4

1. BASIC INFORMATION

1.1. SUBJECT

Waste Gate Control Rod.

1.2. ENGINES AFFECTED

Engine type: E4
Engine model(s): E4, E4P
Serial number(s): all

1.3. REASON

Waste gate control rods with insufficient fatigue life have been identified. Failure of the waste gate control rod will lead to a partial loss of power.

As precautionary action Austro Engine prescribes a time limit for the waste gate controllers without waste gate con-rod fail-safe bridge.

As terminating action for the time limit the waste-gate control-rod fail-safe bridge has been introduced. After installation of the waste-gate control-rod fail-safe bridge the waste-gate controller is set on condition with specified scheduled maintenance checks per Maintenance Manual.

1.4. TIME OF COMPLIANCE

Initial action:

- Upon reaching 250 flight hours in service time of the waste gate controller
- For E4-B and E4-C engines installed on DA 42 M-NG with external containers and E4-A engines:
For waste-gate controllers with more than 200 flight hours as of 27-Nov-2017 within the next 50 flight hours, but not later than 28-Feb-2018 if 250 flight hours in service time of the waste gate controller are exceeded as of 28-Feb-2018.
- All other engines:
For waste-gate controllers with more than 200 flight hours as of 27-Nov-2017 within the next 100 flight hours, but not later than 31-May-2018 if 250 flight hours in service time of the waste gate controller are exceeded as of 31-May-2018.

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No. MSB-E4-022/5

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Repetitive Action:

- Upon reaching 250 flight hours in service time of the waste gate controller

Terminating Action:

- Within 200 flight hours after 30-Apr-2018, but not later than 31-Oct-2018

Prior compliance with MSB-E4-022 through MSB-E4-022/2 is considered equivalent to the initial action or repetitive action, as applicable.

Prior compliance with the terminating action of MSB-E4-022/3 through MSB-E4-022/4 is considered equivalent to the terminating action of MSB-E4-022/5.

1.5. CONCURRENT DOCUMENTS / REFERENCES

- Maintenance Manual E4 Series – Doc. No.: E4.08.04, latest effective issue

1.6. OTHER PUBLICATIONS AFFECTED

None.

2. TECHNICAL DETAILS

2.1. ACCOMPLISHMENT / INSTRUCTIONS

Initial Action:

1. Make sure MM-TR-MDC-E4-386 and MM-TR-MDC-E4-399 are inserted into the Maintenance Manual or a revision of the Maintenance Manual with the Temporary Revisions incorporated is used.
2. Replace the waste gate controller according to Maintenance Manual section 81-00-33.
3. Install a new the spring loaded circlip E4A-41-100-801. Refer to figure 4

Repetitive Action:

1. Replace the waste gate controller according to Maintenance Manual section 81-00-33.
2. Install a new the spring loaded circlip E4A-41-100-801. Refer to figure 4.

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Terminating Action:

NOTE:

- Installing a waste-gate controller or a turbocharger with the waste-gate con-rod fail-safe bridge already installed is considered as accomplishment of the terminating action.
 - For new engines already produced with the waste-gate con-rod fail-safe bridge already installed, the terminating action may be recorded as completed.
1. Make sure MM-TR-MDC-E4-422 is inserted into the Maintenance Manual or a revision of the Maintenance Manual with the Temporary Revisions incorporated is used.
 2. If not yet installed, install a new spring loaded circlip E4A-41-100-801. Refer to figure 4.

