

MANDATORY SERVICE BULLETIN

NO. MSB 40-030/3

SUPERSEDES MANDATORY SERVICE BULLETIN NO. MSB 40-030/2

I. TECHNICAL DETAILS

1.1 Category

Mandatory.

1.2 Airplanes affected

DA 40 Serial numbers 40.006 up to and incl. 40.079, 40.081 up to and incl. 40.083 and 40.201 up to 40.417 with fuel shaft D41-2823-20-00 Rev."-" installed (see picture 1 & 2).

1.3 Time of Compliance

A (Inspection):

First Inspection:

For airplanes above 200 hours of operation within the next 15 hours of operation
For airplanes up to 200 hours of operation at the next scheduled inspection

Subsequent inspections:

During scheduled inspection, not exceeding 50 hours of operation until "B" has been complied with

B (replacement of complete universal joint):

If one or more of the defects listed under 1.8.A.3 of this mandatory service bulletin have been found,
else at holders discretion.

1.4 Subject

Inspection of the universal joints between fuel selector handle and fuel selector valve.

ATA-Code: 28-23, Fuel System

1.5 Reason

It has been found that the pins of the universal joints may come loose during operation. This can result in loss of capability to select the fuel tank to supply fuel.

1.6 Concurrent documents

None.

1.7 Approval

The technical information or instructions contained in this document relate to the MÄM 40-142/a.

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

1.8 Measures



Picture 1: New Joint D41-2823-20-00 rev. "a" or later



Picture 2: Old Joint D41-2823-20-00 rev. "a"

A (Inspection):

1. All works must be done in accordance with the instructions given in the AMM.
2. Remove front seat LH (AMM, Chapter 25-10-00).
3. Inspect universal joints (upper and lower) very carefully for:
 - * any sign of wear,
 - * uneven movement
 - * pins not completely pressed in
 - * loose pins (see picture 3)
4. If one or more of the defects listed under 1.8.A.3 of this mandatory service bulletin have been found continue with 1.8.B.
5. Perform check for foreign objects

6. Reinstall seat(s)
7. Perform functional check of all three positions of fuel selector with engine running.
8. Inform DAI about result of inspection via e-mail or fax (using enclosed report sheet)

The picture below shows two of the pins separated from the joint.
Inspection can be done in assembled condition. For better view rotate fuel selector in steps at least for 360 °.



Picture 3: Universal joint with two pins separated

B (replace complete universal joint kit with new kit including fuel shaft D41-2823-20-00 rev. a or later):

1. Remove front seat RH (AMM, Chapter 25-10-00)
2. Remove handle of fuel selector switch
3. Loosen screws of upper center panel (at brake lever)
4. Remove lower center panel (at power lever)
5. Remove center tunnel cover (between seats), mark forward cable (+) of Hobbs meter
6. Remove forward bolts of fuel selector switch plate
7. Lift fuel selector switch and pull out bottom of universal joint kit at fuel selector valve
8. Pull out top of universal joint kit at fuel selector switch.
9. If top universal joint shaft is not already assembled:
 - Set fuel selector valve to OFF position (splined pin in top of valve pointing forward)
 - Set fuel selector switch to OFF position
 - Insert top universal joint into selector shaft with cylindrical retaining compound (Loctite 638, 648 or 680). Do not allow retaining compound to cure at this time!
 - Insert top of selector shaft into selector switch
 - Insert bottom of selector shaft into selector valve
 - Allow retaining compound to cure in place
 - Remove selector shaft
 - Mark and drill $\varnothing 2\text{mm}$ (0.079") hole through shaft and upper universal joint, 6mm from top of shaft

- Install roll pin DIN 1481-2x10-A2 with Loctite (as above)
- 10. Install new universal joint kit by doing items 4.2 to 4.8 in reversed order
- 11. Perform check for foreign objects
- 12. Reinstall seat(s)
- 13. Perform functional check of all three positions of fuel selector with engine running.
- 14. Add AMM-TR-MÄM 40-142/a to Airplane Maintenance Manual
- 15. Inform DAI about replacement via e-mail or fax (using enclosed report sheet)

1.9 Mass (Weight) and CG

Not affected.

II. PLANNING INFORMATION

2.1 Material & Availability

All necessary parts with specific part numbers can be ordered from Diamond Aircraft Industries GmbH or from your local General Distributor or Diamond Service Center. All other parts shall be procured locally.

<u>Qty</u>	<u>Description</u>	<u>Part Number</u>
1	Universal Joint Kit	42.5141 (D41-2823-20-00 rev. a or later)
1	Temporary Revision to AMM AMM-TR-MÄM-40-142/a	AMM-TR-MÄM-40- 142/a

2.2 Special Tools

No special tools are required.

2.3 Labor effort

Inspection only: appr. 1.5 hours.
Replacement of Universal joint kit: appr. 2.5 hours

2.4 Credit

The new universal joint kit can be ordered at Diamond Aircraft or its local distributors free of charge in return of the old ones.

