

SERVICE BULLETIN

SERVICE BULLETIN NO: 57-005

REF NO: 195

MODIFICATION NO:

ATA CHAPTER: 57

WING WING STRUT FITTING - INSPECTION FOR CRACKS

1. Planning Information

A. Effectivity

All PC-6 Series aircraft MSN 101 thru MSN 999 and MSN 2001 thru MSN 2092 with:

- Left wing strut-fittings P/N 6102.0041.00, P/N 111.35.06.055, P/N 111.35.06.184 and P/N 111.35.06.185
- Right wing strut-fittings P/N 6102.0041.00, P/N 111.35.06.056, P/N 111.35.06.184 and P/N 111.35.06.186.

B. Concurrent Requirements

None.

This Service Bulletin supersedes Service Bulletins 93, 57-003 (Ref. 189) and 57-004 (Ref. 194).

C. Reason

(1) Problem

Corrosion, wear and cracks have been reported in the wing strut fittings installed on the wing of some PC-6 aircraft.

(2) Cause

It is possible that the spherical bearing may be loose in the fitting or may not rotate because of corrosion. If this occurs, the joint may not function as designed.

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(3) Solution

(a) Before the next flight, unless already accomplished at initial issue of the Service Bulletin:

- Do a visual inspection of the wing strut fittings installed on the wing for cracks. No cracks are permitted. Replace wing strut fittings that are cracked before the next flight.
- Examine the spherical bearing for looseness in the fitting, freedom of movement, correct orientation and corrosion. Replace the spherical bearing if necessary.
- If the bearing must be removed (for what ever reason), do a visual inspection of the bearing hole in the fitting for wear. No wear is permitted. Replace wing strut fittings that are worn before the next flight.

NOTE 1: If Service Bulletin 57-004 was accomplished or a new wing strut fitting was installed within the limits stated in Para. 1.C.(3)(c), Para. 1.C.(3)(a) is not necessary.

NOTE 2: A one time ferry flight to a maintenance facility is permitted after a visual inspection of the wing strut fitting-lug.

This flight must be performed at minimum fuselage weight, in low gust conditions without extreme manoeuvring and is not to exceed 120 Kts.

For the inspection before the ferry flight, the wing strut can be left installed. No cracks are permitted. Replace wing strut fittings that are cracked before the next flight.

(b) Within 25 flight hours or 25 flight cycles or 1 calendar month, whichever comes first, unless already accomplished at initial issue of the Service Bulletin:

- Do a visual inspection of the wing strut fittings installed on the wing for cracks and corrosion. No cracks are permitted. Replace wing strut fittings that are cracked before the next flight.
- Do a non destructive inspection (Eddy current) of the wing strut fittings installed on the wing for cracks. No cracks are permitted. Replace wing strut fittings that are cracked before the next flight.
- Examine the spherical bearing for looseness in the fitting, freedom of movement, correct orientation and corrosion. Replace the spherical bearing if necessary.
- If the bearing must be removed (for what ever reason), do a visual inspection of the bearing hole in the fitting for wear. No wear is permitted. Replace wing strut fittings that are worn before the next flight.

NOTE: If Service Bulletin 57-004 was accomplished or a new wing strut fitting was installed within the limits stated in Para. 1.C.(3)(c), Para. 1.C.(3)(b) is not necessary.

NOTE: If you cannot do Para. 1.C.(3)(a) and/or (b), replacement of the wing strut fittings installed on the wings satisfies part of the requirement of this Service Bulletin. The inspection limit as stated in Para. 1.C.(3)(c) must still be done.

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(c) Do one of the repeat inspections detailed in Para. 1.C.(3)(c)1 or Para. 1.C.(3)(c)2 which ever comes first.

1 Every 1100 flight hours or every 12 calendar months, whichever comes first:

- Do a visual inspection of the wing strut fittings installed on the wing for cracks and corrosion. No cracks are permitted. Replace wing strut fittings that are cracked before the next flight.
- Do a non destructive inspection (Eddy current) of the wing strut fittings installed on the wing for cracks. No cracks are permitted. Replace wing strut fittings that are cracked before the next flight.
- Examine the spherical bearing for looseness in the fitting, freedom of movement, correct orientation and corrosion. Replace the spherical bearing if necessary.
- If the bearing must be removed (for what ever reason), do a visual inspection of the bearing hole in the fitting for wear. No wear is permitted. Replace wing strut fittings that are worn before the next flight.

NOTE 1: If Service Bulletin 57-004 was accomplished or a new wing strut fitting was installed, the timings for this repeat inspection begin from the completion of the Service Bulletin 57-004 or when the wing strut fitting was installed.

NOTE 2: If this inspection criteria is accomplished, the timings for all repeat inspections (Ref. Step 1.C.(3)(c)1 or 2) begin from the completion of this inspection.

2 Within the following calendar time:

| Corrosion Severity Zone (Ref. AMM, 20-40-00, Page Block 1) | Inspection Interval |
|---|---------------------|
| Moderate | 6 calendar months |
| Severe | 3 calendar months |

- Do a visual inspection of the wing strut fittings installed on the wing for cracks and corrosion. No cracks are permitted. Replace wing strut fittings that are cracked before the next flight.
- Examine the spherical bearing for looseness in the fitting, freedom of movement, correct orientation and corrosion. Replace the spherical bearing if necessary.
- If the bearing must be removed (for what ever reason), you must do Para. 1.C.(3)(c)1.

NOTE 1: If Service Bulletin 57-004 was accomplished or a new wing strut fitting was installed, the timings for this repeat inspection begin from the completion of the Service Bulletin 57-004 or when the wing strut fitting was installed.

NOTE 2: If this inspection criteria is accomplished, you are still required to do the inspection detailed at Para. 1.C.(3)(c)1 at the defined inspection interval.

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D. Description

This Service Bulletin gives the data and instructions necessary to:

- Do a visual inspection of the left and right wing strut fittings installed on the wing for corrosion, wear and cracks.
- Do a non destructive inspection (Eddy current) on the left and right wing strut fittings installed on the wing for cracks.
- Examine the spherical bearings for correct installation and operation.
- Replace the defective spherical bearing, if necessary.
- Replace the defective wing strut fittings, if necessary.

The accomplishment instructions in this Service Bulletin are divided into two parts:

- Section 3. (Accomplishment Instructions - Aircraft - Part 1) gives the procedures necessary to examine the left and right wing strut fittings for cracks and to examine the spherical bearings for correct installation and operation. This includes the procedure to remove and install the spherical bearings.
- Section 4. (Accomplishment Instructions - Aircraft - Part 2) gives the procedures necessary to make access openings in the wing and to replace defective wing strut fittings.

It is possible that some aircraft have access panels installed in the wings as local modifications without the authority of PILATUS. Operators must check with their local Airworthiness Authorities if such modifications affect the embodiment of this Service Bulletin.

Revision No. 1 of this Service Bulletin is issued to increase the time scales of the repetitive inspections from 100 flying hours to 300 flying hours and from 150 flight cycles to 450 flight cycles. It also adds parts to the Additional Parts to be Procured for the different oversize variations, updates the Operator Supplied Materials and Special Tools, changes the corrective procedure for the bearings, adds a procedure to examine the old bearing, corrects the view of the fitting in Figure 1, changes the procedure to "Make the new holes in the new fitting" and the related figure, changes the corrosion preventative procedure after installation of the new fitting and adds the P/N of the panel which can be procured if an Operator does not want to make the cover for the aft access opening.