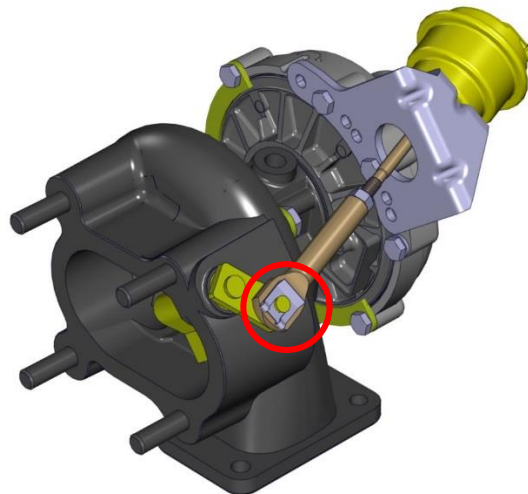


Figure 4: Waste Gate Circlip

3. Install the waste-gate con-rod fail-safe bridge according to Maintenance Manual section 81-00-36 or install a waste-gate controller with the fail-safe con-rod bridge already installed. Make sure there is sufficient clearance to adjacent parts.
4. For twin engine installations only: If there is insufficient clearance between the waste-gate con-rod fail-safe bridge and the fire sensor bracket, shim between the fire sensor bracket and the injector cover with bushings BU2-20-08-0050-C. Refer to Figure 5 and the Airplane Maintenance Manual for installation.

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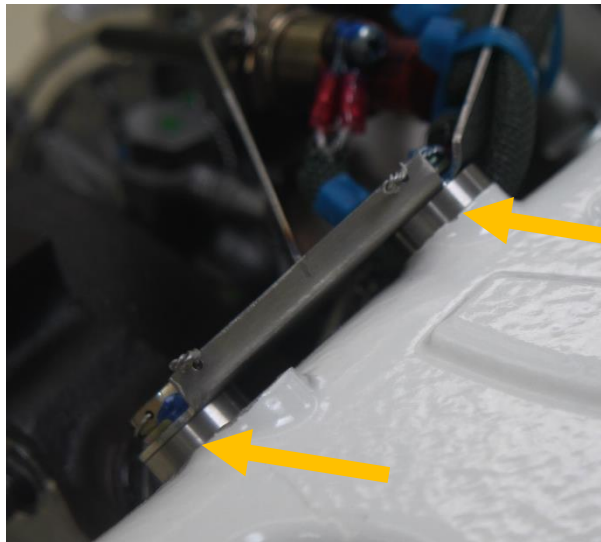


Figure 5: Fire sensor bracket shims

2.2. MASS (WEIGHT)

Negligible.

2.3. APPROVAL STATEMENT

The technical content of this document has been approved under the authority of DOA No. EASA.21J.399.

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3. PLANNING INFORMATION

3.1. MATERIAL & AVAILABILITY

For replacement of the waste-gate controller:

Qty	Part Number	Description
1	E4A-41-120-000	Waste Gate Controller
1	E4A-41-100-801	Spring loaded circlip

For the terminating action:

Qty	Part Number	Description
1	E4A-41-100-801	Spring loaded circlip (if not yet installed)
1	AEP-00265-100	Bracket Assy 1
1	AEP-00265-100	Bracket Assy 2
2	AEP-00247-801	Screw with drill hole
2	E4A-53-300-801	Screw with drill hole
2	DS BU2-20-08-0050-C	Bushing (if necessary)
2	LN 9038 K 08 024	Hexagon Screw (if necessary)

3.2. SPECIAL TOOLS

As stated in the Maintenance Manual E4.08.04.

3.3. LABOR EFFORT

0.5 hours.

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4. REMARKS

NOTE:

- All measures must be carried out by a certified engine station and certified engine mechanics.
- The accomplishment of the instructions shown under chapter 2.1 must be confirmed in the respective engine log book.
- The accomplishment of the instructions must be carried out within the time of compliance according chapter 1.
- In case of doubt please contact the Austro Engine GmbH – After Sales Support (e-mail: service@austroengine.at; Tel: +43 2622 23000 2525).
- For credit information contact Austro Engine GmbH – After Sales Support (e-mail: service@austroengine.at; Tel: +43 2622 23000 2525)

5. EXPLANATORY NOTES

5.1. SYMBOL EXPLANATION



WARNING: Disregarding these safety rules can cause personal injury or even death



CAUTION: Disregarding these special instructions and safety measures can cause damage to the engine or other components.



NOTE: Additional note or instruction for better understanding of an instruction

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