

# SERVICE INFORMATION NO. SI 40NG-002/1

## SUPERSEDES SI 40NG-002

**NOTE:** SI's are used only:  
1) To distribute information from DAI to our customers.  
2) To distribute applicable information/documents from our suppliers to our customers with additional information.  
Typically there is no revision service for SI's. Each new information or change of that will be sent along with a new SI.

## I. TECHNICAL DETAILS

### 1.1 Airplanes affected:

All DA 40 NG airplanes

### 1.2 Subject:

Austro Engine Mandatory Service Bulletin MSB-E4-009/2  
ATA-Code: 73-20

### 1.3 Reason:

Update of the Service Information due to revised Austro Engine Mandatory Service Bulletin MSB-E4-009/2, prescribes an analysis of the fuel pressure supply quality to the engine high pressure pump and possible exchange of the pump. With MSB-E4-009/2 the affected serial numbers are limited to certain Engine High Pressure Fuel Pump Part numbers.

### 1.4 Information:

For detailed technical information refer to AE MSB-E4-009/2 which is applicable without any further additions or restrictions.

On basis of the proposed emergency procedure of AE MSB-E4-009, DAI has adopted the DA 40 NG Airplane Flight Manual Doc. No. 6.01.15-E via the temporary revision to the AFM TR-MÄM 40-466 which must be incorporated in the Airplane Flight Manual or a Airplane Flight Manual Revision is used in which the temporary revision to the AFM TR-MÄM 40-466 is incorporated.

If MÄM 40-437 is carried out or the airplane is converted to DA 40 NG via OSB D4-080, the original AE fuel pressure sensor fitting as described in the AE MSB-E4-009 must be installed when performing the ground run for analysis.



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A-2700 Wiener Neustadt  
Austria

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## **II. OTHERS**

| The AE MSB-E4-009/2 is attached to this SI.

Temporary Revision to the Airplane Flight Manual TR-MÄM 40-466 is attached to this SI.

In case of doubt contact Austro Engine GmbH.



Mandatory Service Bulletin  
No. MSB-E4-009/2

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# MANDATORY SERVICE BULLETIN

**No. MSB-E4-009/2**  
**SUPERSEDES MSB No. MSB-E4-009/1**

## 1. BASIC INFORMATION

### 1.1. SUBJECT

High Pressure Pump exchange.

### 1.2. ENGINES AFFECTED

Type: E4 Engine

Serial Number: All engines having the High Pressure Pump (HPP) with the part no.: E4A-30-100-000 installed.

**NOTE:** For all engines having the HPP with the part no.: E4A-30-200-000 installed, no unscheduled maintenance is necessary.

### 1.3. REASON

Power losses were reported due to rail pressure control failures. Analysis has shown that high pressure pump failures are caused by fuel pressure oscillations in the supply line, leading to those incidents.

This MSB defines the replacement of the HPP – E4A-30-100-000.

Furthermore a procedure how to recover power loss occurring in flight to a certain point due to such a rail pressure failure is presented (see chapter 2.2.)

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#### 1.4. TIME OF COMPLIANCE

- 1.4.1 For engines Time Since New (TSN) having more than 45 Flight Hours (FH), within 10 FH but not later than 31<sup>st</sup> July, 2011 carry out the instructions as given in 2.1.
- 1.4.2 For engines TSN having accumulated less than 45 FH, latest at 50FH  $\pm$ 5FH but not later than 31<sup>st</sup> July, 2011 carry out the instructions as given in 2.1.

#### 1.5. CONCURRENT DOCUMENTS / REFERENCES

None.

#### 1.6. OTHER PUBLICATIONS AFFECTED

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

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## 2. TECHNICAL DETAILS


### 2.1. ACCOMPLISHMENT / INSTRUCTIONS

**Replace** the installed HPP according to the E4 Maintenance Manual Doc. E4.08.04, Chapter 73-00-40 using the parts defined under chapter 3.1.

The old HPP becomes unserviceable and it is required to send it back to Austro Engine GmbH including the completed Execution Report, see chapter 6.

### 2.2. POWER LOSS RECOVERY PROCEDURE:

The A/C manufacturer is advised to implement the following procedure appropriately in the A/C operating instructions.


 The following procedure must be followed if an ECU A and ECU B Caution appear simultaneous in flight and the following parameters apply:

- ⇒ the engine power indication remains unchanged and meets expectations,
- ⇒ the perceived power is reduced and
- ⇒ the engine noise has changed (rough-running engine).

Push the Power Lever to 100%. If the perceived power has not changed noticeable or the set point is not reached, pull the Power Lever to 0%.

Afterwards push the Power Level slowly towards a propeller speed of 1975rpm is reached. The engine can provide about 65% power in case of the described failure, this corresponds to max. 1975rpm propeller speed.

If again a power loss is observed during the execution of this procedure, pull the Power Lever again to 0%. Afterwards push the Power Lever towards the position of last observed power loss to approach the available engine power (propeller speed lower than 1975rpm).

 A power demand over the approached engine power must be avoided for the remaining flight. Otherwise an anew power loss will be observed.

With this failure present it is required to land on the next suitable airfield and to inform Austro Engine GmbH.