Revision No. 2 of this Service Bulletin is issued to increase the time scales of the repetitive inspections from 300 flying hours to 1100 flight hours or every 12 calendar months, whichever comes first, to delete the requirement based on flight cycles, to delete the requirement for the "Mild Corrosion Severity Zone" (full inspection, including NDI, to be done at least every 12 calendar months now) and to amend Figure 1 to show special areas to be inspected. The increase is based on fatigue test results. It also adds Material No. P08-052 as a suitable alternative for Material No. P08-059.

E. Compliance

Mandatory.

- (1) The visual inspection is required before the next flight of the aircraft. No cracks are permitted. You must Replace wing strut fittings that are cracked before next flight.
- (2) The non destructive test (Eddy current) inspection is required within the limits stated in Para. 1.C.(3)(b). No cracks are permitted. You must Replace wing strut fittings that are cracked before next flight.

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(3) These repeat inspections are necessary within the limits stated in Para. 1.C.(3)(c):

- Do a visual inspection of the wing strut fittings installed on the wing for corrosion, wear and cracks.
- Do a non destructive inspection (Eddy current) on the left and right wing strut fittings installed on the wing for cracks.
- Examine the spherical bearings for correct installation and operation.
- Replace the defective spherical bearing, if necessary.
- Replace the defective wing strut fittings, if necessary.

No cracks are permitted. You must replace wing strut fittings that are cracked before next flight.

F. Approval

The technical content of this Service Bulletin is approved under the authority of DOA No. EASA. 21J. 357.

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.

G. Manpower

| | Inspection | Replacement of One Bearing | Replacement of One Fitting |
|------------------------|-------------|-------------------------------|-------------------------------|
| Preparation | 1.50 | - | - |
| Inspection | 4.00 | - | - |
| Replacement | - | 1.00 | 15.00 |
| Close up | 1.50 | - | - |
| TOTAL MAN-HOURS | 7.00 | 1.00 | 15.00 |

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.

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K. References

Aircraft Maintenance Manual (AMM). 06-40-00 and 57-00-01.

L. Publications Affected

Not applicable.

M. Interchangeability of Parts

Not applicable.

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2. Material Information

A. Material Necessary for Each Aircraft

(1) Material to be Purchased

No modification kit is necessary for this Service Bulletin.

Operators should send orders for the Service Bulletin parts to:

PILATUS AIRCRAFT LTD,
CUSTOMER LIAISON MANAGER,
CH 6371 STANS, Tel: +41 41 619 65 80
SWITZERLAND Fax: +41 41 619 65 76
E-mail: fodermatt@pilatus-aircraft.com

(2) Additional Material to be Procured

(a) The parts below are necessary for the replacement of one wing strut fitting (left or right). Operators must order the parts from PILATUS as necessary.

| NEW PART NO. | DESCRIPTION | OLD PART NO. | QTY | DISP. CODE | FIG | ITEM |
|---------------|-----------------------------------|---|-----|------------|--------|--------|
| 111.35.06.057 | BOLT (8.2 mm Dia 1st Oversize) | 932.53.47.286 | 5 | D | 3 | 1 |
| 111.35.06.191 | BOLT (8.4 mm Dia 2nd Oversize) | 932.53.46.436 | | | | |
| 111.35.06.192 | BOLT (8.6 mm Dia 3rd Oversize) | 111.35.06.191 | | | | |
| 111.35.06.185 | LEFT WING STRUT FITTING | 6102.0041.00 111.35.06.055 111.35.06.184 111.35.06.185 | 1 | R | 1 3 | 1 4 |
| 111.35.06.186 | RIGHT WING STRUT FITTING | 6102.0041.00 111.35.06.056 111.35.06.184 111.35.06.186 | 1 | R | N/A | N/A |
| 938.07.31.108 | NUT | 938.07.34.104 938.07.65.105 | 5 | D | 3 | 3 |
| 938.78.11.206 | WASHER | 938.71.51.108 938.78.11.106 938.78.11.206 | 5 | D | 3 | 2 |
| 939.19.86.102 | BLIND RIVET | N/A | 50 | N | 2 | N/A |

DISPOSITION CODES: D - DISCARD / N - NEW / R - RETURN TO PILATUS

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- (b) The parts below are necessary for the replacement of one bearing in the wing strut fitting (left or right). Operators must order the parts from PILATUS as necessary.

| NEW PART NO. | DESCRIPTION | OLD PART NO. | QTY | DISP. CODE | FIG | ITEM |
|---------------|-------------|--------------------------------|-----|------------|-----|------|
| 944.61.00.109 | BEARING | 944.61.00.109 944.61.00.009 | A/R | R | 1 | |

DISPOSITION CODES: D - DISCARD / N - NEW / R - RETURN TO PILATUS

(3) Operator Supplied Materials (Ref. AMM 20-31-00)

| MATERIAL NO. | DESCRIPTION | QTY | REMARKS |
|---|-----------------------------|----------|---|
| P01-010 | SOLVENT | A/R | OR APPROVED ALTERNATIVE |
| P02-003 | CLOTH | A/R | |
| P02-016 | SCOTCH-BRITE | A/R | |
| CAUTION: DO NOT MIX DIFFERENT TYPES OF GREASE. IF THE ORIGINAL GREASE IS TO BE REPLACED WITH A NEW TYPE OF GREASE, MAKE SURE THE BEARINGS ARE COMPLETELY CLEAN BEFORE PACKING WITH THE NEW GREASE. | | | |
| P04-028 | GREASE | A/R | P04-001, P04-004 and P04-031 are suitable alternatives for P04-028 for this application. |
| P04-012 | CORROSION PREVENTATIVE | A/R | |
| P07-001 | ALODINE 1200S | A/R | |
| P07-007 | PRIMER PAINT | A/R | |
| P08-057 | SEALANT | A/R | |
| P08-059 | ADHESIVE | A/R | P08-052 or P08-060 are suitable alternatives for P08-059 for this application. |
| P10-013 | CORROSION PREVENTATIVE | A/R | |
| - | AL SHEET (AA2024-T3 1,0 mm) | A/R 1 | Pilatus P/N 916.16.35.110 or P/N 6102.0125.02 is a suitable alternative for the aft cover |

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(4) Special Tools

| PART NUMBER | DESCRIPTION | QTY | REMARKS |
|-------------|-----------------|-----|------------------|
| | DRILL - 8,0 mm | A/R | For 1st Oversize |
| | REAMER - 8,1 mm | A/R | |
| | REAMER - 8,2 mm | A/R | |
| | DRILL - 8,2 mm | A/R | For 2nd Oversize |
| | REAMER - 8,3 mm | A/R | |
| | REAMER - 8,4 mm | A/R | |
| | DRILL - 8,4 mm | A/R | For 3rd Oversize |
| | REAMER - 8,5 mm | A/R | |
| | REAMER - 8,6 mm | A/R | |

NOTE: These tools are only necessary if you replace one of the wing strut fittings (left or right). Contact Pilatus for any further information.

