

MANDATORY SERVICE BULLETIN

MSB 40NG-020/6

SUPERSEDES MSB 40NG-020/5

I TECHNICAL DETAILS

I.1 Category

Mandatory.

I.2 Airplanes affected

Type: DA 40 NG

Serial numbers: All S/N with OÄM 40-334 (landing gear with large tires) installed.

I.3 Date of effectivity

21-Aug-2013

I.4 Time of Compliance

Within the next 50 landings but not later than 4 months from the date of effectivity, whichever comes first and within every 100±10 landings for P/N D44-3223-10-00X01 thereafter.

I.5 Subject

Inspection of the nose landing gear (NLG) pivot of NLG-legs installed under OÄM 40-334 (landing gear with large tires) for cracks and possible rework or replacement.

ATA-Code: 32-20

I.6 Reason

The nose landing gear (NLG) pivot broke away from the NLG-leg during landing on a rough field. Initial checks on other airplanes revealed some additional pivots with cracks initiated.

This Service Bulletin (SB) requires initial and recurring visual inspections of the pivot as an immediate action. NLG-pivots that show only signs of cracking in the chrome-surface-plating may be reworked and kept installed.

The installation of a reinforced NLG-leg D44-3223-10-00X02, D44-3223-10-00X02R01 or later is a terminating action for the recurring inspection.

I.7 Concurrent Documents

None.

I.8 Approval

The technical information or instructions contained in this document relate to the Design Change Advisories No. MÄM 40-696 and RÄM 40-157, which have 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

Comply with WI-MSB 40NG-020, latest effective issue.

I.10 Mass (Weight) and CG

No appreciable change.

II PLANNING INFORMATION

II.1 Material and Availability

See WI-MSB 40NG-020, latest effective issue.

II.2 Special Tools

If required: dye penetration equipment.

II.3 Labour Effort

Approx. 0.5 hours.

II.4 Credit

None.

II.5 Reference Documents

DA 40 NG Airplane Maintenance Manual, Doc. No. 6.02.15, 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, 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 40NG-020/6**

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 _____

MAINTENANCE DATA:

Inspection carried out on: _____

Inspection carried out by: _____

During scheduled inspection: yes / no

Condition of nose landing gear leg:

Nose landing gear leg reworked: yes / noNose landing gear leg exchanged: yes / no_____
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-MSB 40NG-020

I GENERAL INFORMATION

I.1 Subject

Inspection of the nose landing gear (NLG) pivot of NLG-legs installed under OÄM 40-334 (landing gear with large tires) for cracks and possible rework or replacement.

I.2 Reference Documents

DA 40 NG Airplane Maintenance Manual, Doc. No. 6.02.15, latest effective issue.

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 if not described in this work instruction, must 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

D44-3223-30-00-ST NLG Bushing Extraction Tool if required
D44-3223-31-00-ST NLG Bushing Installation Tool if required
If required: dye penetration equipment

II.3 Material

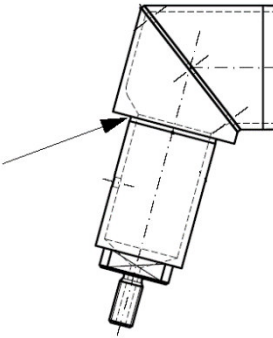
Quantity	Part Number	Description
1	DIN985-M12-A2	Nut, Hexagon
(1)	D44-3223-10-00X01 or D44-3223-10-00X02 or D44-3223-10-00X02R01	NLG Leg High Heel Welding Assy
(1)	LN9348-M8	Hexagon Nut

(-)-items are required for replacement only.

Material is available from Diamond Aircraft Industries.


III INSTRUCTIONS



Instructions-Table 1: Inspection of NLG-leg

1	Disconnect battery (AMM, Chapter 24-31-00).
2	Remove nose wheel fork (AMM, Chapter 32-20-00).
3	Carefully clean pivot.
4	<p>Inspect the nose landing gear leg at shown area very carefully (from all sides) for cracks using a magnifying glass (min 10x). In case of doubt use dye penetration method.</p> 
5	<p>If cracks are detected or if cracks are suspected under the chrome plating:</p> <ul style="list-style-type: none"> - At first time detection, rework may be feasible, see Instruction-Table 2. - If rework is not feasible or cracks are deeper than the limit or rework has been already accomplished, replace nose landing gear leg (AMM, Chapter 32-20-00).
6	If NLG-leg was reworked: re-apply grease to ground area as a temporary surface protection.
7	<p>Inspect upper and lower collar bushings of nose wheel fork for chafing marks on the outer edge of the collar. If chafing marks are found, replace collar bushing with bushings D44-3223-30-30.</p> <p>Note Use bushing extraction and installation tools D44-3223-30-00-ST and D44-3223-32-00-ST for replacement.</p>
8	<p>Inspect washer D41-3223-00-34 for deformation.</p> <p>Note The washer must be absolutely planar.</p>
9	<p>Inspect upper and lower O-rings between nose wheel fork and nose wheel leg for damage. Lubricate the O-rings with Lubricant Type 1 i.a.w. AMM Section 12-20.</p>
10	Reinstall nose wheel fork (AMM, Chapter 32-20-00).
11	Check steering friction (AMM, Chapter 32-20-00).
12	Reconnect battery (AMM, Chapter 24-31-00).

13	Clean working areas, 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.
17	On first inspection inform DAI about result of inspection via e-mail or fax (using enclosed execution report). In case of replacement, return unserviceable part to DAI.

Instructions-Table 2: Rework: feasibility and instructions

1	<p>Guidance for decision whether to start rework or not:</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%; padding-right: 10px;"> <p>Cracks most likely in surface-plating only material</p>  <p>or</p>  </div> <div style="width: 45%;"> <p>Cracks most likely also in core material</p>  </div> </div> <div style="margin-top: 20px;"> <p>Detections only on one side and continuous lines. -> rework feasible</p> <p>Detections are tooth-edge like. -> rework most likely unsuccessful, replacement recommended</p> <p>CAUTION: The final dimensions of the rework and the absence of cracks determine whether the NLG-leg needs replacement or not. This instruction item shall only help to avoid unnecessary work.</p> </div>
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2	<p>Use a pencil grinder with diameter 5 to 5.5 mm cylindrical grinding stone to remove the chrome-plating in the affected area. Grind to a maximum depth of 0.3 mm. Make sure that all transitions are smooth with no sharp edges.</p>  <p style="text-align: center;">Symbolic picture of pencil grinder</p>
3	<p>Use sandpaper with grid 320 to smoothen the ground area. Use a metallic rod of diameter 5 mm to support the sand paper.</p>
4	<p>Polish the ground area. Use Scotch-Brite™ or equivalent.</p>  <p style="text-align: center;">Reference for finished ground surface</p>
5	<p>Use dye penetration method to verify absence of cracks.</p>
6	<p>Clean the NLG-leg.</p>
7	<p>Use grease for temporary surface protection.</p>