

SERVICE BULLETIN

SERVICE BULLETIN NO: 53-001

REF NO: 188

MODIFICATION NO:

ATA CHAPTER: 53

FUSELAGE - REAR FUSELAGE STABILIZER-TRIM ATTACHMENT COMPONENTS - INSPECTION

1. Planning Information

A. Effectivity

- (1) All PC-6 aircraft up to, and including, MSN 946.
- (2) All PC-6 aircraft, manufactured by Fairchild, MSN 2001 up to, and including, MSN 2092.
- (3) All PC-6 horizontal stabilizers held as spares.
- (4) All Fairchild type connecting pieces (6232.0026) held as spare.

NOTE: The part numbers of PILATUS and Fairchild type connecting pieces (6232.0026) and the bearing supports (6304.0023) usually have more than eight numbers. The last one or two digits of the part numbers can be different from item to item.

- (5) All fittings (116.40.06.033), without an index after the part number, held as spare or in stores.

NOTE: These fittings can be identified by their lugs having a uniform thickness (Ref. Fig. 2). Fittings (116.40.06.033) with index A or B after the part number (which can be identified by their unequal lugs thickness) (Ref. Fig. 2) are not affected.

B. Concurrent Requirements

None

This Service Bulletin supersedes Service Bulletin 147.

C. Reason

(1) Problem

It is possible for cracks to occur in the following stabilizer-trim attachment and structural components in PC-6 aircraft:

- Fitting (116.40.06.112) or (116.40.06.033) in aircraft with electrical horizontal-stabilizer control-systems (CONFIG 1)
- Connecting piece (6232.0026 - all variants) in aircraft with mechanical horizontal-stabilizer control-systems (CONFIG 2)
- Bearing fork (116.40.06.034) in all horizontal stabilizers (CONFIG 1)
- Bearing support assembly (6304.0023) (Ref. Fig 1, Items 2 and 3)

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- Auxiliary Frame (FR) 12a Assembly (112.35.06.197) (CONFIG 1) or 6201.0134 (CONFIG 2)

(2) Solution

- (a) Do inspections for crack damage in the applicable stabilizer-trim attachment components and replace defective parts as necessary. No cracks are permitted. All crack damaged components must be replaced.
- (b) Replace Fairchild type connecting pieces (6232.0026) (CONFIG 2) with PILATUS type connecting pieces (6232.0026) without inspection, to prevent possible crack damage problems.
- (c) Replace fittings 116.40.06.033, without an index after the part number, (Ref. Fig. 2) with fittings 116.40.06.033, with an index after the part number or 116.40.06.112, without inspection, to prevent possible crack damage problems.

D. Description

This Service Bulletin gives the data and instructions to do inspections for crack damage in the applicable stabilizer-trim attachment components and to replace defective components (if necessary).

Revision No. 1 is issued to correct the tolerance of the actuator attachment hole diameters in the fitting (6) (CONFIG 1), to correct the applicability of the Service Bulletin, to add a new figure to show the differences between the fittings and to add the requirement to replace the fittings, P/N116.40.06.033, without an index after the part number.

NOTE: These fittings can be identified by their lugs having a uniform thickness (Ref. Fig. 2).

Operators who have complied with the original issue of this Service Bulletin (Issue Feb 16/05), do not have to repeat the inspection. They have to get access to the fitting and do a check of part number of the fitting. If the fitting is P/N 116.40.06.033, without an index after the part number, the fitting has to be replaced.

NOTE: These fittings can be identified by their lugs having a uniform thickness (Ref. Fig. 2).

E. Compliance

Mandatory.

Required at the next 100 hour inspection or three calendar months after the effective date of this Service Bulletin, unless already accomplished.

F. Approval

The technical aspects of this Service Bulletin have been approved by the Federal Office for Civil Aviation (FOCA) of Switzerland as an Airworthiness Directive.

PILATUS advises Operators/Owners to check with their local Airworthiness Authorities for any changes, local regulations or sanctions that may affect the embodiment of this Service Bulletin.