(5) Operator Supplied Tools

| Part No. | Description | Remarks |
|----------|-------------------------------------|--|
| - | Eddy Current NDT Equipment | NORTEC 2000 Eddy Current Instrument or equivalent |
| - | Shielded Probe and Lead Combination | 3 mm Diameter, 500 KHz, 90-degree |
| - | Calibration Standard | 7075 Aluminum, 2124 Aluminum or 2024 Aluminum with an EDM slot 0.5 mm deep |

B. Material Necessary for Each Spare

Not applicable.

C. Reidentified Parts

Not applicable.

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3. Accomplishment Instructions - Aircraft - Part 1

WARNING: BE CAREFUL WHEN YOU USE THE CONSUMABLE MATERIALS. OBEY THE MANUFACTURERS HEALTH AND SAFETY INSTRUCTIONS.

A. Inspection (Ref. Fig. 1)

(1) Before the next flight:

- (a) Remove the left and right wing struts (Ref. AMM. 57-00-01, Page Block 401).
- (b) Remove loose paint if necessary, then, use a cloth (Material No. P02-003) and the solvent (Material No. P01-010) to clean the left and right wing strut fittings (1).
- (c) Visually examine the left and right wing strut fittings (1) for signs of cracks. Do this with a X10 magnifier and a source of bright light. No cracks are permitted. If you find a crack, you must replace the fitting (Ref. Para. 4.) before next flight.
- (d) Examine the bearing (2).

Make sure:

- The bearing ball is free to rotate by hand. If necessary, you can use the attachment bolt as a lever.
- The bearing ball and housing are not corroded. Remove superficial corrosion with the cloth (Material No. P02-003) and the solvent (Material No. P01-010). No remaining corrosion is permitted.
- The bearing housing is not loose in the wing strut fitting (1)
- The bearing housing is aligned (as shown in Detail B)
- The bearing ball and housing are not worn. No measurable gap is permitted.

If necessary:

- Remove the bearing (Ref. Para. 3.B.)
- Examine the bearing and replace if necessary (Ref. Para. 3.B.)
- Install the bearing (Ref. Para. 3.C.).

(e) Lubricate the bearing (2).

1 Remove the bearing ball:

- a Rotate the bearing ball out of the bearing housing by 90 degrees.
- b Turn it until it aligns with the cut-outs in the bearing housing.
- c Remove the bearing ball.

2 Use a cloth (Material No. P02-003) and the solvent (Material No. P01-010) to clean the bearing and the bearing housing.

3 Apply a layer of the grease (Material No. P04-028) to the mating surfaces of the bearing and the bearing housing.

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- 4 Install the bearing ball:
- a Align the bearing ball with the cut-outs in the bearing housing.
 - b Install the bearing ball.
 - c Turn the bearing by 90 degrees until it is flush in the bearing housing.
- (2) For the inspection within the limits stated in Para. 1.C.(3)(b) or for the repeat inspections within the limits stated in Para. 1.C.(3)(c):
- (a) Remove the left and right wing struts (Ref. AMM. 57-00-01, Page Block 401).
 - (b) Remove loose paint if necessary, then, use a cloth (Material No. P02-003) and the solvent (Material No. P01-010) to clean the left and right wing strut fittings (1).
 - (c) Visually examine the left and right fittings (1) for signs of corrosion. Do this with a X10 magnifier and a source of bright light.

NOTE: You can also use the straight edge of a ruler which will indicate distortion caused by corrosion.

Minor surface corrosion is permitted (Ref. ROM. Chap. 2 and 4). All other corrosion is not permitted and you must replace the defective fitting (Ref. Para 4.).

- (d) Remove minor surface corrosion (Ref. ROM. Chap. 2 and 4) from the given fittings (1). This step is only applicable if you have found permitted corrosion (Ref. Step (2)(c)).
- (e) Visually examine the left and right wing strut fittings (1) for signs of cracks. Do this with a X10 magnifier and a source of bright light. No cracks are permitted. If you find a crack, you must replace the fitting (Ref. Para. 4.) before next flight.
- (f) Examine the bearing (2).

Make sure:

- The bearing ball is free to rotate by hand. If necessary, you can use the attachment bolt as a lever.
- The bearing ball and housing are not corroded. Remove superficial corrosion with the cloth (Material No. P02-003) and the solvent (Material No. P01-010). No remaining corrosion is permitted.
- The bearing housing is not loose in the wing strut fitting (1)
- The bearing housing is aligned (as shown in Detail B)
- The bearing ball and housing are not worn. No measurable gap is permitted.

If necessary:

- Remove the bearing (Ref. Para. 3.B.)
- Examine the bearing and replace if necessary (Ref. Para. 3.B.)
- Install the bearing (Ref. Para. 3.C.).

NOTE: If you must replace the bearing, do not install the new bearing until you have done the Eddy current inspection (Ref. Para. 3.A.(2)(g)).

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(g) Do the non destructive inspection (Eddy current).

CAUTION: ONLY PERSONNEL THAT ARE TRAINED AND APPROVED (BY THE LOCAL AIRWORTHINESS AUTHORITIES) CAN DO THIS PROCEDURE.

NOTE: This procedure is only necessary if you must do the inspections as detailed Para. 1.C.(3)(b) or Para. 1.C.(3)(c)1.

1 Calibrate the Eddy Current Instrument as follows:

- Frequency 300 - 500 KHz
- Probe selection Absolute
- Refer to the manufacturer's handbook and calibrate the instrument for an 80% upscale deflection from the 0.5 mm EDM slot of the calibration standard.

2 Inspection of the fittings

NOTE 1: Use a non-metallic object to guide the probe as close as possible to all the edges.

NOTE 2: Specially inspect the areas shown on Figure 1, Detail B.

a Do the procedure as given in the manufacturer's handbook.

b Put the probe on the lower face of the left fitting.

c Move the probe across the lower face. Make sure you get as close as possible to the outer edges of the fitting and as close as possible to the edges of the bearing (Ref. Detail B).

d Put the probe on the upper face of the left fitting.

e Move the probe across the upper face. Make sure you get as close as possible to the outer edges of the fitting and as close as possible to the edges of the bearing (Ref. Detail B).

f Put the probe on the face of the edge of the left fitting.

g Move the probe across the face of the edge. Make sure you get as close as possible to the outer edges (Ref. Detail B).

h If the bearing is removed:

- Put the probe on the inner face of the bearing hole of the left fitting
- Move the probe across the face and around the hole. Make sure you get as close as possible to the outer edges of the hole.

i Do Para. 3.A.(2)(g)2 b thru h again for the right fitting.

j Record the results of the inspection (Ref. Table 1) and send the results to Pilatus. No cracks are permitted. If you find a crack, you must replace the fitting (Ref. Para. 4.) before next flight.

