

MANDATORY SERVICE BULLETIN

MSB D4-104/1

I TECHNICAL DETAILS

I.1 Category

Mandatory

I.2 Airplanes affected

Type: DA 40 D
Serial numbers: 40.080, 40.084,
D4.001 through D4.399
40.DS001 through 40.DS179

I.3 Date of effectivity

08-Apr-2016

I.4 Time of Compliance

Within 600 flight hours or within 1 year from the date of effectivity, whichever is reached first.

NOTE: Compliance with RSB D4-083/1 constitutes compliance with this MSB.

I.5 Subject

Installation of an improved water separator design in the Manifold Air Pressure (MAP) lines of the ECU.

ATA-Code: 76-00

I.6 Reason

In case of operation of the aircraft in a rather humid climate condensed water can accumulate in the MAP-lines. In order to prevent possible damage to the MAP-sensors DAI recommended the installation of water separators in the MAP lines with RSB D4-083. The initial design of the water separator was improved and its installation was recommended with RSB D4-083/1. An additional membrane provides improved protection of the ECU MAP-sensors from moisture.

In-service experience has shown that operation in certain climate regions has led to an increased number of damaged ECU MAP-sensors caused by condensed water in the ECU MAP lines which could subsequently cause a failure of the ECU. In one case the aircraft experienced an engine failure because the associated ECU Cautions were ignored.

This Service Bulletin was issued to raise the Category from a Recommended Service Bulletin to a Mandatory Service Bulletin prescribing the installation of the latest water separator design.

I.7 Concurrent Documents

None.

I.8 Approval

The technical information or instructions contained in this document relate to the Design Change Advisory No. MÄM 40-814, which has been approved under the authority of EASA Design Organization Approval ref. EASA.21J.052.

The technical content of this document has been approved under the authority of DOA ref. EASA.21J.052.

I.9 Accomplishments / Instructions

See WI-RSB-D4-083 / WI-MSB D4-104, latest effective issue must be complied with.

I.10 Mass (Weight) and CG

Negligible.

II PLANNING INFORMATION**II.1 Material and Availability**

See WI-RSB D4-083 / WI-MSB D4-104, latest effective issue.

II.2 Special Tools

None.

II.3 Labour Effort

Approx. 1.5 hours.

II.4 Credit

None.

II.5 Reference Documents

DA 40 Series Airplane Maintenance Manual, Doc. No. 6.02.01, latest effective issue.

III REMARKS

1. All work must be done by a certified aircraft service station or a certified aircraft maintenance mechanic.
2. All work, in particular that which is not especially described in this Service Bulletin, must be done in accordance with the referenced Maintenance Manual.
3. Completion of all work must be recorded in the log book.
4. In case of doubt contact Diamond Aircraft Industries GmbH.

**EXECUTION REPORT TO
SERVICE BULLETIN
MSB D4-104/1**

AIRPLANE DATA

Airplane Serial Number: _____

Airplane Registration: _____

Airplane Operator: _____

Hours of operation of airplane: _____

No. of landings: _____

Hours of operation-engine _____

Typical operation of airplane: private, club, training, other _____

Date, Name, SignPlease fax the completed form to Fax No. +43-2622-26700-1369 or e-mail to
airworthiness@diamond-air.at

WORK INSTRUCTION

WI-RSB D4-083

WI-MSB D4-104

INSTALLATION OF MAP LINE WATER SEPARATORS

I GENERAL INFORMATION

I.1 Subject

Installation of ECU Manifold Air Pressure (MAP) line water separators.

I.2 Reference Documents

DA 40 Series Airplane Maintenance Manual, Doc. No. 6.02.01, latest effective revision.

I.3 Remarks

- a) All work must be done by a certified aircraft service station or a certified aircraft maintenance mechanic.
- b) All work, in particular that which is not especially described in this work instruction, has to be done in accordance with the referenced maintenance manual.
- c) In case of doubt, contact Diamond Aircraft Industries GmbH.

II DRAWINGS, SPECIAL TOOLS & MATERIALS

II.1 Drawings

None.

II.2 Special Tools

None.

II.3 Material

For airplanes with engine TAE 125-01 installed:

Quantity	Part Number	Description
2	D60-9076-14-01	Water Separator Assembly
1	D4D-7153-14-00_1	Manifold Air Pressure (MAP) Tube A
1	D4D-7153-12-00_1	MAP Tube B
4	PLT1MM30	Cable Tie
2	MS21919WDG4	Clamp
2	13.8 GER	Oetiker I-ear clamp
2	DIN 963A-M4X8	Countersunk head screw

For airplanes with engine TAE 125-02-99 installed:

Quantity	Part Number	Description
2	D60-9076-14-01	Water Separator Assembly
1	D4D-7153-14-00_2	MAP Tube A – old ECU housing
1	D4D-7153-12-00_2	MAP Tube B – old ECU housing
1	D4D-7153-14-00_3	MAP Tube A - new D4 ECU housing (P/N 05-7611-E001904)
1	D4D-7153-12-00_3	MAP Tube B new D4 ECU housing (P/N 05-7611-E001904)
6	PLT1MM30	Cable Tie
1	MS21919WDG4	Clamp
2	13.8 GER	Oetiker I-ear clamp
1	DIN 963A-M4X8	Countersunk head screw

Material is available from Diamond Aircraft Industries.

II INSTRUCTIONS

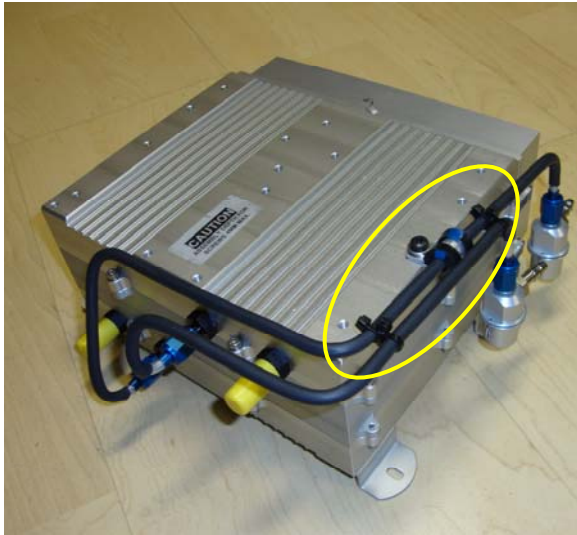
1	Remove the pilot seat in accordance with the AMM, Chapter 25.
2	Disconnect the passenger floor heating hose from the foot well lining.
3	If engine TAE 125-02-99 is installed, remove the glow plug control box from the ECU.
4	Disconnect both MAP tubes from the fittings of ECU A and B on the ECU housing.
5	If no water separators have been installed before: <ul style="list-style-type: none">• Disconnect and remove both MAP tubes from the MAP hoses.
6	If water separators are already installed: <ul style="list-style-type: none">• Disconnect both MAP tubes from the water separators.• Disconnect and remove both water separators from the MAP hoses.
7	Connect water separators D60-9076-14_01 to the MAP hoses with an 13,8 Oetiker I-ear clamp.
8	Connect both MAP tubes to the water separators. MAP tube P/Ns: D4D-7153-12-00_1 & D4D-7153-12-00_1 for TAE 125-01 engine D4D-7153-14-00_2 & D4D-7153-12-00_2 for TAE 125-02-99 engine D4D-7153-14-00_3 & D4D-7153-12-00_3 for TAE 125-02-99 engine with new D4 ECU housing.

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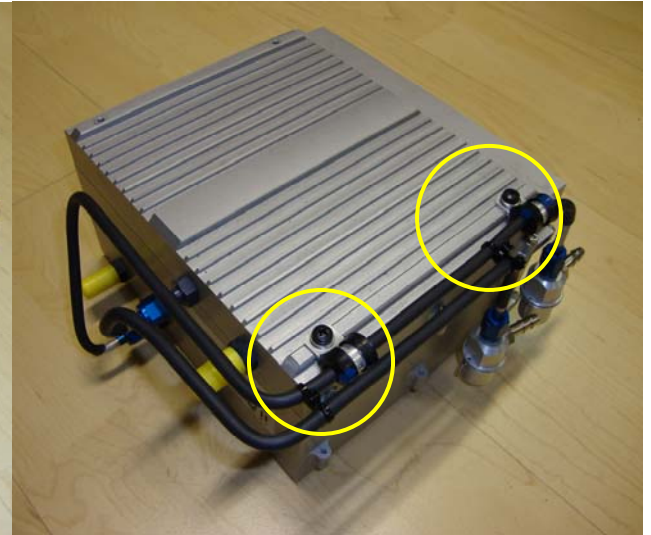
Connect the MAP tubes to the fittings of ECU A and B on the ECU housing.

- If engine **TAE 125-02-99** is installed:
Install clamp MS21919WDG4 with a DIN 963A-M4X8 bolt attaching the MAP A tube to the ECU housing (use Loctite 243) and fix the tubes with cable tie acc. to picture 1.
- If engine **TAE 125-01** is installed:
Install two clamps MS21919WDG4 with DIN 963A-M4X8 bolts attaching the MAP A tube to the ECU housing (use Loctite 243) and fix the MAP tubes with cable tie acc. to picture 2.

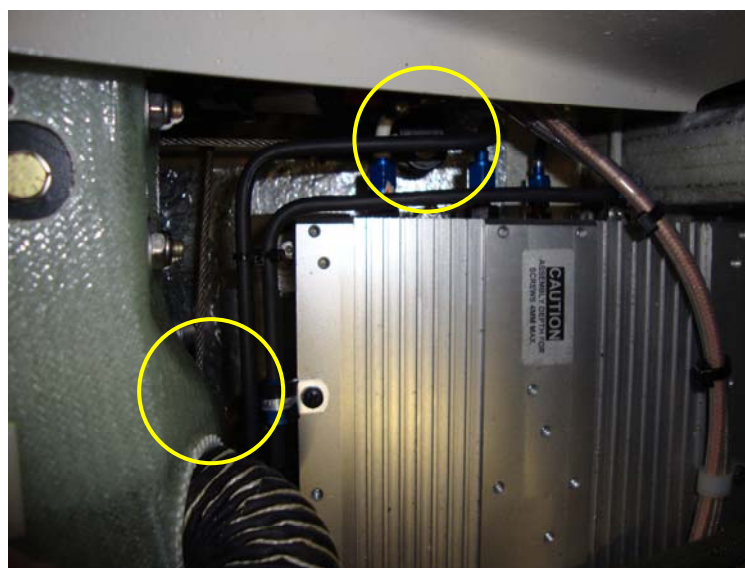
NOTE: If necessary bend the MAP tubes carefully for an optimized routing around the ECU housing. Make sure that the MAP tubes have sufficient clearance to the rudder bell crank and to the rudder cables in all positions acc. to picture 3.



Picture 1



Picture 2



Picture 3

10	If engine TAE 125-02-99 is installed, install the glow plug control box to the ECU housing. Secure bolts with Loctite 243.
11	Install the passenger floor heating hose from the foot well lining.
12	Install the pilot seat in accordance with the AMM, chapter 25.
13	Clean working area, check for foreign objects.
14	Check all altered, replaced, repaired parts for proper function.
15	Test all systems in working area for function.
16	Make all necessary entries in the airplane logs.