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G. Manpower

	Total (Inspection)	Total (Replacements)
Preparation	1.0	N/A
Inspection	1.5	N/A
Installation/Replacement - Fitting (CONFIG 1)	1.5	N/A
Installation/ Replacement - Connecting Piece (CONFIG 2)	1.5	N/A
Replacement - Bearing Fork (CONFIG 1)	N/A	4.0
Replacement - Bearing supports (CONFIG 2)	N/A	6.0
Close up	0.5	N/A
TOTAL MAN-HOURS	4.5	10.0

NOTE: Man-hours figures do not include the time required to cure sealants and adhesives.

H. Weight and Balance

(1) Weight Change

Not affected.

(2) Moment Change

Not affected

I. Electrical Load Data

Not changed.

J. Software

Not changed.

K. References

Aircraft Maintenance Manual (AMM), 27-45-11 (CONFIG 1 and 2), 55-11-11.

Repair and Overhaul Manual (ROM), Chapter 2 and 13.

L. Publications Affected

Not applicable.

M. Interchangeability of Parts

Not applicable.

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2. Material Information

A. Material - Price and Availability

Not applicable. Modification kit not required.

B. Material Necessary for Each Aircraft

(1) Material to be Purchased

Not applicable. Modification kit not required.

(2) Additional Material to be Procured

Operators must order the following parts as necessary for replacement:

New Part No.	Description	Old Part No.	Qty	Disp. Code	Fig	Item
112.35.06.197 6201.0134	Auxiliary Frame 12a - Assembly	112.35.06.197 6201.0134	1	D	1	N/A
116.40.06.033	Fitting (CONFIG 1)	116.40.06.033	1	D	1	6
116.40.06.034	Fork - Bearing (CONFIG 1)	116.40.06.034	1	D	1	12
116.40.06.112	Fitting - SB 147 (CONFIG 1)	116.40.06.112	1	D	1	N/A
6232.0026.01	Connecting Piece (CONFIG 2)	6232.0026.01	1	D	1	9
6304.0023.01	Support - Bearing (Left) (CONFIG 2)	6304.0023.01	1	D	1	3
6304.0023.02	Support - Bearing (Right) (CONFIG 2)	6304.0023.02	1	D	1	2
932.35.14.105	Bolt (NAS6604-5)	N/A	1	N	1	N/A
932.35.14.109	Bolt (NAS6604-9)	N/A	1	N	1	N/A
938.07.68.305	Nuts (MS21046-4E)	N/A	1	N	1	N/A

Disposition Codes: D - Discard / N - New / R - Return to Pilatus

(3) Operator Supplied Materials

Part No.	Description	Qty	Remarks
904.48.85.107	Abrasive (Scotch-Brite)	A/R	Very Fine
908.40.32.251	Corrosion preventative (Alodine 1200S)	A/R	Material Item No. P07-001
908.63.81.101	Solvent (White Spirit)	A/R	Item No. P01-008 (or approved alternative)
910.02.05.031	Primer (Epoxy)	A/R	Material Item No. P07-007
910.02.05.032	Hardener	A/R	Material Item No. P07-007A (for primer paint)

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Part No.	Description	Qty	Remarks
910.31.20.040	Corrosion Preventative (Mastinox 6856H)	A/R	Material Item No. P04-012
939.17.81.018	Rivet (MS20470AD4)	A/R	Solid, U/Head
939.19.86.101	Rivet - (CR3223-4-2)	A/R	CherryMAX

C. Material Necessary for Each Spare

(1) Material to be Purchased

Operators must order the following parts as necessary for replacement:

New Part No.	Description	Old Part No.	Qty	Disp. Code	Fig	Item
116.40.06.034	Fork - Bearing	116.40.06.034	1	D		N/A
6304.0023.01	Support - Bearing (Left) (CONFIG 2)	6304.0023.01	1	D	1	3
6304.0023.02	Support - Bearing (Right) (CONFIG 2)	6304.0023.02	1	D	1	2

Disposition Codes: D - Discard / R - Return to Pilatus

D. Reidentified Parts

Not applicable.

E. Tooling - Cost and Availability

Not applicable.