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- (h) Apply layers of Alodine 1200S (Material No. P07-001), the primer (Material No. P07-007) and the applicable paint on all bare metal surfaces except the bearing housing interfaces.
- (i) Lubricate the bearing (2).
 - 1 Remove the bearing ball:
 - a Rotate the bearing ball out of the bearing housing by 90 degrees.
 - b Turn it until it aligns with the cut-outs in the bearing housing.
 - c Remove the bearing ball.
 - 2 Use a cloth (Material No. P02-003) and the solvent (Material No. P01-010) to clean the bearing and the bearing housing.
 - 3 Apply a layer of the grease (Material No. P04-028) to the mating surfaces of the bearing and the bearing housing.
 - 4 Install the bearing ball:
 - a Align the bearing ball with the cut-outs in the bearing housing.
 - b Install the bearing ball.
 - c Turn the bearing by 90 degrees until it is flush in the bearing housing.

B. Removal of the Bearing (Ref. Fig. 1)

NOTE: This procedure is applicable if loose, damaged, corroded, incorrectly aligned or worn bearings are found.

CAUTION: DO NOT USE TOO MUCH HEAT TO REMOVE THE BEARING. DO NOT EXCEED 120°C (224°F) FOR MORE THAN 15 MINUTES.

- (1) Use a hot air blower (for heat shrink sleeves) and apply heat to loosen the adhesive between the bearing and the fitting.

CAUTION: DO NOT USE TOO MUCH FORCE TO REMOVE THE BEARING. YOU CAN DAMAGE THE WING STRUT FITTING IF YOU USE TOO MUCH FORCE.

- (2) Use a press or applicable diameter drift to remove the bearing (2) from the bore in the fitting. Send the bearing (2) to Pilatus. If you cannot remove the bearing (2), replace the fitting (Ref. Para. 4.).

NOTE: The bearing (2) is removed from the top (wing side) of the wing strut fitting (1).

- (3) Use the solvent (Material No. P01-010) to remove the unwanted adhesive from the hole in the fitting.
- (4) Use the Scotch-Brite (Material No. P02-016) to polish the hole in the fitting.
- (5) Use the cloth (Material No. P02-003) made moist with the solvent (Material No. P01-010) and clean the hole in the fitting.
- (6) Do a visual inspection of the bearing hole in the fitting for wear. No wear is permitted. Replace wing strut fittings that are worn before the next flight.

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- (7) Apply a layer of alodine (Material No. P07-001) to the surface of the hole and facing. Install the replacement bearing (2) in the alodined hole in less than 72 hours.
- (8) Examine the bearing (2). Make sure:
 - The bearing ball is free to rotate by hand. If necessary, you can use the attachment bolt as a lever.
 - The bearing ball and housing are not corroded. Remove superficial corrosion with the cloth (Material No. P02-003) and the solvent (Material No. P01-010). No remaining corrosion is permitted.
 - The bearing ball and housing are not worn. No measurable gap is permitted.
- (9) If necessary, discard the old bearing and use a new bearing.

C. Installation of the Bearing (Ref. Fig. 1)

- (1) Use the cloth (Material No. P02-003) made moist with the solvent (Material No. P01-010) and clean the bonding face of the bearing (2).
- (2) Use the Scotch-Brite (Material No. P02-016) to polish the bonding face of the bearing (2).
- (3) Use the cloth (Material No. P02-003) made moist with the solvent (Material No. P01-010) and clean the bonding face of the bearing (2).
- (4) Put the bearing (2) in position in the hole. Make sure it can be installed easily. Remove the bearing (2).
- (5) Mix the two parts of the adhesive (Material No. P08-059).
- (6) Apply a layer of the adhesive (Material No. P08-059) to the applicable surfaces of the bearing (2) and the hole. Make sure there is sufficient adhesive to give a full bond when the parts are assembled.
- (7) Put the bearing (2) in position in the hole. Make sure the bearing (2) is correctly aligned (Ref. Detail B) and push the bearing (2) firmly into the hole to make sure it is tightly against the flange face.
- (8) Remove the unwanted adhesive (Material No. P08-059).

CAUTION: DO NOT USE TOO MUCH HEAT. DO NOT EXCEED 120°C (224°F) FOR MORE THAN 15 MINUTES.

- (9) Let the adhesive (Material No. P08-059) cure for 5 to 7 days at room temperature or 2 hours at $65 \pm 5^{\circ}\text{C}$ ($136 \pm 8^{\circ}\text{F}$).

D. Close up

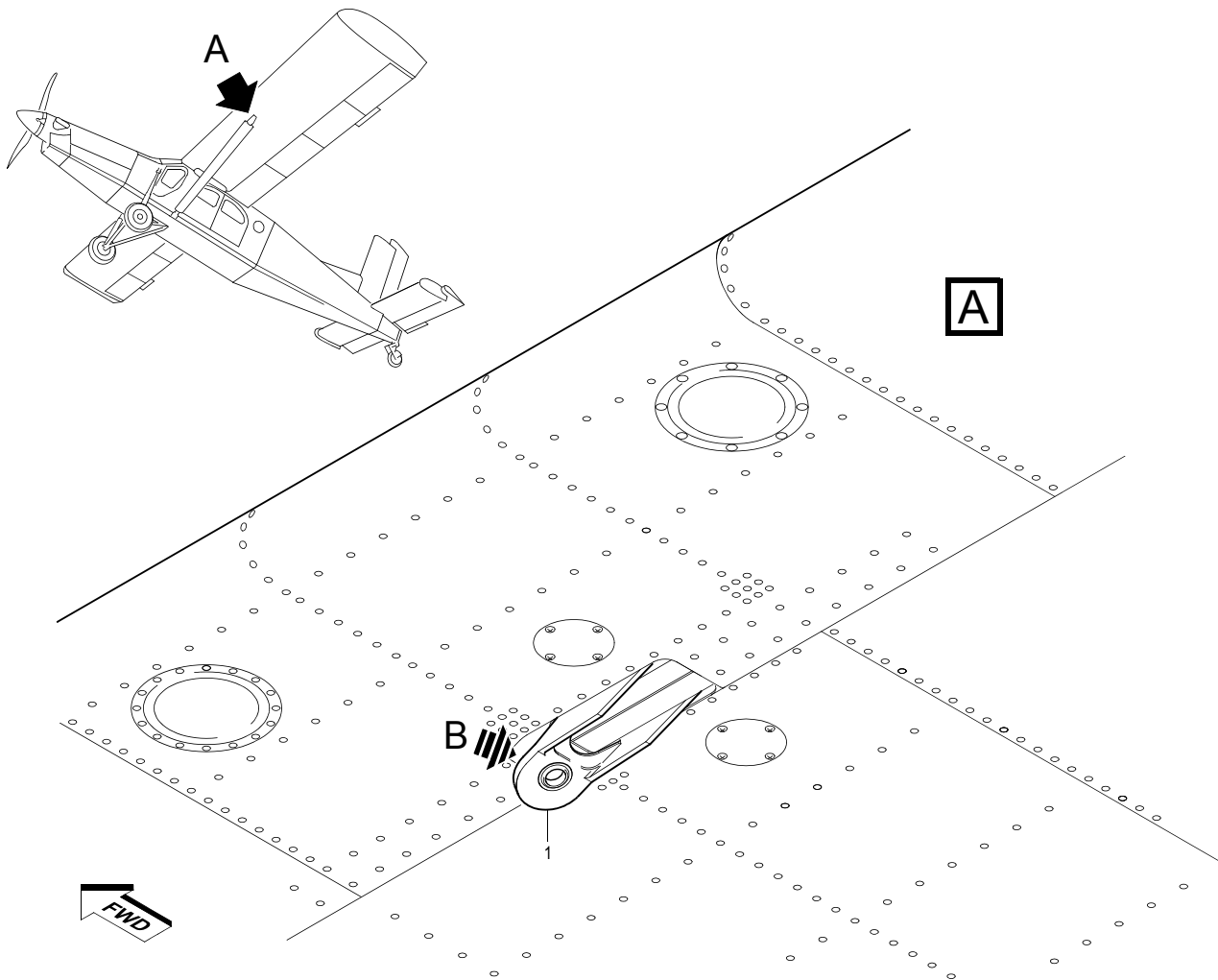
- (1) Remove all tools and materials. Make sure that the work areas are clean.
- (2) Install the wing struts (Ref. AMM. 57-00-01, Page Block 401).

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E. Documentation

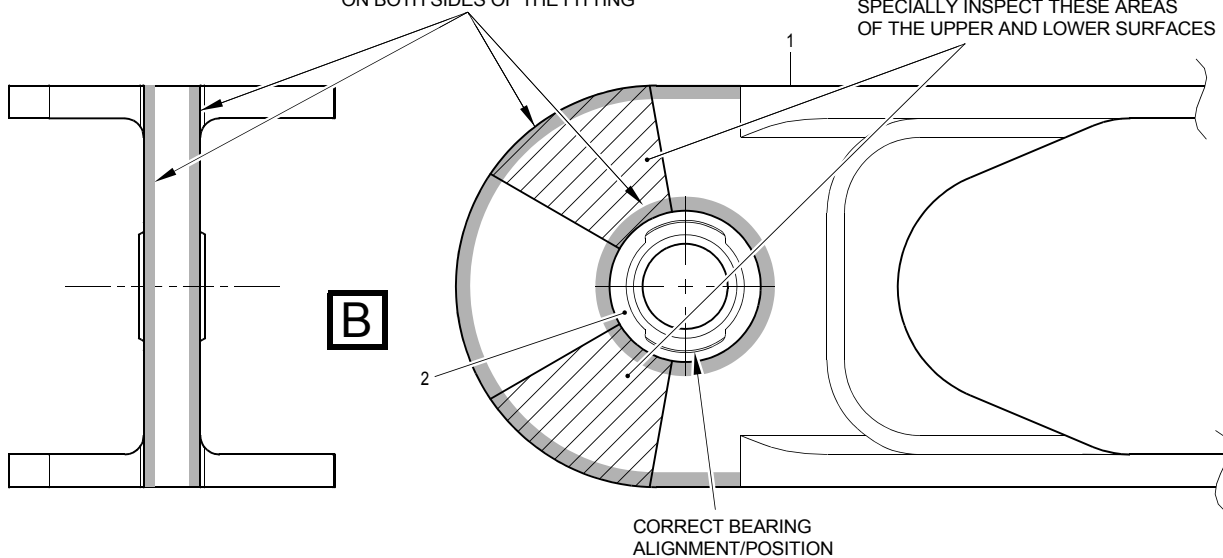
- (1) Make an entry in the Aircraft Logbook that Part 1 of this Service Bulletin has been incorporated.
- (2) Use the Table 1 (at the end of this Service Bulletin) to report your results and the serial number of the aircraft to PILATUS.
- (3) Return replaced bearings to Pilatus.

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MOVE PROBE AS CLOSE AS POSSIBLE TO THE
 OUTER AND INNER EDGES AS INDICATED
 ON BOTH SIDES OF THE FITTING

SPECIALLY INSPECT THESE AREAS
 OF THE UPPER AND LOWER SURFACES



Wing Strut Fittings - Inspection
 Figure 1


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4. Accomplishment Instructions - Aircraft - Part 2

WARNING: OBEY THE MANUFACTURERS HEALTH AND SAFETY INSTRUCTIONS WHEN YOU USE THE CONSUMABLE MATERIALS.

CAUTION: OBEY THE MANUFACTURERS INSTRUCTIONS WHEN YOU APPLY THE CONSUMABLE MATERIALS.

A. Fittings - Replacement (Ref. Fig. 2 and 3)

This procedure is only applicable if you found cracks (Ref. Para. 3.A.(1)(c), 3.A.(2)(e) or Para. 3.A.(2)(g)⌋ j) or cannot remove the bearing (Ref. Para 3.B.(2)). The procedure is given for replacement of the left fitting but is also applicable for the right fitting.

NOTE: Not all aircraft have the applicable openings for internal access to the fittings.

- (1) Remove the access panels LB10 and/or RB9 (Ref. AMM. 06-40-00, Page Block 1). Keep two of the screws (P/N 935.13.16.018) from the access panel. Discard the unwanted panel and screws.
- (2) Make an access opening in the skin, forward of the fitting (Ref. Fig. 2). This step is only applicable if there is no internal access to the forward flange of the fitting assembly.

NOTE: The new opening is at the same location (and is the same width) as the circular (inspection) opening LB10 (left) or RB9 (right). The forward and aft anchor nuts for the access covers LB10 or RB9 will also be used for the cover of the new opening.

- (a) Make marks to show the contours of the opening on the skin. Do this at the location shown and to the given dimensions (192 x 52 mm (7.6 x 2.0 in.) with 26 mm (1.0 in.) radii at each end).
 - (b) Cut the opening in the skin to the contour marks with the applicable cutting tools. Make sure that there are no sharp edges. Do not remove the forward and aft anchor nuts for the access covers LB10 or RB9.
- (3) If necessary make a new access opening in the skin aft of the fitting.
- (a) Make marks to show an intersection of center lines and the contours of a circular opening 120 mm (4.7 in.) in diameter. Do this on the skin at the location shown.
 - (b) Cut the opening in the skin to the contour marks with the applicable cutting tools. Make sure that there are no sharp edges.
- (4) Remove the defective fitting(s) (Ref. Fig. 3).
- (a) Remove the nuts (3), the washers (2) and the bolts (1). Keep two of the bolts (1), the washers (2) and the nuts (3).
 - (b) Disassemble and remove the fitting (4) from the wing structure. Send the fitting to Pilatus.

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- (5) Make the bolt holes for the new fitting (Ref. Fig. 3).

NOTE: The rear flange of the new fitting contains five 8.0 mm diameter holes (A thru E). These holes are pilot, positioning and alignment holes for the new fitting which align with the holes of the wing spar.

The forward flange of the new fitting contains only one hole (F). This hole serves as an alignment hole. The remaining four holes (G, H J and K) in the forward flange are drilled during installation of the new fitting.

All holes in the new fitting are reamed to the final diameter together with the wing spar holes for the tight fit bolt installation. All bolts must have the same diameter. If the fitting was replaced before, the diameter of the existing holes in the new fitting must be increased to match the wing spar hole diameter first.

- (a) Measure the diameter of one removed bolt (1).
- (b) Determine the drill and reamer sizes necessary (Ref. Table 1) for the diameter measured in Step 4.A.(5)(a).

| Old Bolt Dia | Diameter of Drill Required for New Fitting | Diameter of Reamer Required | P/N of New Bolt Required |
|--------------|--|-----------------------------|---|
| 8.0 mm | 8.0 mm | 8.1 and 8.2 mm | 111.35.06.057 (1st Oversize) |
| 8.2 mm | 8.2 mm | 8.3 and 8.4 mm | 111.35.06.191 (2nd Oversize) |
| 8.4 mm | 8.4 mm | 8.5 and 8.6 mm | 111.35.06.192 (3rd and Maximum Oversize) |

Table 1: Drill and Reamer sizes

- (c) If the measured diameter from Step 4.A.(5)(a) is larger than 8.0 mm, use the drill determined in Step 4.A.(5)(b) to increase the fitting holes (A) thru (E) and (F).
- (d) Put the new fitting (4) in position and temporarily install one of the used bolts (1), one of the used washers (2) and one of the used nuts (3) thru the holes (A) and (F). Tighten the nut (3).
- (e) Install the other used bolt (1) thru the rear flange hole (E) into wing spar hole to align the fitting (4).
- (f) Use the fitting rear flange hole (D) as pilot hole and drill hole (J) in forward fitting flange. Use the drill determined in Step 4.A.(5)(b). Do not damage the wing spar holes.
- (g) Remove the bolt (1), installed in Step 4.A.(5)(e), and install the bolt (1), the other used washer (2) and the other used nut (3) thru the holes (D) and (J). Tighten the nut (3).
- (h) Use the fitting rear flange holes (B), (C) and (E) as pilot holes and drill the holes (G), (H) and (K) in the fitting forward flange. Do not damage the wing spar holes.
- (i) Increase the diameter of the holes (B-G), (C-H) and (E-K) to the next oversize. Use the two reamers determined in Step 4.A.(5)(b).

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- (j) Temporarily install the new oversized bolts (1), the new washers (2) and the new nuts (3) at the holes (B-G) and (E-K), and tighten nuts.
 - (k) Remove the used bolts (1), the used washer (2) and the used nut (3) installed in Step 4.A.(5)(d) and (g).
 - (l) Discard all five used bolts (1), washers (2) and nuts (3).
 - (m) Increase the diameter of the holes (A-F) and (D-J) to the next oversize. Use the two reamers determined in Step 4.A.(5)(b).
 - (n) Remove the new bolts (1), the new washers (2) and the new nuts (3) installed in Step 4.A.(5)(j) and remove the new fitting (4) from the wing spar.
 - (o) If one or more of the holes, reamed in Step 4.A.(5)(i) and (m), in the new fitting (4) and the wing spar are not circular, determine the next oversize diameter reamers (Ref. Table 1) and:
 - 1 Temporarily install the fitting (4). Use the bolts (1), the washers (2) and the nuts (3) used in Step 4.A.(5)(j) to attach the fitting (4) in holes (A-F) and (E-K).
 - 2 Increase the diameter of the holes (B-G), (C-H) and (D-J) to the next oversize. Use the two reamers determined in Step 4.A.(5)(o).
 - 3 Temporarily install the next oversize bolts (1), the washers (2) and the nuts (3) at the holes (B-G) and (D-J), and tighten nuts.
 - 4 Remove the bolts (1), the washers (2) and the nuts (3) installed in Step 4.A.(5)(o)1.
 - 5 Increase the diameter of the holes (A-F) and (E-K) to the next oversize. Use the two reamers determined in Step 4.A.(5)(o).
 - 6 Remove the bolts (1), the washer (2) and the nuts (3) installed in Step 4.A.(5)(o)3 and remove the new fitting (4) from the wing spar.
 - (p) If one or more of the holes, reamed in Step 4.A.(5)(o), in the new fitting (4) and the wing spar are not circular, determine the next oversize diameter reamers (Ref. Table 1) and repeat Step 4.A.(5)(o). If you cannot get the holes circular and the holes are at the maximum of 8.6 mm, contact Pilatus.
 - (q) Deburr the holes (A thru H, J and K) in the new fitting and wing spar.
 - (r) Apply layers of Alodine 1200S (Material No.P07-001). Do this on the bare metal surfaces of the holes in the wing structure and the fitting (4).
- (6) Install the replacement fitting.
- (a) Apply layers of the corrosion preventative (Material No. P04-012) on the faying surfaces of new bolts (1), the washers (2) and the nuts (3).
 - (b) Put the fitting (4) in position in the wing and align the holes.
 - (c) Install the new bolts (1), the washers (2) and the nuts (3). Make sure that the heads of the bolts point forward.
 - (d) Torque the nuts (3) to between 18 and 24 Nm (159.3 and 212.4 lbf in.).

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- (e) Remove the unwanted corrosion preventative (Material No. P04-012) with the solvent (Material No. P01-010).
 - (f) Apply layers of the corrosion preventative (Material No. P10-013) on the bolts (1), the washers (2), the nuts (3) and the fitting (4).
- (7) Make the cover for the forward access opening (Ref. Fig. 2).
- (a) Make marks to show the center line and contours of the cover on the piece of aluminium alloy sheet (P/N 916.16.35.110). Do this to the given dimensions (224 x 84 mm (8.8 x 3.3 in.) with 42 mm (1.7 in.) radii at each end).
 - (b) Cut the aluminium alloy sheet (P/N 916.16.35.110) at the contour marks with the applicable cutting tools to make the cover (1). Make sure that there are no sharp edges.
 - (c) Make marks to show the locations of the rivet and screw holes around the edges of the cover (1). Do this at the pitch dimensions shown.
 - (d) Make the rivet holes at the applicable marks on the cover (1) with a 3,3 mm (0.13 in.) diameter drill. Deburr the holes.
 - (e) Make the screw holes at the applicable marks on the cover (1) with a 4,0 mm (0.16 in.) diameter drill. Deburr the holes.
 - (f) Apply layers of the Alodine 1200S (Material No. P07-001) and the primer (Material No. P07-007). Do this on the bare metal surfaces of the cover (1) and the edges of the opening in the skin.
- (8) Make the rivet holes for the cover for the forward access opening in the skin.
- (a) Put the cover (1) in position on the skin, align the center lines and hold.
 - (b) Make the rivet and screw holes in the skin with a 3,3 mm (0.13 in.) and 4,0 mm (0.16 in.) diameter drill.
 - (c) Remove the cover and deburr the rivet holes.
 - (d) Apply layers of the Alodine 1200S (Material No. P07-001) and the primer (Material No. P07-007). Do this on the bare metal surfaces of the cover (1) and the edges of the opening in the skin.
- (9) Install the cover for the forward access opening.
- (a) Apply layers of the sealant (Material No. P08-057) on the faying surfaces of the cover (1) and the skin.
 - (b) Put the cover (1) in position on the skin and hold with gripper pins.
 - (c) Install the rivets (P/N 939.19.86.102) (Ref. ROM. Chap. 2). Apply a layer of the sealant (Material No. P08-057) on each rivet before you install it.
 - (d) Remove the unwanted sealant (Material No. P08-057) with the solvent (Material No. P01-010).
 - (e) Install the two screws (P/N 935.13.16.018) that you kept at Para. 4.A.(1).

