



Mandatory Service Bulletin
No. MSB-E4-026/1

Austro Engine GmbH
Rudolf-Diesel-Strasse 11
2700 Wiener Neustadt
PHONE: +43 2622 23000
FAX: +43 2622 23000-2711

MANDATORY SERVICE BULLETIN

No. MSB-E4-026/1
supersedes MSB-E4-026

1. BASIC INFORMATION

1.1. SUBJECT

Inspection of Engine Harness

1.2. ENGINES AFFECTED

Engine type: E4
Engine model(s): E4, E4P
Serial number(s): E4-A-00001 through E4-A-00539
E4-B-00001 through E4-B-00554
E4-C-00001 through E4-C-00539
E4P-C-00001 through E4P-C-00229

1.3. REASON

Incidents with engine malfunctions, which were traced back to damaged engine harnesses, were reported to Austro Engine GmbH. Improved installation and maintenance instructions to prevent damage of the engine harness caused by incorrect installation have been issued. This service bulletin mandates the inspection of the engine harness installation based on these improved installation instructions.

1.4. TIME OF COMPLIANCE

Within the next 200 flight hours, but not later than 29-Feb-2020.

1.5. CONCURRENT DOCUMENTS / REFERENCES

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

1.6. OTHER PUBLICATIONS AFFECTED

None.

First Issue Date			Rev. No.	Revision Date			Page
01	Mar	2019	01	16	Apr	2019	1-10

2. TECHNICAL DETAILS

2.1. ACCOMPLISHMENT / INSTRUCTIONS

- Make yourself familiar with the routing instructions for the engine harness in Maintenance Manual Section 71-50-03, before you follow the instructions of this Service Bulletin.
- If the inspection results in findings, install the affected sections of the engine harness according to Maintenance Manual Section 71-50-170.
- Install additional cable ties as necessary to attach the engine harness properly.

1. Make sure that MM-TR-MDC-E4-439a is inserted into the Maintenance Manual or a Maintenance Manual revision with the Temporary Revision incorporated is used.
2. Examine the complete engine harness for poor condition and installation:

Make sure that:

- There is sufficient clearance between the engine harness and hot engine parts (e.g. the exhaust system).
- There is sufficient clearance between the engine harness and moving engine parts (e.g. v-ribbed belt).
- The engine harness does not rub on parts next to it.

3. If the engine harness has a black rubbery surface, proceed with step 10. Otherwise (if the engine harness has a green fabric surface) proceed with step 4.
4. Make sure there is sufficient clearance between the wiring harness and the cylinder head. Refer to Figure 1 and Figure 2 for examples of acceptable clearance.



Insufficient clearance can lead to chaffing of the engine harness on the engine.

- As installation aid a red tape is wrapped over the three parallel routed wiring harness branches at the belt drive side of the engine and a red sleeve is on the engine harness branch, that is attached to the fuel rail (refer to Figure 4).

Make sure that:

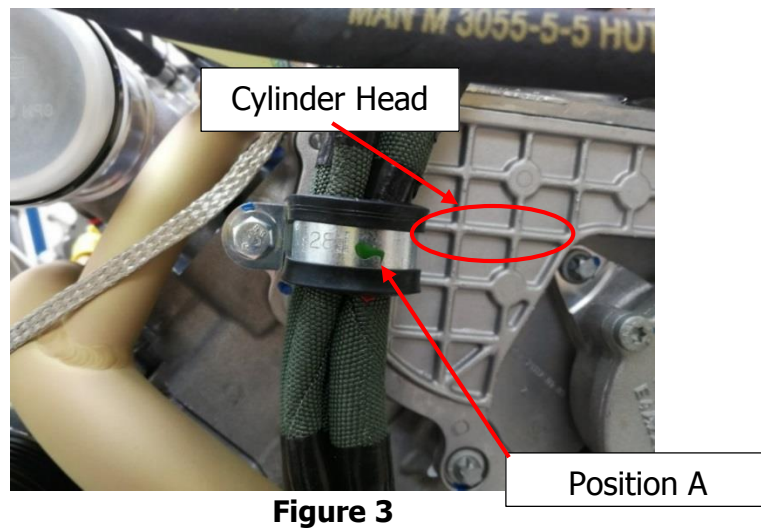
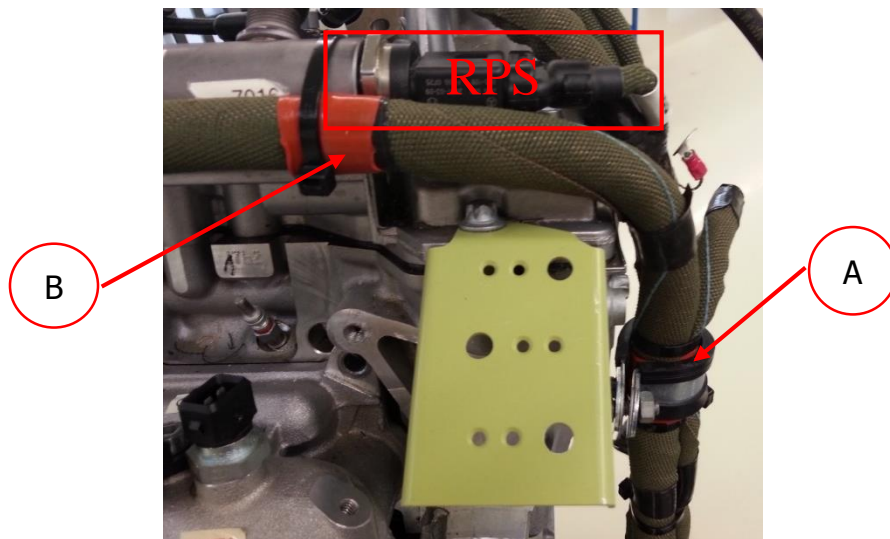
- Step not applicable for E4-A engines: The attached cable clamp is parallel to the fins of the engine head (refer to Figure 3).
- Step not applicable for E4-A engines: The cable clamp fully (A) covers the red tape on the harness (refer to Figure 4).
- The red sleeve (B) is approximately aligned with the rail pressure sensor (RPS) connector (refer to Figure 4).

First Issue Date			Rev. No.	Revision Date			Page
01	Mar	2019	01	16	Apr	2019	2-10


Figure 1

Figure 2

First Issue Date			Rev. No.	Revision Date		Page
01	Mar	2019	01	16	Apr	2019
						3-10


Figure 3

Figure 4

5. Examine the BPA and the CAS 2 Branch for correct installation. Refer to Figure 5.

Make sure that:

- The BPA and CAS 2 Branch are attached to the boost pressure actuator BPA and the camshaft angle sensor CAS 2 with cable ties and edge clips to the BPA bracket (see Figure 5 and Figure 6).
- The cable ties do not unlock the BPA and CAS 2 harness connectors.
- The clearance between the engine harness and the turbocharger is more than 25 mm (1 inch.)
- The BPA filter is attached with a cable tie (see Figure 6).
- The connector adapter (of BPA filter) is used for fixation with the cable tie.
- The cable tie does not press on the BPA hose so tight, that the hose is blocked.