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3. Accomplishment Instructions - Aircraft

A. Preparation

- (1) Remove the access panel FL2.
- (2) Remove the horizontal stabilizer actuator (Ref. AMM, 27-45-11 (CONFIG 1), Page Block 401). This step is only applicable on CONFIG 1 aircraft.
- (3) Remove the horizontal stabilizer actuator (Ref. AMM, 27-45-11 (CONFIG 2), Page Block 401). This step is only applicable on CONFIG 2 aircraft. During this procedure use clamps (or equivalent) to make sure the cables stay in position on spools of the mechanical actuator and operating mechanism.
- (4) Use applicable supports to hold the horizontal stabilizer in a position which gives access to bottom surface.

B. Removal (Ref. Fig. 1)

- (1) Remove the fitting (6). This step is only applicable for CONFIG 1 aircraft.
 - (a) Remove the nuts (7), washers (5), bolts (4).
 - (b) Remove the fitting (6) from FR12a.
 - (c) Discard the fitting if it is P/N 116.40.06.033, without an index after the part number.

NOTE: These fittings can be identified by their lugs having a uniform thickness (Ref. Fig. 2). Fittings (116.40.06.033) with index A or B after the part number (which can be identified by their unequal lugs thickness) (Ref. Fig. 2) require the inspection to be carried out.

- (2) Remove the connecting piece (9). This step is only applicable for CONFIG 2 aircraft.
 - (a) Use a 3,2 mm (0.126 in.) diameter drill to remove the rivet which attaches the connecting piece (9) to FR12a (Ref. ROM, Chap 2). This step is only applicable for CONFIG 2 aircraft with Fairchild type connecting pieces.
 - (b) Remove the nuts (11), washers (10), bolts (8) and disassemble the connecting piece (9) from FR12a. Discard Fairchild type connecting pieces, these must be replaced.
 - (c) Deburr the rivet hole in FR12a. This step is only applicable for CONFIG 2 aircraft with Fairchild type connecting pieces.

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C. Inspection

- (1) Do the dye-penetrant flaw detection (PFD) tests
 - (a) Obey the manufacturers instructions and use the solvent (Item No. P01-008, or approved alternative), abrasive (Scotch-Brite, or approved alternative) and/or non-metal scrapers to remove the layers of paint and protection from:
 - All surfaces of the fitting (6) or connecting piece (9)
 - The surfaces of the bearing fork (12) or bearing supports (2) and (3) to which you have access
 - The location on the surface of FR12a where the fitting (6) or connecting piece (9) was installed
 - (b) Obey the manufacturers instructions and use dye flaw detection procedures (fluorescent or color contrast) to do inspections for cracks in the fitting (6) or connecting piece (9) and the bearing fork (12) or bearing supports (2) and (3) and the applicable area of RF12a. No crack damage is permitted. You must replace:
 - Cracked components (Ref. Table - Component Replacement Data)
 - The two bearing supports (2) and (3) if only one is found cracked
 - FR12a if cracks are found
- (2) Use a X10 magnifier and a source of bright light to do an inspection of FR12a for crack damage and signs of corrosion. Crack damage is not permitted. You must replace FR12a (Ref. ROM, Chap 2). Surface corrosion is permitted if not less than 90% of the material thickness remains after the corrosion is removed (Ref. ROM, Chap 12).

Component	Part No.	Replacement
FR12a (Assembly)	112.35.06.197 6201.0134	Ref. ROM, Chap 2
Fitting (CONFIG 1)	116.40.06.033	Ref. Para D
Bearing Fork (CONFIG 1)	116.40.06.034	Ref. Para D
Fitting (CONFIG 1)	116.40.06.112	Ref. Para D
Connecting Piece (CONFIG 2)	6232.0026	Ref. Para D
Bearing Support (Left) (CONFIG 2)	6304.0023	Ref. ROM, Chap 2
Bearing Support (Right) (CONFIG 2)	6304.0023	Ref. ROM, Chap 2

Component Replacement Data

- (3) Send all crack damaged components found during Steps 1 and Step 2 to PILATUS. Include the aircraft serial number, flying hours and cycles.
- (4) Use internal vernier callipers (or equivalent instrument) to do a check of the actuator attachment hole diameters in the fitting (6) (CONFIG 1) and connecting piece (9) (CONFIG 2). Hole diameters of more than 9,555 mm (0.3762 in.) in the fitting or 16.036 mm (0.631 in.) in the connecting piece are not permitted. Replace defective components (Ref. Table - Component Replacement Data).