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- (f) Apply layers of the primer (Material No. P07-007) and the applicable paint on the rivet and screw heads and the exterior surface of the cover (1).
- (10) Make the new cover for the aft access opening or use the procured panel (P/N 6102.0125.02).
- NOTE:** The steps that follow are only necessary if you do not use the procured panel (P/N 6102.0125.02).
- (a) Make marks to show an intersection of center lines and the contours of a 155 mm (6.1 in.) diameter circular cover. Do this on a piece of the aluminium alloy sheet (P/N 916.16.35.110).
- (b) Cut the aluminium alloy sheet (P/N 916.16.35.110) at the contour marks with the applicable cutting tools to make the cover (2). Make sure that there are no sharp edges.
- (c) Make marks to show the locations of the 16 rivet holes around the edges of the cover (2). Make sure that the holes are of equal pitch, at a diameter of 135 mm (5.32 in.).
- (d) Make pilot holes in the cover (2). Do this at the marks for the rivet holes with a 2,4 mm (0.1 in.) diameter drill. deburr the holes.
- (11) Make the rivet holes for the cover for the aft access opening.
- (a) Put the cover (2) in position on the skin, align the center lines and hold.
- (b) Make the rivet holes in the cover (2) and the skin. Do this through the pilot holes with a 3,3 mm (0.13 in.) drill.
- (c) Remove the cover (2) and deburr the rivet holes.
- (d) Apply layers of the Alodine 1200S (Material No. P07-001) and the primer (Material No. P07-007). Do this on the bare metal surfaces of the cover (2) and the edges of the opening in the skin.
- (12) Install the cover for the aft access opening cover.
- (a) Apply layers of the sealant (Material No. P08-057) on the faying surfaces of the cover (2) and the skin.
- (b) Put the cover (2) in position the skin and hold with gripper pins.
- (c) Install the rivets (P/N 939.19.86.102) (Ref. ROM. Chap. 2). Apply a layer of the sealant (Material No. P08-057) on each rivet before you install it.
- (d) Remove the unwanted sealant (Material No. P08-057) with the solvent (Material No. P01-010).
- (e) Apply layers of the primer (Material No. P07-007) and the applicable paint on the rivet heads and the exterior surface of the cover (2).
- (13) If necessary do Steps (1) thru (12) again to make the access openings and replace the fitting (4) in the remaining wing.


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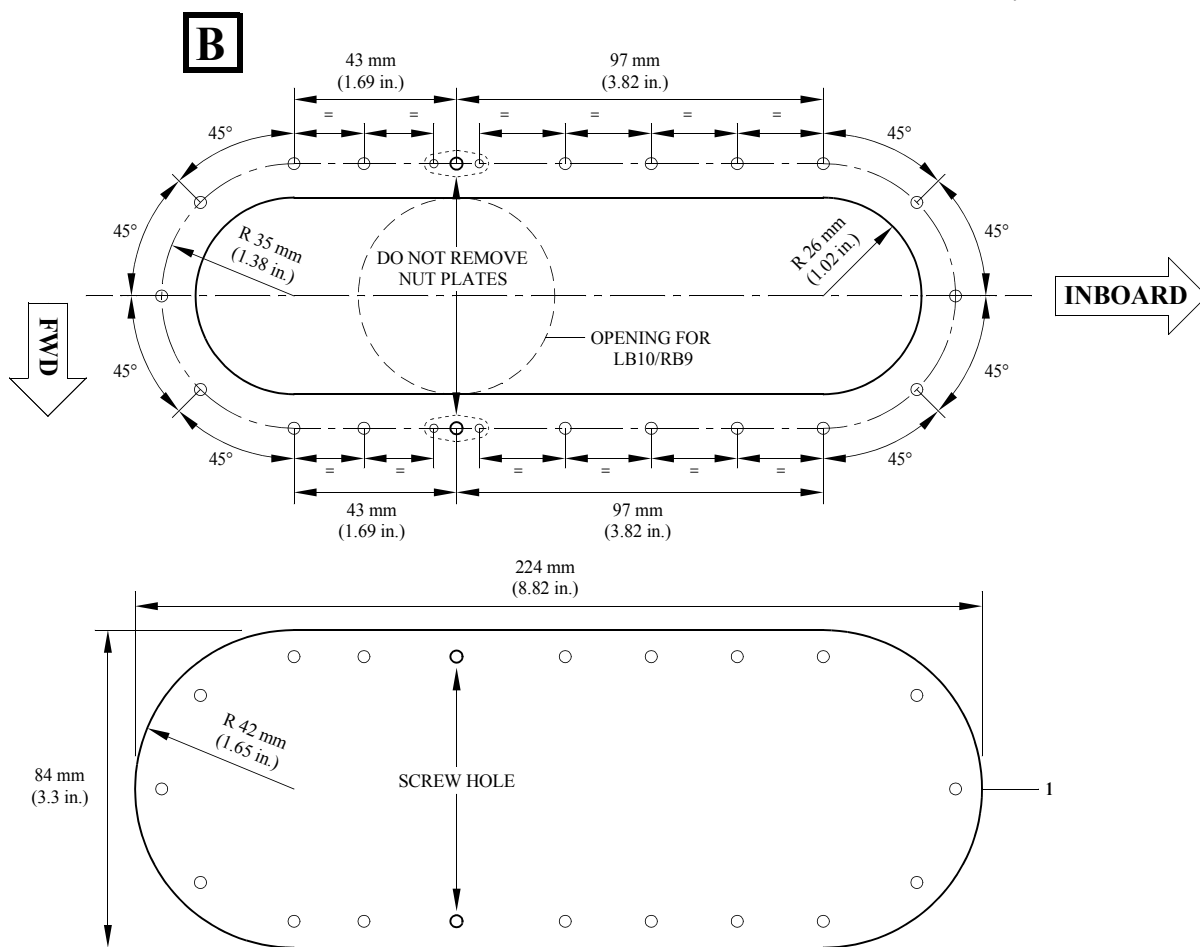
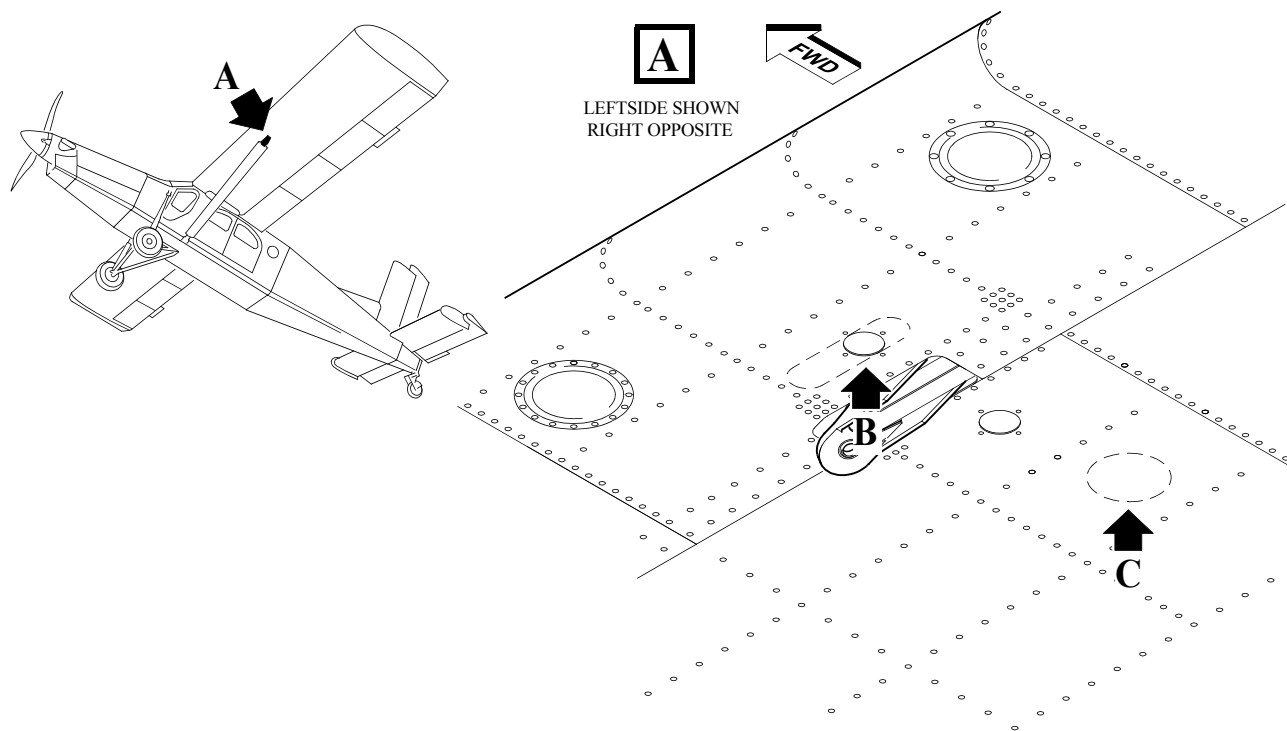
B. Close up

