MANDATORY SERVICE BULLETIN

MSB 42-091

I TECHNICAL DETAILS

I.1 Category

Mandatory.

I.2 Airplanes affected

Type:	DA 42, DA 42 M,
Serial numbers:	42.005 through 42.416, 42.427;
	42.AC001 through 42.AC151;
	42.M001 through 42.M026;

I.3 Date of Effectivity

28-Jun-2011

I.4 Time of Compliance

Within the next 100 flight hours, but not later 12 months from the date of effectivity.

Recurring inspection every 200 flight hours until replacement with an improved design.

I.5 Subject

Main Landing Gear Bearing Housing

ATA-Code: 32-17

I.6 Reason

During standard maintenance on aircraft operated mainly in coastal areas several Main Landing Gear Bearing Housing have been found with cracks initiating from corrosion on the surface between the attachment bolts and the housing. This service bulletin is issued to draw the attention to that area and prescribes an inspection of the Main Landing Gear Bearing Housing. If there are cracks in the housings, the housings must be replaced by an improved 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 42-498, which has been approved under the authority of EASA Design Organization Approval No. 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

Comply with WI-MSB 42-091, latest effective issue.

I.10 Mass (Weight) and CG

Not affected.

II PLANNING INFORMATION

II.1 Material and Availability

See WI-MSB 42-092 latest effective issue.

Materials are available from Diamond Aircraft Industries.

II.2 Special Tools

None.

II.3 Labor Effort

Approx. 1 hours for inspection (both sides).

Approx. 12 hours for replacement (both sides)

II.4 Credit

For all airplanes within warranty period for replacement:

12 labor hour and Material acc. to WI-MSB 42-091

II.5 Reference Documents

Diamond Aircraft 42 Series Airplane Maintenance Manual, Doc. No. 7.02.01, latest effective issue.

III REMARKS

1. All works must be done by a certified aircraft service station or a certified aircraft maintenance mechanic.
2. All works, particular those that are not especially described in this Service Bulletin, must done in accordance with the referenced Maintenance Manual.
3. Completion of all works must be confirmed in the log book.
4. If material and/or labor hours are subject to be credited through Diamond Aircraft Industries, the Service Bulletin must be carried out by an authorized Diamond Service Center and the Warranty Application incl. Work Report must be sent not later than 30 days after completion of work.
5. In case of doubt contact Diamond Aircraft Industries GmbH.

EXECUTION REPORT TO SERVICE BULLETIN MSB 42-091

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, Sign

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

WORK INSTRUCTION

WI-MSB 42-091

Inspection of MLG bearing housing

I GENERAL INFORMATION

I.1 Subject

This Work Instruction describes the inspection and if required, replacement with an improved design of the MLG (main landing gear) bearing housing.

I.2 Reference Documents

Diamond Aircraft DA 42 Series Airplane Maintenance Manual, Doc. No. 7.02.01, latest effective issue.

I.3 Remarks

a) The work must be carried out by a certified aircraft service station or a certified aircraft maintenance mechanic.

b) All works, particular those that are not especially described in this work instruction, must be carried out 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 for replacement

Puller	VR D60-3217-11-00
Installation tool	VR D60-3217-12-00

II.3 Material for replacement

Quantity	Part No.	Description	Item
16	LN 9037 M8x32	Screw	1
50	LN 9025-0815K	Washer	2
2	D60-3217-51-00_1	MLG bearing housing front assy	3
4	D60-3217-11-01_01	Washer sheet	4
32	LN 9348-M8	Self-locking-nut	5
14	LN 9037-M8x30	Screw	6
2	LN 9037-M8x50	Screw	6
2	D60-3217-61-00_1	MLG bearing housing rear assy	7
a.r.*	D60-3217-11-07	GFK spacer	(8)
16	DIN 9021-M8-ZP	Washer	9
1	CA1000-CART or JC 11 (Celloseel QH)	Chromate free j. Compounf 130ml Cart (PRC De Soto) or Chromate compound (PRC De Soto)	

a.r. *) If a adjustment of the axial clearance on the MLG bearing housing is necessary.

Materials are available from Diamond Aircraft Industries.

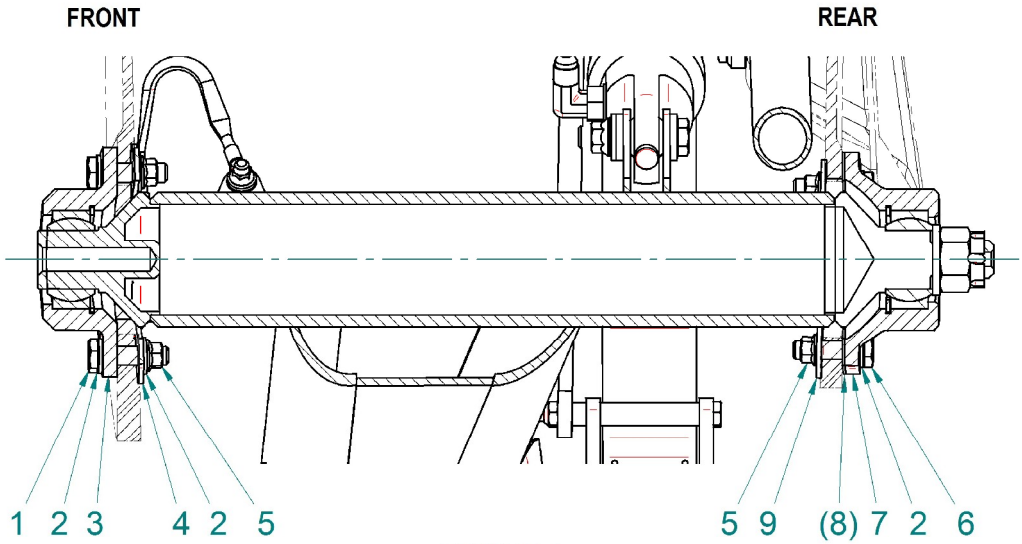
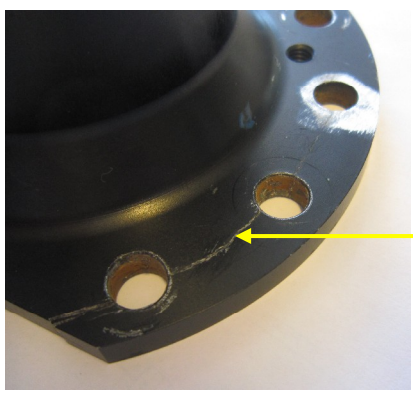


FIGURE 1

III INSTRUCTIONS

III.1 Inspection of MLG bearing housing

1)	Raise the airplane on jacks and move the wing and rear fuselage trestles into position to support the airplane. Refer to AMM section 7-10. Pull the GEAR, GEAR WRN / ELEV. LIMIT and STALL WRN circuit-breakers. **WARNING: Make sure that the GEAR, GEAR WRN ELEV LIM, and STALL WRN circuit breakers are pulled before you perform maintenance on the landing gear. The landing gear retraction system can cause serious injury to personnel if operated by accident.**
2)	Remove Fuel Filter Cap RH and LH. Refer to AMM section 52-40.
3)	Remove Maintenance Cap 2 LH and RH. Refer to AMM section 52-40.
4)	Examine all four bearing housings for cracks between the attachment bolts.  Front Bearing Housing  Rear Bearing Housing  **CRACK**

5)	If cracks are found, replace the MLG bearing housing in accordance with Section III.2. If no cracks are found proceed with step 6.
6)	Install Maintenance Cap 2 LH and RH. Refer to AMM section 52-40.
7)	Install Fuel Filter Cap RH and LH. Refer to AMM section 52-40.
8)	If Replacement per section III.2 was carried out, perform operation test of the landing gear. Refer to AMM section 32-30.
9)	Lower the airplane and remove the wing and rear fuselage trestles.
10)	Set the GEAR, GEAR WRN / ELEV. LIMIT and STALL WRN circuit-breaker.
11)	Clean working areas, check for foreign objects.
12)	Check all altered, replaced, repaired parts for proper function.
13)	Test all systems in working area for function.
14)	Make all necessary entries in the airplane logs.

III.2 Replacement of all four MLG bearing housing

1)	Bleed the hydraulic system: • Retract the landing gear to bleed the system. • Operate the emergency extension of the landing gear (Repeat this step one or two times).
2)	Remove Fuel Filter Element. Refer to AMM section 28-20. **CAUTION:** Seal fuel system to prevent dust or foreign objects intruding the fuel system.
3)	Remove the flexible heat pipe from the clamp to gain more space to reach the front bearing housing.
4)	Disconnect the main gear doors from the main gear leg.
5)	Disconnect the MLG Folding Stay Assembly in acc. with AMM section 32-10 paragraph 9. B.
6)	Remove the front bearing housing: • Remove the 8 bolts, nuts and washers which hold the bearing housing onto the fuselage. • Use the bearing housing puller VR-D60-3217-11-00 to get the bearing housing off the longitudinal pivot. **Note: Support the main gear leg and make sure not to scratch the surface.**

7)	Install the front bearing housing P/N: D60-3217-51-00_1. • Remove surface protection at the bonding connection of the bearing housing. • Use the installation tool VR D60-3217-12-00 to install the bearing on the longitudinal pivot. Apply a thin film of corrosion protection CA1000-CART or JC 11 on the pivot. • Apply a thin film of corrosion protection CA1000-CART or JC 11 on the attachment bolts. • Install the 8 bolts, washers and nuts acc. to figure1. • Fastening torque 26 Nm – 32 Nm. • Seal the bonding connection with appropriate coating, e.g. Nycote 7-11.
9)	Remove the rear bearing housing: • Remove the cotter-pin form the castle nut. • Remove the castel nut. • Remove the 7 bolts, nuts and washers which hold the bearing housing onto the fuselage. • Remove the bolt, 3 washers, 2 spacer, the spacer sleeve and the nut from the bearing housing. • Use the bearing housing puller VR-D60-3217-11-00 to get the bearing housing off the longitudinal pivot. **Note: Support the main gear leg and make sure not to scratch the surface.**
10)	Install the rear bearing housing P/N: D60-3217-61-00_1. • Remove surface protection at the bonding connection of the bearing housing. • Use the installation tool VR D60-3217-12-00 to install the bearing on the longitudinal pivot. Apply a thin film of corrosion protection CA1000-CART on the pivot. • Apply a thin film of corrosion protection CA1000-CART on the attachment bolts. • Install the 7 bolts, nuts and washers which hold the bearing housing onto the fuselage acc. to figure 1. • Install the bolt, 3 washers, 2 spacers, the spacer sleeve and the nut to the bearing housing. Fastening torque 26 Nm – 32 Nm. • Check the axial clearance of the gear leg. • Required axial clearance: max 0,2mm, if necessary install a GFK spacer. • Install the castle nut and adjust axial clearance by tightening the castle nut. • Tighten by hand the castle nut. • Check the axial clearance again. • Install the cotter-pin form the castle nut. • Seal the bonding connection with appropriate coating, e.g. Nycote 7-11.
11)	Connect the MLG Folding Stay Assembly in acc. with AMM Chapter 32-10 Section 10
12)	Connect the main gear doors to the main gear leg.
13)	Reinstall the flexible heat pipe.
14)	Install Fuel Filter Element. Refer to AMM section 28-20.
15)	Proceed with Section III.1, Item 6.