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- (5) Use internal vernier callipers (or equivalent instrument) to do a check of the diameters of the attachment bolt holes in the fitting (6) (CONFIG 1) and FR12a (CONFIG 1). Hole diameters of more than 4,85 mm (0.191 in.) are not permitted. Replace the component if defective. If necessary, also replace FR12a, if the applicable holes for the fitting are out of limits (Ref. Table - Component Replacement Data).
- (6) Use internal vernier callipers (or equivalent instrument) to do a check of the diameters of the attachment bolt holes in the connecting piece (9) (CONFIG 2) and frame 12a (CONFIG 2).

If all of the hole diameters are 6,024 mm (0.23717 in.) or less, continue from Para D, Step (2), (a).

If one or more of the holes are more than 6,024 mm (0.237 in.) but less than 6,35 mm (0.25 in.), continue from Para D, Step (2), (b).

If one or more holes are 6,35 mm (0.25 in.) or more, replace the connecting piece (9) and/or the frame 12a (Ref. Table - Component Replacement Data).

D. Installation/Replacement


- (1) Install the fitting. This step is only applicable on CONFIG 1 aircraft.
 - (a) Obey the manufacturers instructions and apply layers of corrosion preventative (Material Item No. P07-001) as necessary to the applicable components and inspection areas (Ref. ROM, Chap 12).
 - (b) Obey the manufacturers instructions and apply layers of primer (Material Item No. P07-007) and paint as necessary to the applicable components and inspection areas (Ref. ROM, Chap 12).
 - (c) Obey the manufacturers instructions and apply layers of corrosion preventative (Material Item No. P04-012) on the faying surfaces of FR12a and the fitting (6), nuts (7), washers (5) and bolts (4).
 - (d) Put the fitting (6) in position on FR12a and install the bolts (4), washers (5) and nuts (7).
 - (e) Obey the manufacturers instructions and use the solvent (Item No. P01-008 or approved alternative) to remove unwanted corrosion preventative.
- (2) Install the connecting piece. This step is only applicable on CONFIG 2 aircraft.

NOTE: It is not necessary to install the rivet which was removed with the Fairchild type connecting piece.

- (a) Do the subsequent steps if all of the hole diameters are 6,024 mm (0.23717 in.) or less:
 - (i) Obey the manufacturers instructions and apply layers of corrosion preventative (Material Item No. P07-001) as necessary to the applicable components and inspection areas (Ref. ROM, Chap 12). If necessary apply a layer of the corrosion preventative to the surfaces of the empty rivet hole (Ref. Para B, Step (2), (a)).
 - (ii) Obey the manufacturers instructions and apply layers of primer (Material Item No. P07-007) and paint as necessary to the applicable components and inspection areas (Ref. ROM, Chap 12).

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- (iii) Obey the manufacturers instructions and apply layers of corrosion preventative (Material Item No. P04-012) on the faying surfaces of FR12a and the connecting piece (9), bolts (8), washers (10) and nuts (11).
 - (iv) Put the connecting piece (9) in position on FR12a and install the bolts (8), washers (10) and nuts (11).
 - (v) Obey the manufacturers instructions and use the solvent (Item No. P01-008 or approved alternative) to remove unwanted corrosion preventative.
- (b) Do the subsequent steps if one or more of the holes are more than 6,024 mm (0.237 in.) but less than 6,35 mm (0.25 in.).
- (i) Use a 6,35 mm (0.25 in.) (H7) reamer to increase the diameters of the bolt holes. Make sure there are no sharp edges.
 - (ii) Obey the manufacturers instructions and apply layers of corrosion preventative (Material Item No. P07-001) as necessary to the applicable components and inspection areas and the surfaces of the bolt holes (Ref. ROM, Chap 12). If necessary apply a layer of the corrosion preventative to the surfaces of the empty rivet hole (Ref. Para B, Step (2), (a)).
 - (iii) Obey the manufacturers instructions and apply layers of primer (Material Item No. P07-007) and paint as necessary to the applicable components and inspection areas (Ref. ROM, Chap 12).
 - (iv) Obey the manufacturers instructions and apply layers of corrosion preventative (Material Item No. P04-012) on the faying surfaces of FR12a and the connecting piece (9), bolts (NAS6604-5 and -9), washers (10) and nuts (MS21046-4E).
 - (v) Put the connecting piece (9) in position on FR12a and install the longer bolt (NAS6604-9) in the top hole and the shorter bolt (NAS6604-5) in the lower hole. For each bolt install one washer (10) under the head of the bolt and one washer under the nut.
 - (vi) Obey the manufacturers instructions and use the solvent (Item No. P01-008 or approved alternative) to remove unwanted corrosion preventative.
- (3) Replace the bearing fork if necessary. This step is only applicable on CONFIG 1 aircraft.
- (a) Remove the horizontal stabilizer (Ref. AMM, 55-11-11, Page Block 401).
 - (b) Remove the bearing fork (12).
 - (i) Use a 3,2 mm (0.126 in.) diameter drill to remove the rivets that attach the access panel (1) to the bottom skin of the horizontal stabilizer. (Ref. ROM, Chap 2).
NOTE: Some horizontal stabilizers have two access panels (1).
 - (ii) Remove the nuts (15), washers (14) and the bolts (13) then remove and discard the bearing fork (12).
 - (iii) Obey the manufacturers instructions and apply layers of corrosion preventative (Material Item No. P07-001) as necessary in the rivet holes and on all bare metal surfaces.


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- (c) Install the new bearing fork (12).
 - (i) Obey the manufacturers instructions and apply layers of corrosion preventative (Material Item No. P07-007) on the faying surfaces of the bearing fork (12) and the adjacent structure. Also do this on the applicable surfaces of the nuts (15), washers (14) and the bolts (13).
 - (ii) Put the bearing fork (12) in position and install the, bolts (13), washers (14) and the nuts (15).
 - (iii) Obey the manufacturers instructions and use the solvent (Item No. P01-008 or approved alternative) to remove unwanted corrosion preventative.
- (d) Replace the bearing supports (2) and (3) if necessary (Ref. ROM, Chap 2). This step is only applicable on the horizontal stabilizers of CONFIG 2 aircraft
- (e) Obey the manufacturers instructions and apply layers of corrosion preventative (Material Item No. P07-001) as necessary) on the faying surfaces of the access panel (1) and adjacent skin.
- (f) Put the access panel (1) in position and install rivets (CR3223-4-2) (Ref. ROM, Chap 2).
- (g) Install the horizontal stabilizer (Ref. AMM, 55-11-11, Page Block 401).

E. Close up

- (1) Remove all tools and materials. Make sure the work areas are clean.
- (2) Install the horizontal stabilizer actuator (Ref. AMM, 27-45-11 (CONFIG 1), Page Block 401) This step is only applicable for CONFIG 1 aircraft.
- (3) Install the horizontal stabilizer actuator (Ref. AMM, 27-45-11 (CONFIG 2), Page Block 401). This step is only applicable on CONFIG 2 aircraft.
- (4) Install access panel FL2.

F. Documentation

Make an entry in the Aircraft Logbook that this Service Bulletin is incorporated.

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4. Accomplishment Instructions - Spares

A. Inspection - Horizontal Stabilizer (Ref. Fig. 1)

It is not necessary to do this procedure if the horizontal stabilizer held as spare has zero flying hours

- (1) Do the dye-penetrant flaw detection (PFD) tests
 - (a) Obey the manufacturers instructions and use the solvent (Item No. P01-008, or approved alternative), abrasive (Scotch-Brite, or approved alternative) and/or none metal scrapers to remove the layers of paint and protection from all surfaces of the bearing fork (12) or bearing supports (2) and (3).
 - (b) Obey the manufacturers instructions and use dye flaw detection procedures (fluorescent or color contrast) to do a PFD test for cracks in the bearing fork (12) or bearing supports (2) and (3). No crack damage is permitted. Replace defective components (Ref. Table - Component Replacement Data)
- (2) Obey the manufacturers instructions and apply layers of corrosion preventative (Material Item No. P07-001) as necessary to the surfaces of the applicable component (Ref. ROM, Chap 12)
- (3) Obey the manufacturers instructions and apply layers of primer (Material Item No. P07-007) and paint as necessary to the surfaces of the applicable component (Ref. ROM, Chap 12).

B. Replacement

- (1) Replace the bearing fork if cracks are found. This step is only applicable on the horizontal stabilizers of CONFIG 1 aircraft.
 - (a) Remove the horizontal stabilizer (Ref. AMM, 55-11-11, Page Block 401).
 - (b) Remove the bearing fork (12).
 - (i) Use a 3,2 mm (0.126 in.) diameter drill to remove the rivets that attach the access panel (16) to the bottom skin of the horizontal stabilizer. (Ref. ROM, Chap 2).

NOTE: Some horizontal stabilizers have two access panels (1).
 - (ii) Remove the nuts (15), washers (14) and the bolts (13) then remove and discard the bearing fork (12).
 - (iii) Obey the manufacturers instructions and apply layers of corrosion preventative (Material Item No. P07-001) as necessary in the rivet holes and on all bare metal surfaces.
 - (c) Install the new bearing fork (12).
 - (i) Obey the manufacturers instructions and apply layers of corrosion preventative (Material Item No. P07-007) on the faying surfaces of the bearing fork (12) and the adjacent structure. Also do this on the applicable surfaces of the nuts (15), washers (14) and the bolts (13).
 - (ii) Put the bearing fork (12) in position and install the bolts (13), washers (14) and nuts (17).

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- (iii) Obey the manufacturers instructions and use the solvent (Item No. P01-008 or approved alternative) to remove unwanted corrosion preventative.
 - (d) Obey the manufacturers instructions and apply layers of corrosion preventative (Material Item No. P07-001) as necessary) on the faying surfaces of the access panel (1) and adjacent skin.
 - (e) Put the access panel (1) in position and install rivets (CR3223-4-2) (Ref. ROM, Chap 2).
- (2) Replace the bearing supports (2) and (3) (Ref. ROM, Chap 2). This step is only applicable on the horizontal stabilizers of CONFIG 2 aircraft. You must replace the two bearing supports if only one was found defective.

C. Inspection - Fairchild Type Connecting Pieces

- (1) Discard all Fairchild type connecting pieces (9) held as spare.

D. Inspection - Fittings 116.40.06.033

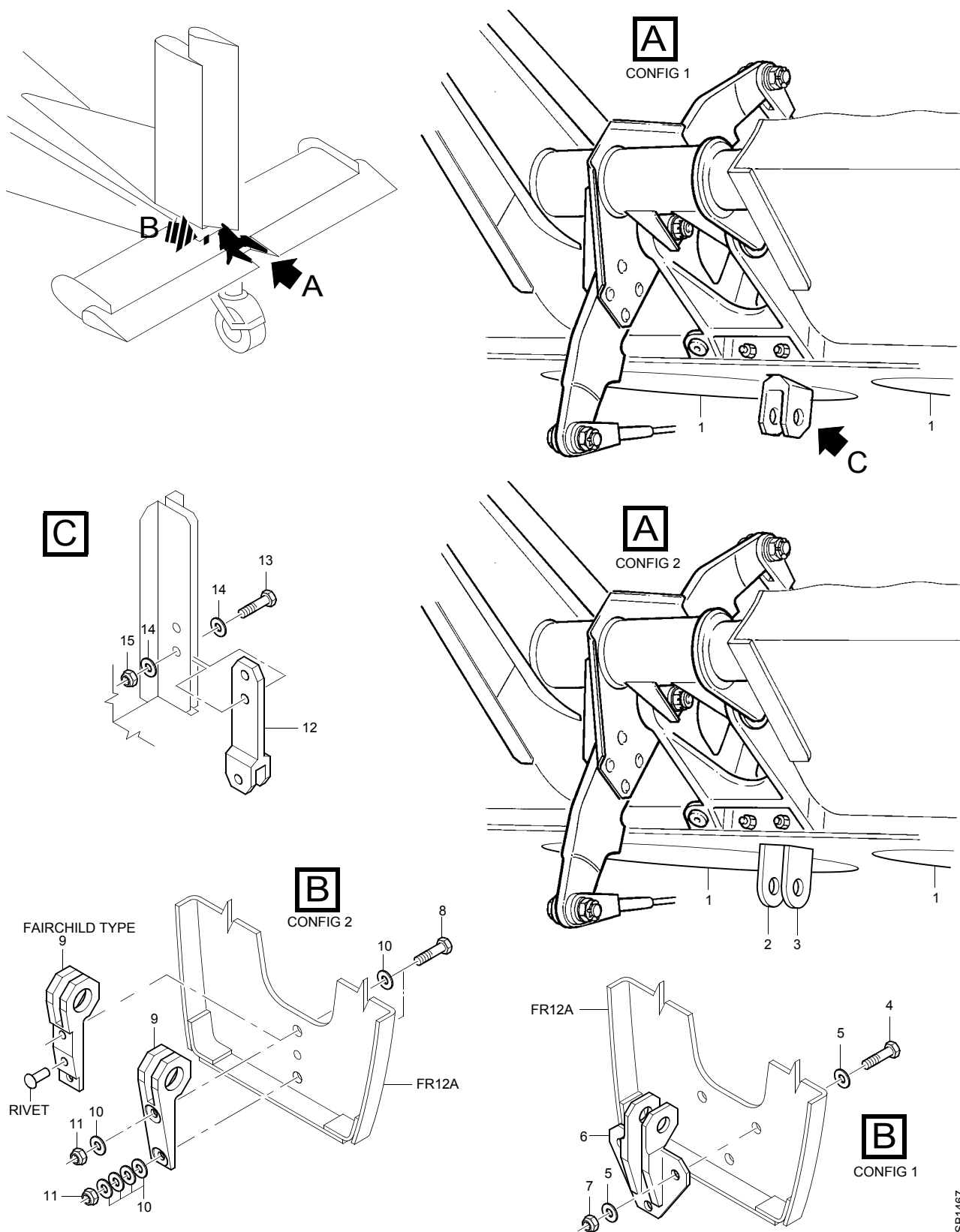
- (1) Discard all fittings (6) P/N116.40.06.033, without an index after the part number.