First Issue Date			Rev. No.	Revision Date		Page
01	Mar	2019	01	16	Apr 2019	4-10

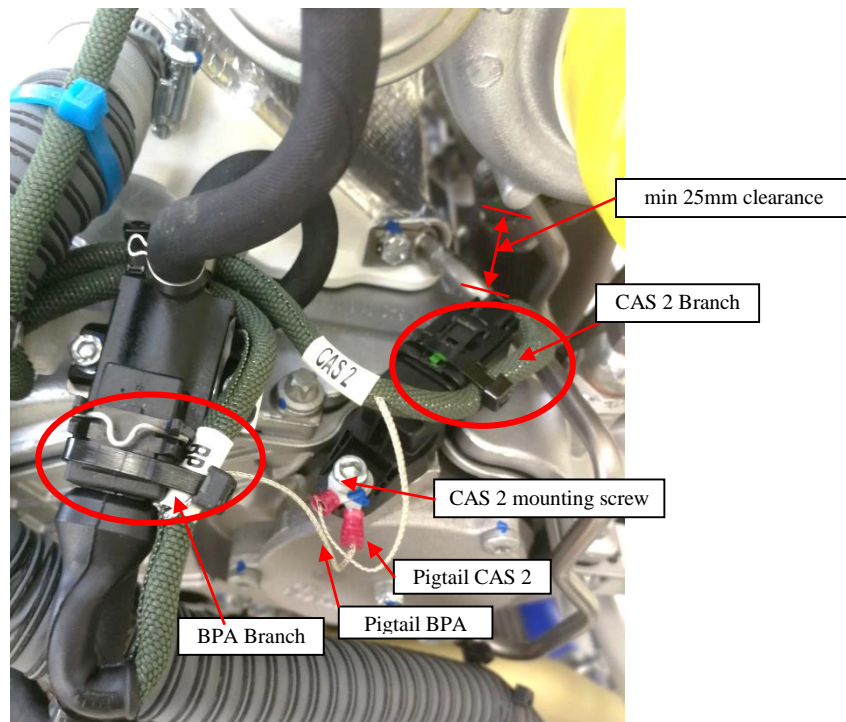

Figure 5

Figure 6

First Issue Date			Rev. No.	Revision Date		Page
01	Mar	2019	01	16	Apr 2019	5-10

6. Examine the cables and connectors for correct installation.

Make sure that:

- The bending radii of the harness branches are sufficiently large. Refer Maintenance Manual Section 71-50-03.
- The harness branches are attached to the connector with a cable tie.
- The cable tie does not unlock the harness connector.
- The BPA branch is attached with a cable tie on the BPA connector housing as shown in Figure 7.

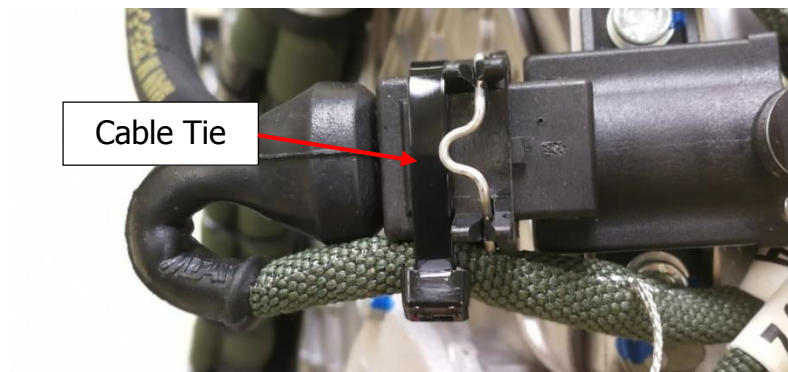


Figure 7

7. Examine the cables and connectors for IAT1 and IAT2 Sensors for correct installation.

Make sure that the cable is attached with cable tie on the connector of the sensors as shown in Figure 8.

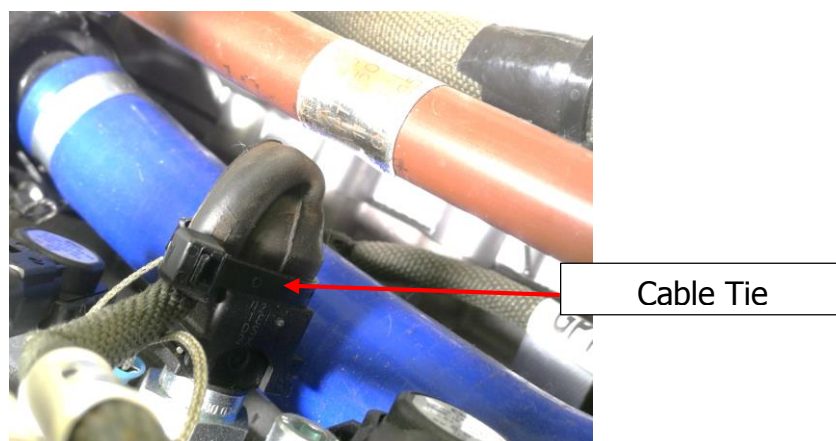


Figure 8

First Issue Date			Rev. No.	Revision Date		Page
01	Mar	2019	01	16	Apr 2019	6-10

8. Examine the cables and connectors of the Coolant temperature cable branch for correct installation.

Make sure that the cable is attached with cable tie directly to CTS connector as shown in Figure 9.