2.4 Reference documents

DA 40 Series Airplane Maintenance Manual, Doc. No. 6.02.01.
AMM-TR-MÄM-40-142/a

III. REMARKS

1. All measures must be carried out by the manufacturer, a certified aircraft service station or a certified aircraft maintenance mechanic.
2. Accomplishment of the measures must be confirmed in the log book.
3. In case of doubt, contact Diamond Aircraft.

INSPECTION REPORT

to MSB 40-030

AIRPLANE DATA

Airplane Serial Number: _____

Airplane Registration: _____

Hours of operation of airplane: _____

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

MAINTENANCE DATA:

Inspection carried out on: _____

Inspection carried out by: _____

During scheduled inspection: yes / no

Condition of universal joints (upper and lower):

Universal joint kit exchanged: yes / no

Date, Name, Sign

SERVICE INFORMATION NO. SI 40-032

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 send along with a new SI.

I. TECHNICAL DETAILS

1.1 Airplanes affected:

DA 40 – Type aircraft Serial Numbers 40.006 and up including 40.079, 40.081 and up including 40.083, 40.201 and up to including 40.417, with fuel shaft Part No. D41-2823-20-00 Rev. 1 installed.

1.2 Subject:

EASA AD 2006-0067 for
inspection/replacement of the fuel selector/fuel valve universal joints
ATA-Code: 28-23

1.3 Reason:


EASA has issued an Airworthiness Directive requiring inspection/replacement of the fuel selector/fuel valve universal joints. This AD supersedes the Austrian AD -2004-003.

1.4 Information:

For detailed technical information see EASA Airworthiness Directive which is applicable without any further additions or restrictions.

II. OTHERS

The EASA Airworthiness Directive 2006-0067 is attached to this SI.
In case of doubt contact Diamond Aircraft Industries.

EASA	AIRWORTHINESS DIRECTIVE	
	<p>AD No : 2006-0067</p> <p>Date: 24 March 2006</p>	
No person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of that Airworthiness Directive unless otherwise agreed with the Authority of the State of Registry.		
Type Approval Holder's Name :	Type/Model designation(s) :	
Diamond Aircraft Industries	DA40	
TCDS Number : EASA .A.022		
Foreign AD : not applicable		
Supersedure : Austrian AD A-2004-003		
ATA 28-23	Fuel - Inspection/replacement of the fuel selector/fuel valve universal joints	
Manufacturer(s):	Diamond Aircraft Industries GmbH, Austria Diamond Aircraft Industries Inc., Canada	
Applicability:	DA 40, Serial Numbers 40.006 and up including 40.079, 40.081 and up including 40.083, 40.201 and up to including 40.417, with fuel shaft Part No. D41-2823-20-00 Rev "-“ installed.	
Reason:	<p>Abnormal manufacturing variations of the universal joints in combination with mechanical wear can lead to a joint failure and subsequent disconnection between selector and the fuel valve. This result in a loss of capability to select the fuel tank for supply. This condition might remain unrecognised by the pilot and can result in fuel starvation during flight and/or unavailability of emergency fuel shutoff.</p> <p>Revision History :</p> <p>This inspection was initially addressed by Austrian AD A-2004-003. The design of the fuel selector/fuel valve universal joint has than been changed by design change MÄM 40-142/a and was introduced into serial production. The initial repetitive AD inspection interval of 50 Hrs is also applicable for this design. The investigation of the inspections carried out, has identified that the new joint design eliminated the design problem and no additional inspection is required.</p>	

Effective Date:	7 April 2006
Compliance:	<p>Inspection :</p> <p>For airplanes with more than 200 hours of operation inspect the universal joint in accordance with MSB 40-030/3 within the next 15 hours of operation.</p> <p>For airplanes with up to 200 hours of operation, or for airplanes already in compliance with AD A-2004-003, inspect the universal joint in accordance with MSB 40-030/3 at the next scheduled inspection but not exceeding 50 hours of operation.</p> <p>Repeat this inspection every 50 Hrs of operation unless the modified universal joint has been installed.</p> <p>Replacement:</p> <p>If one or more defects found on the universal joint, the complete joint assembly has to be replaced with the new joint Part No. D41-2823-20-00 rev "a" or higher, in accordance to MSB 40-030/3.</p> <p>The 50 Hrs inspection interval has been terminated for replaced joints, the required inspections are included in the Aircraft Maintenance Manual with Revision AMM-TR-MÄM-40-142/a, applicable for all replaced new universal joints.</p>
Ref. Publications:	Diamond Aircraft Industries Mandatory Service Bulletin, MSB 40-030/3 or later approved revisions.
Remarks :	<ol style="list-style-type: none"> 1.If requested and appropriately substantiated the responsible EASA manager for the related product has the authority to accept Alternative Methods of Compliance (AMOCs) for this AD. 2.This AD was posted as PAD 06-024 for consultation on 01 February 2006 with a comment period until 15 February 2006. No comment was raised during the consultation period. 3.Enquiries regarding this Airworthiness Directive should be referred to Mr. M. Capaccio, Airworthiness Directive Focal Point - Certification Directorate, EASA. E-mail: ADs@easa.eu.int 4. For any question concerning the technical content of the requirements in this AD, please contact Diamond Aircraft Industries (Ph.: +43 2622 26700 · Fax: +43 2622 26780) E-mail: office@diamond-air.at