NOTE: These fittings can be identified by their lugs having a uniform thickness (Ref. Fig. 2).

E. Documentation

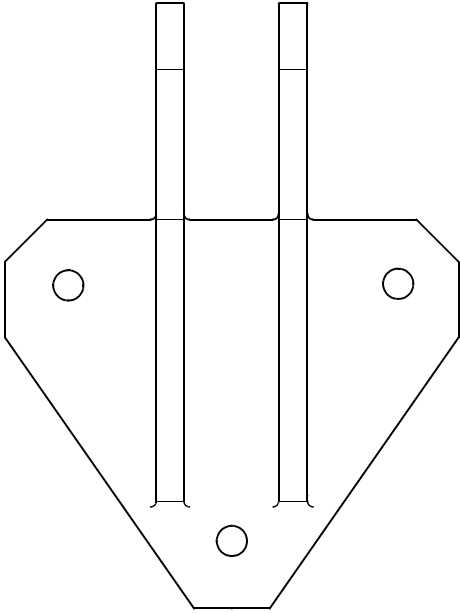
- (1) Make an entry in the spare parts inventory list that this Service Bulletin is incorporated.

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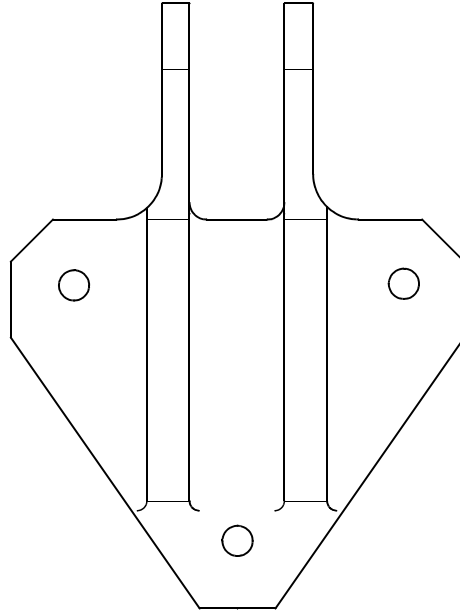


Stabilizer-trim Attachment Components - Inspection and Replacement
Figure 1

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WITHOUT INDEX AFTER
PART NUMBER



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Difference Between Fittings 116.40.06.033
Figure 2