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### 2.3. ILLUSTRATIONS

None.

### 2.4. MASS (WEIGHT)

Not applicable.

### 2.5. APPROVAL STATEMENT

The technical information or instructions contained in this document relate to the Basic Type Design which has been approved by EASA and to the MDC-E4-215 which has the EASA Major Change Approval 10034063.

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

Amount	Part Name	Part Number	Rev. Number
1	Assy High Pressure Pump	E4A-30-000-000	020
3	Sealing ring DIN7603 Alu 12x16	DIN7603-A12x16-AI	000
2	Sealing ring Form C 12x16x2.0 Cu	DIN 7603-12x16x2.0	000

■ The Assy High Pressure Pump – E4A-30-000-000 (Revision 010 and 020) includes the HPP E4A-30-200-000.

#### 3.2. SPECIAL TOOLS

None.

#### 3.3. LABOR EFFORT

Replacement of HPP and following ground run: 2 hours

#### 3.4. CREDIT

1 hour labor effort for installation

1 hour of labour effort is credited with EUR 68,- per working hour

Transport of required parts is paid by AE

Parts mentioned in 3.1. can be ordered in advance and will be credited when HPP has arrived at AE

For above mentioned credit(s) please send an invoice to AE

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## 4. REMARKS

### **NOTE:**

- All measures must be carried out by a certified engine station and certified engine mechanic.
- 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 1.4.
- In case of doubt please contact the Austro Engine GmbH – After Sales Support (e-mail: [service@austroengine.at](mailto:service@austroengine.at); Tel: +43 2622 23000 2525).
- For credit information contact Austro Engine GmbH – After Sales Support (e-mail: [service@austroengine.at](mailto: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

## 6. APPENDIX

Execution Report.

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## EXECUTION REPORT TO SERVICE BULLETIN MSB-E4-009/2

### ENGINE DATA

Engine Serial Number: \_\_\_\_\_

Airplane Registration: \_\_\_\_\_

Engine operating hours: \_\_\_\_\_

High Pressure Pump operating hours: \_\_\_\_\_

Maintenance Check: \_\_\_\_\_

Date of Exchange: \_\_\_\_\_

Exchanged Parts:

Part Number	Part Name	Exchanged		Removed S/N*	Installed S/N*
		Yes	No		
E4A-30-000-000	Assy High Pressure Pump	<input type="checkbox"/>	<input type="checkbox"/>		

\* For the position of the S/N (serial number) marking on the parts see information on the next page

\_\_\_\_\_  
Date, Name, Signature


Please fax the completed form to Fax No.: +43(0)2622-23000-2709 or e-mail to [service@austroengine.at](mailto:service@austroengine.at).

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## EXECUTION REPORT INFORMATION

The following illustrations indicate where the parts are marked with the S/N. Please enter the S/N of the removed and the installed part into the execution report.  
 Further more the illustrations indicate which HPP needs to be changed (red marking).


- E4A-30-000-000 – High Pressure Pump

 HPP E4A-30-100-000  
 to be **exchanged**



or

(depending on the part revision)

 HPP E4A-30-200-000  
 to be **installed**  
 (Iss. of the E4-A-30-000-000  
 could be 010 or 020)



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## TEMPORARY REVISION

### TR-MÄM 40-466

# High Pressure Pump Procedure

This Temporary Revision TR-MÄM 40-466 is approved in conjunction with the Mandatory Design Change Advisory MÄM 40-466 and is valid in conjunction with the latest revision of the DA 40 NG Airplane Flight Manual until this temporary revision has been incorporated into the Airplane Flight Manual.

The limitations and information contained herein either supplement or, in the case of conflict, override those in the Airplane Flight Manual.

The technical information contained in this document has been approved under the authority of DOA No. EASA.21J.052.

Doc. No.	Section	Affected Pages
6.01.15-E	3	3-26a, 3-26b

### Instruction

- Print this document on yellow paper (single-sided).
- Insert this cover page as the first page of the AFM.
- Insert the other pages of this Temporary Revision in front of the corresponding AFM pages.

Doc. # 6.01.15-E	TR-MÄM 40-466	05-Oct-2010	Cover Page
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Affected Chapters:

**3.5 ENGINE PROBLEMS**

**3.5.3 ENGINE TROUBLESHOOTING IN FLIGHT**

*The following is added after the first NOTE:*

If both ECU A and ECU B Cautions Appear Simultaneous

- if the indicated LOAD remains unchanged, and
  - if the perceived thrust is reduced, and
  - if the engine noise level changes or the engine is running rough
3. POWER lever . . . . . IDLE for 1 second
  4. POWER lever . . . . . slowly increase to 1975 RPM

*If the engine shows a power loss during the POWER lever increases:*

5. POWER lever . . . . . IDLE for 1 second
6. POWER lever . . . . . slowly increase, stop prior to the former observed engine power loss RPM

**WARNING**

Do not increase the POWER lever past the propeller speed of 1975 RPM or the setting determined in step 6. An increase of engine power beyond this setting leads into another power loss.

**NOTE**

With this power setting the engine can provide up to 65% at the maximum propeller speed of 1975 RPM.

7. Land at the next suitable airfield

Otherwise: