

MANDATORY SERVICE BULLETIN

NO. MSB-D4-059/1

SUPERSEDES MSB-D4-059

I TECHNICAL DETAILS

I.1 Category

Mandatory

I.2 Airplanes Affected

Type: DA 40 D

Serial Numbers: 40.080, 40.084
D4.001 through D4.188, D4.190 through D4.261, D4.263
through D4.317, D4.326 through D4.329
40.DS001 through 40.DS004

I.3 Date of Effectivity

14-Feb-2008

I.4 Time of Compliance

At next 200 hours inspection from the date of effectivity, but not later than 30-Sep-2008.

I.5 Subject

Replacement of aileron and flap bellcranks located in the wing, with bellcranks that allow for additional angular movement of the push rods, and replacement of bent rod ends.

I.6 Reason

Rod ends in the aileron and flap control system were slightly bent to achieve clearance. This non-preferable practice became obsolete, since a new design of the bellcranks is available. This service bulletin calls for replacement of the bent rod ends and the installation of the new design bellcranks.

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 40-297/c and MÄM 40-300/f, which have been approved under the authority of EASA Design Organization Approval No. EASA.21J.052.

The technical content of this document has been approved und the authority of DOA No. EASA.21J.052.

I.9 Accomplishment/Instructions

WI-MSB-D4-059, latest effective issue must be complied with.

I.10 Mass (Weight) and CG

Negligible.

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

WI-MSB-D4-059 is attached to this Service Bulletin.
All Material is available through Diamond Aircraft.

II.2 Special Tools

None.

II.3 Credit

All parts listed in WI-MSB-D4-059 and 4.0 hours of labor.

II.4 Labor Effort

4.0 hours of work for both sides.

II.5 Reference Documents

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

III REMARKS

1. All measures must be carried out by a certified aircraft station or a certified aircraft mechanic.
2. Accomplishment of the measures must be confirmed in the log book.
3. In case of any doubt, contact Diamond Aircraft Industries.
4. If material and labor hours are subject to be credited through Diamond Aircraft Industries, the SB must be carried out by an authorized Diamond Service Center and the Warranty Application must be sent not later than 31-Oct-2008.
5. Bellcranks of the old design (part numbers DA4-2717-50-00 and DA4-2757-30-00) may no longer used as spar parts on affected airplanes. Bellcranks of the old design are clear anodized while bellcranks of the new design are black anodized.



EXECUTION REPORT for MSB D4-059/1

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, Sign

Please fax the completed form to Fax No. **43-2622-26700-369 or e-mail to
airworthiness@diamond-air.at

WORK INSTRUCTION

WI-MSB-D4-059

„Replacement of aileron and flap bellcranks in the wing“

I GENERAL INFORMATION

I.1 Subject:

Replacement of aileron and flap bellcranks located in the wing, with bellcranks that allow for additional angular movement of the push rods, and replacement of bent rod ends.

I.2 Reference Documents:

Diamond Aircraft DA 40 Series Airplane Maintenance Manual, Doc. No. 6.02.01, 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. In case of doubt, contact Diamond Aircraft.
- 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.

II DRAWINGS, SPECIAL TOOLS & MATERIALS

II.1 Drawings:

DA4-2717-00-00_01

II.2 Special Tools:

None.

II.3 Material:

Qty	Description	Part Number
2	Bell Crank Aileron Wing Assy	DA4-2717-50-00_01
2	Bonding Sheet 1	DA4-2717-00-01_01
2	Bell Crank Flap Assy	D60-2757-30-00
4	Rod end	DAI-9027-00-01
4	Bolt	LN 9037-M6x32
4	Bolt	LN 9037-M6x28
12	Self-locking nut M6	DIN 985-M6-A2

III INSTRUCTIONS

Replacement of aileron bellcrank on all affected airplanes:

1.	Disconnect/Remove aileron push rods from the bellcrank.
2.	Record adjusted length of the short pushrod (from the aileron bellcrank to the aileron horn).
3.	Replace aileron bellcrank, refer to AMM section 27-00-00. NOTE: Keep bolt and washers, replace self-locking nut.
4.	Replace bent rod end (eye-end fitting with spherical bearing) and adjust to correct length, refer to AMM section 27-00-00. CAUTION: The thread of the rod end must be in safety.
5.	Install Bonding Sheet and reconnect/reinstall the push rods to the bellcrank using the LN 9037-M6x32 bolt and a new self-locking nut. Refer to DA4-2717-00-00_01 and AMM section 27-10-00.
6.	Clean working area and check for foreign objects.
7.	Repeat items 1 to 6 on the other wing.
8.	Perform aileron system test procedure, refer to AMM section 27-10-00.
9.	Test all systems in working area for function.

Replacement of flap bellcrank, only for airplanes with serial number 40.080, 40.084, D4.001 through D4.188, D4.190 through D4.238, D4.240 through D4.252, D4.255 through D4.261, D4.263 through D4.272, D4.274 through D4.278, D4.281, D4.288 (MÄM 40-300 through MÄM 40-300/f not carried out in production):

NOTE: flap bellcranks installed per MÄM 40-300 through MÄM 40-300/f are black anodized (these need no replacement).

10.	Disconnect/Remove flap push rods from the bellcrank.
11.	Record adjusted length of the short pushrod (from the flap bellcrank to the flap horn).
12.	Replace flap bellcrank, refer to section AMM section 27-00-00. NOTE: Keep bolt and washers, replace self-locking nut. NOTE: In order to remove the bolt holding the bellcrank, it may be necessary to loosen or remove the bolts holding the pedestal to the rib. If so all loosened or removed bolts must be installed properly after installation of the new bellcrank!
13.	Replace bent rod end (eye-end fitting with spherical bearing) and adjust to correct length, refer to AMM section 27-00-00. CAUTION: The thread of the rod end must be in safety.
14.	Reconnect/Reinstall the push rods to the bellcrank using the LN 9037-M6-28 bolt and a new self-locking nut.
15.	Clean working area and check for foreign objects.
16.	Repeat items 10 to 15 on the other wing.
17.	Perform flap system test procedure, refer to AMM section 27-50-00.
18.	Test all systems in working area for function.

For all affected airplanes:

19.	Make necessary entries into aircraft log.
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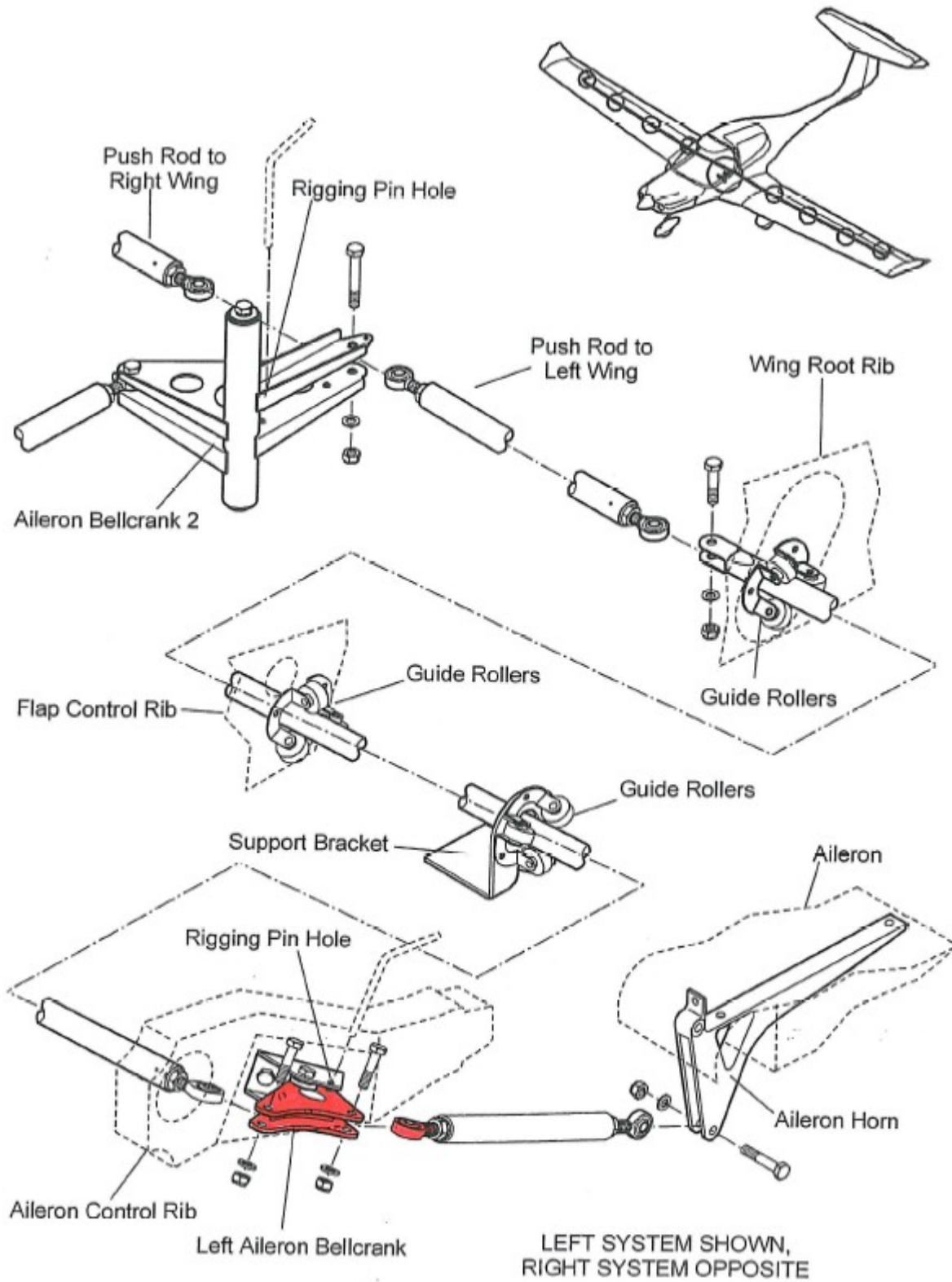


Figure 1: Aileron Controls in the Wing (colored items are affected by this SB)

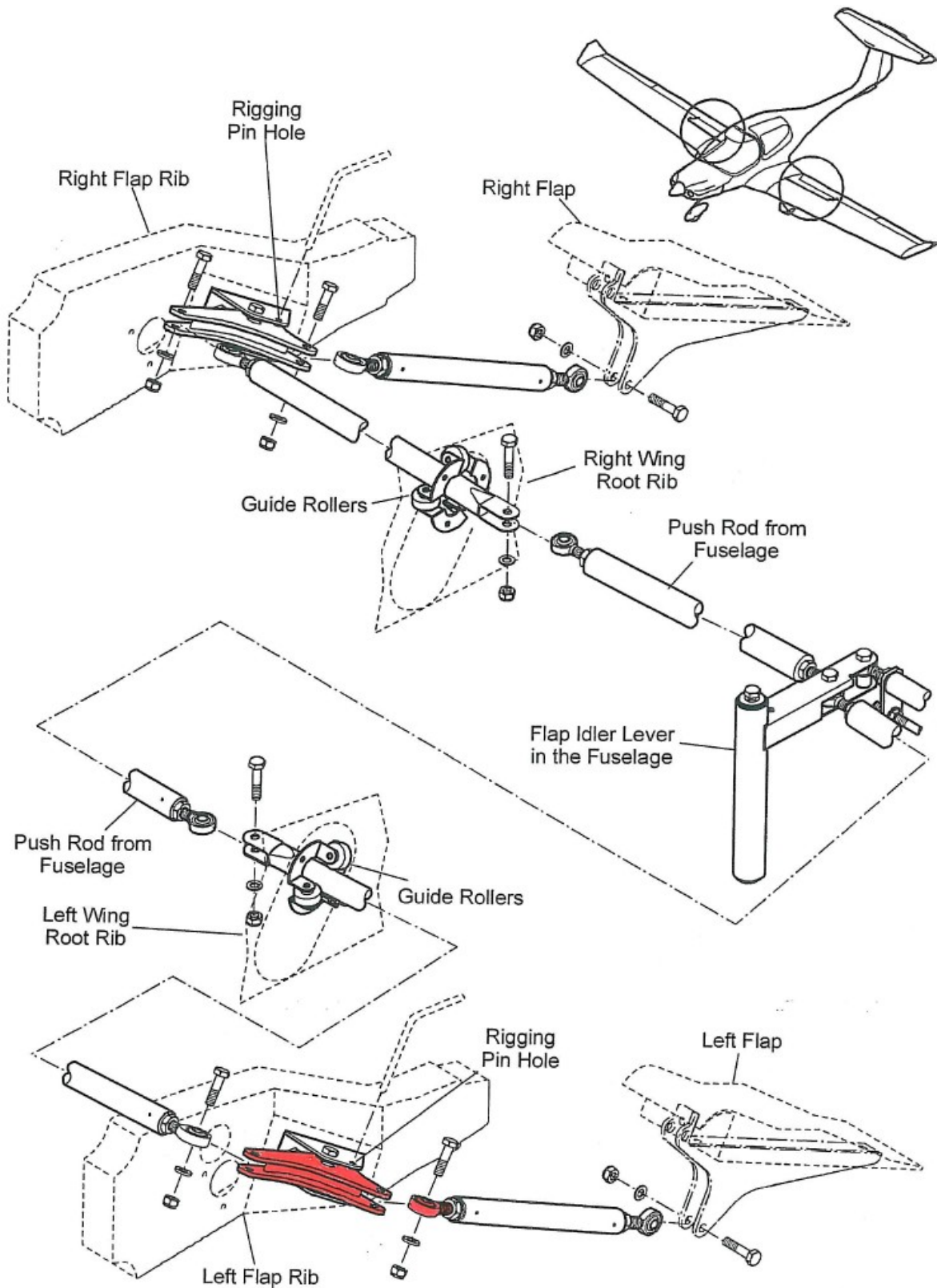
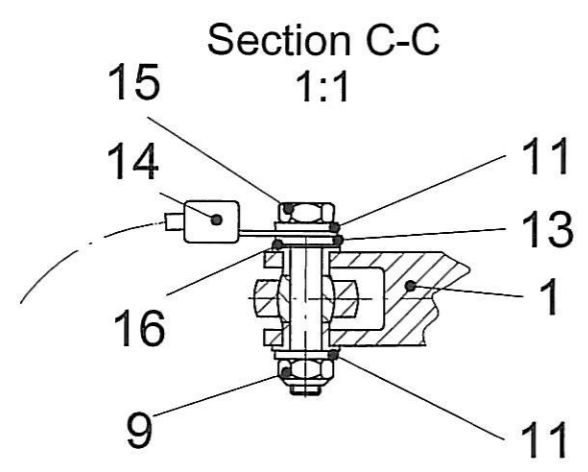
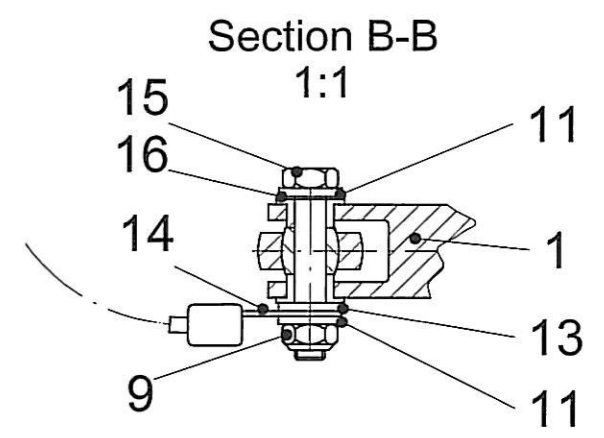
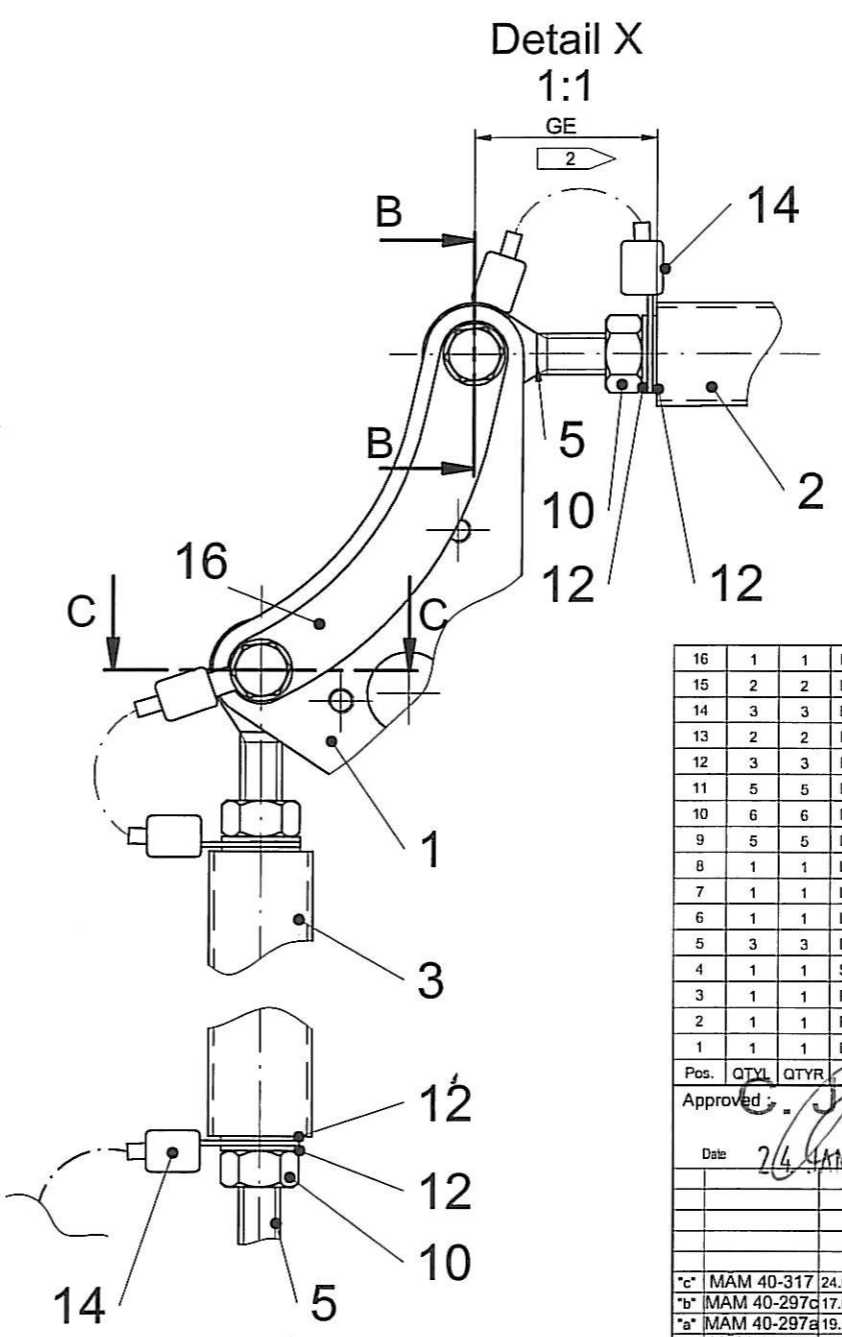
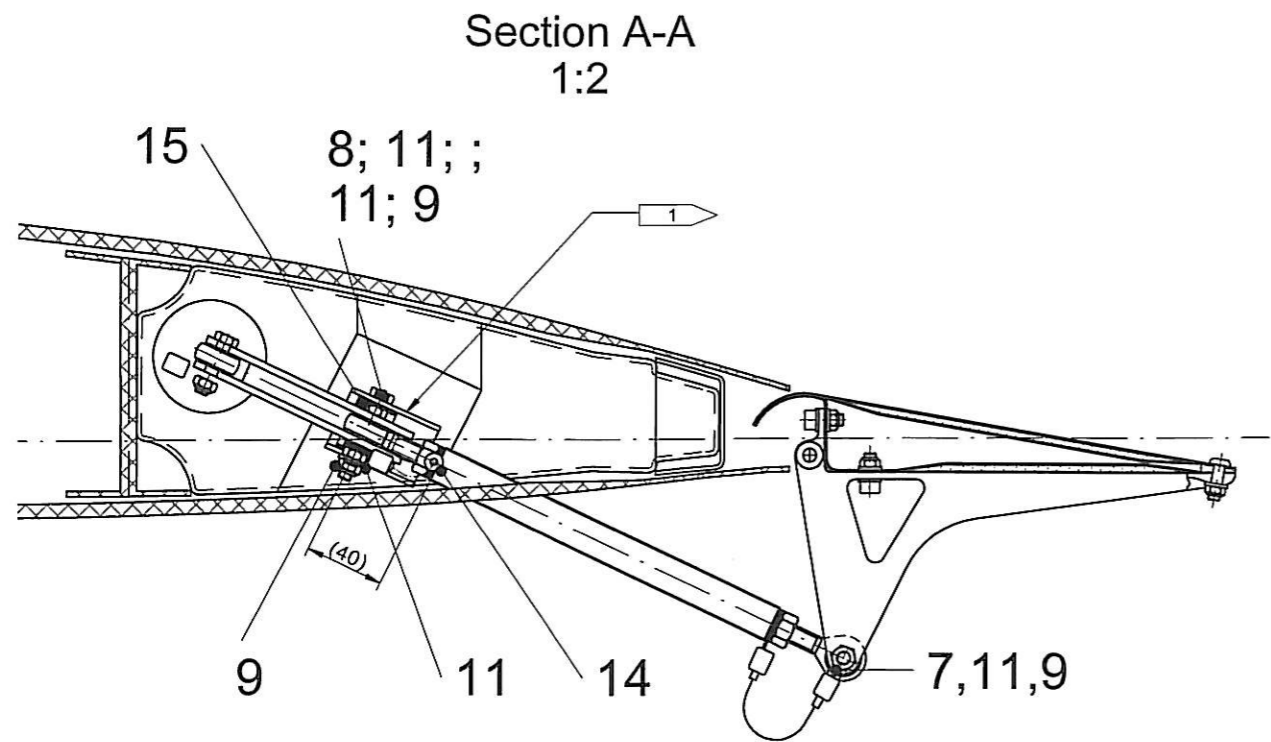
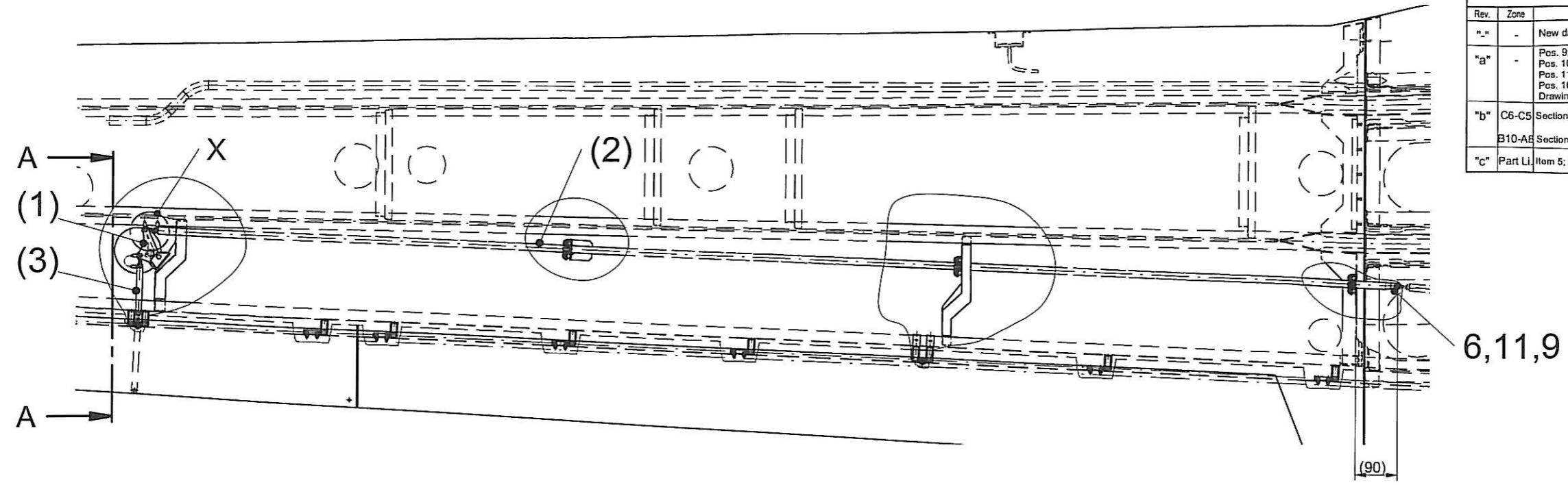


Figure 2: Flap Controls in the Wing (colored items are affected by this SB)

REVISIONS		
Rev.	Zone	Description
".."	-	New drawing, does not supersede another drawing.
"a"	-	Pos. 9; DIN 985-M6-zincd changed to DIN 985-M6-A2 Pos. 10; DIN 934-M8-zincd changed to DIN 934-M8-A2 Pos. 11; DIN 125A-6,4-zincd changed to DIN 125A-6,4-A2 Pos. 16; DA4-2717-00-01_01 new added Drawing new organized.
"b"	C6-C5	Section B-B renamed to Section C-C B10-A8 Section C-C new added.
"c"	Part Li	Item 5; DA1-9072-00-01 corrected to DA1-9027-00-01



- Notes:**
- 1 Rigging hole for zero position
 - 2 GE-initial position if not specified otherwise 35mm
- LH shown
RH opposite

Pos.	QTYL	QTYR	Part Number	Description	Specification	Supplier
16	1	1	DA4-2717-00-01_01	Bonding Sheet 1		
15	2	2	LN 9037-M6x32	Hexagon screw		
14	3	3	BW1-B14-RB8-RB6-100	Bonding wire assy		
13	2	2	DIN 6797J-6,3-zincd	Lock washer		
12	3	3	DIN 6797J-8,4-zincd	Lock washer		
11	5	5	DIN 125A-6,4-A2	Washer		
10	6	6	DIN 934-M8-A2	Hexagon nut		
9	5	5	DIN 985-M6-A2	Self-locking nut		
8	1	1	LN 9037-M6x42	Hexagon screw		
7	1	1	LN 9037-M6x26	Hexagon screw		
6	1	1	LN 9037-M6x22	Hexagon screw		
5	3	3	DA1-9027-00-01	Head of joint rod		Hirschmann/Askubal
4	1	1	ST1-6-0245-C	DS Distance bush 1		
3	1	1	PR1-16x0,5-0170-D	DS Push rod 1		
2	1	1	PR2-20x0,5-6-6-3430-D	DS Push rod 2		
1	1	1	DA4-2717-50-00_01	Aileron bell crank wings		

Approved: *G. Jüttner* Checked: *M. Kowarsch*
 Date: 24 JAN 2008 Date: 24 JAN 2008
 Next Higher Assembly: Title: **Aileron control wings assy**
 General Tolerance: ISO 2768 medium Scale: 1:10
 Drawing Number: **DA4-2717-00-00_01** Sheet 1 from 1
 Saved under: **DA4-2717-00-00_01c.dft**