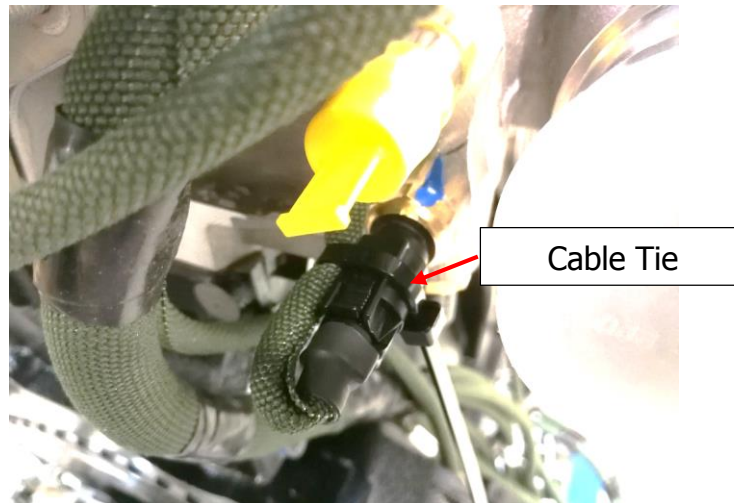



Figure 9

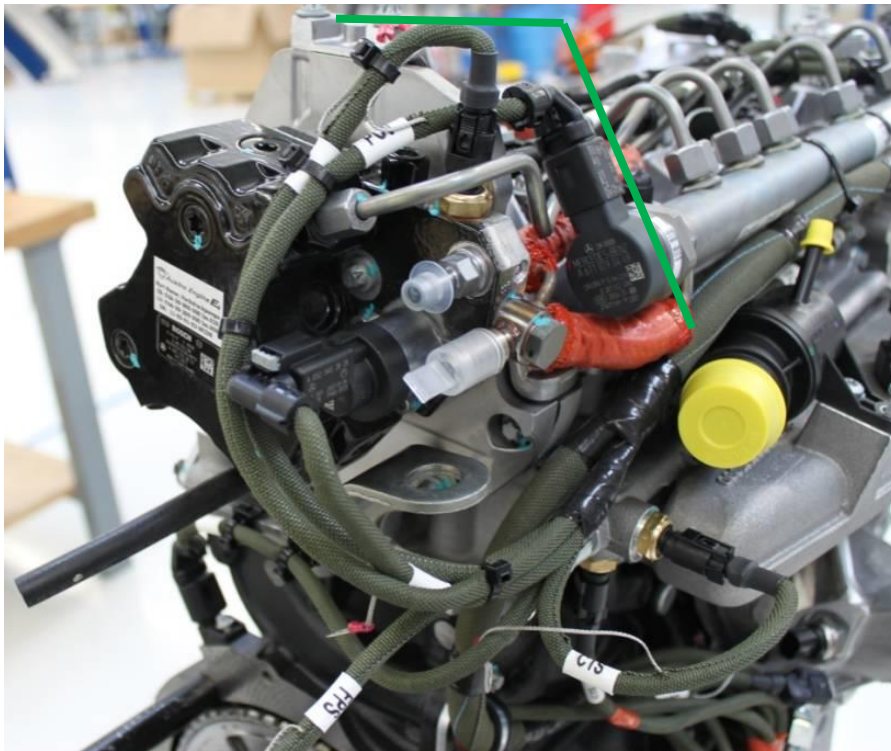
9. Examine the cables and connectors at the high pressure pump for correct installation.

Make sure that

- The engine wiring branch is attached as shown in Figure 10.
- The cable branches are attached with cable ties.
- The harness branches run as long as possible parallel to each other.
- The harness branches do not cross each other, if it is not necessary for connecting to the respective connector.
- The wires do not go over the green marked line (see Figure 10).

 If cables go over the green marked line, they can interfere with the aircraft installation.

First Issue Date			Rev. No.	Revision Date			Page
01	Mar	2019	01	16	Apr	2019	7-10


Figure 10

10. Record this Service Bulletin in the engine log as completed.

First Issue Date			Rev. No.	Revision Date			Page
01	Mar	2019	01	16	Apr	2019	8-10



2.2. ILLUSTRATIONS

None.

2.3. MASS (WEIGHT)

Not affected.

2.4. APPROVAL STATEMENT

The technical content of this document has been approved under the authority of DOA ref. EASA.21J.399.

3. PLANNING INFORMATION

3.1. MATERIAL & AVAILABILITY

None.

3.2. SPECIAL TOOLS

As stated in the Maintenance Manual E4.08.04.

3.3. LABOR EFFORT

Not specified.

First Issue Date			Rev. No.	Revision Date			Page
01	Mar	2019	01	16	Apr	2019	9-10

4. REMARKS

NOTE:

- All measures must be done by a certified engine station and certified engine mechanics.
- The accomplishment of the instructions shown under chapter 2.1 must be recorded in the respective engine log book.
- The accomplishment of the instructions must be done 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

First Issue Date			Rev. No.	Revision Date			Page
01	Mar	2019	01	16	Apr	2019	10-10