- (1) Remove all tools and materials. Make sure that the work areas are clean.
- (2) Install the access panels LB10 and RB9 as applicable (Ref. AMM. 06-40-00, Page Block 1).
- (3) Install the wing struts (Ref. AMM. 57-00-01, Page Block 401).

C. Documentation

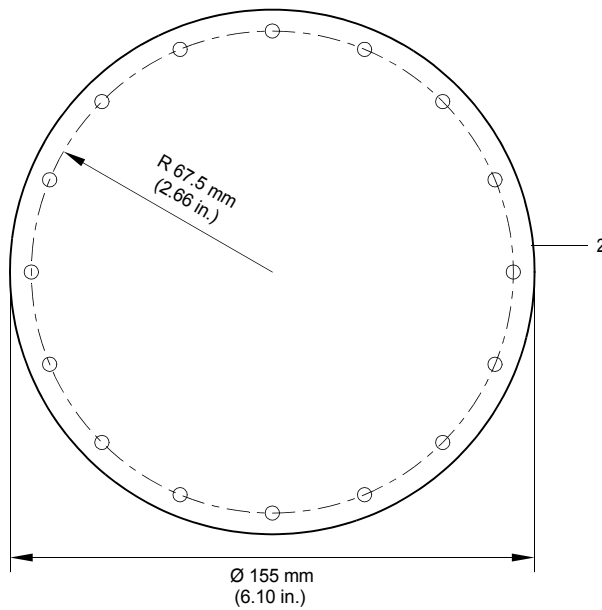
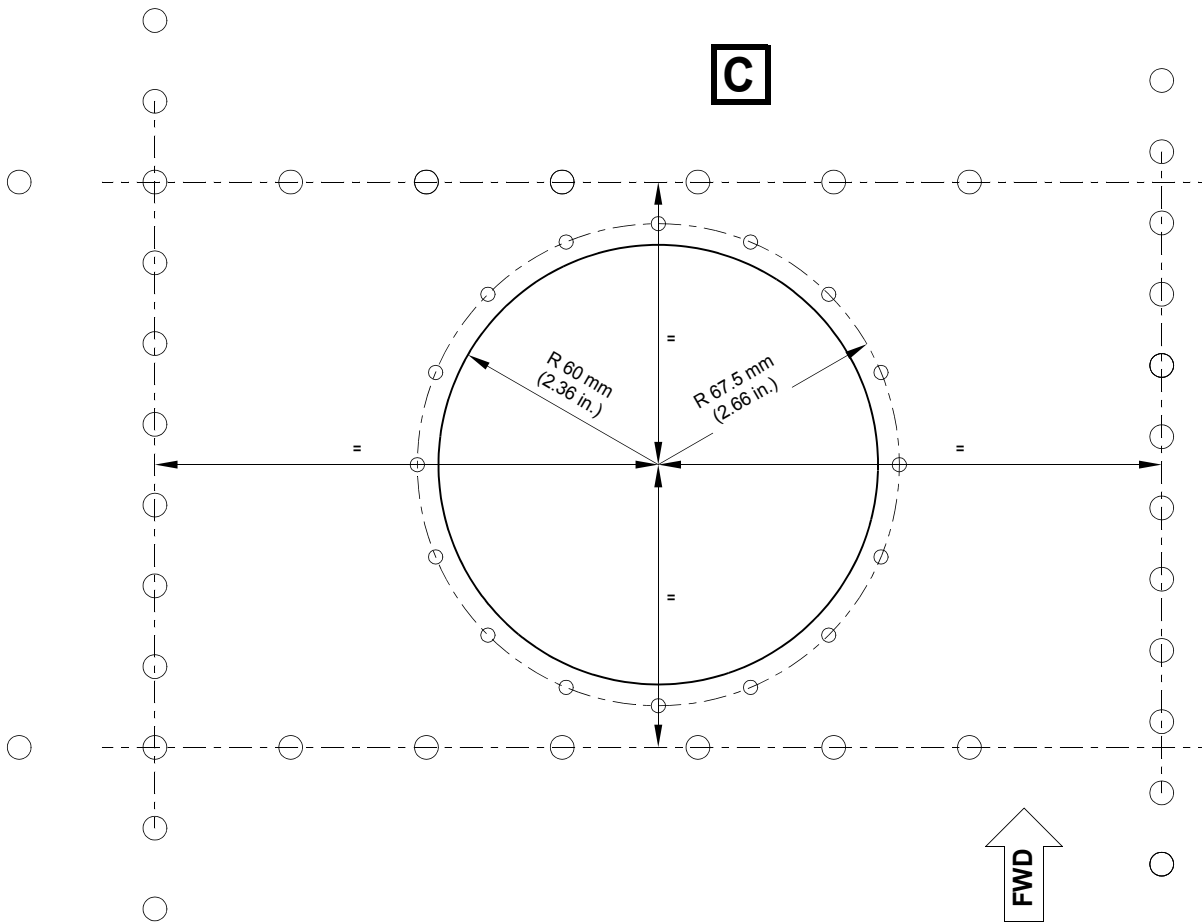
- (1) Make an entry in the Aircraft Logbook that Part 2 of this Service Bulletin have been incorporated.
- (2) Use the Table 1 (at the end of this Service Bulletin) to report your results and the serial number of the aircraft to PILATUS.
- (3) Return replaced wing strut fittings to Pilatus.

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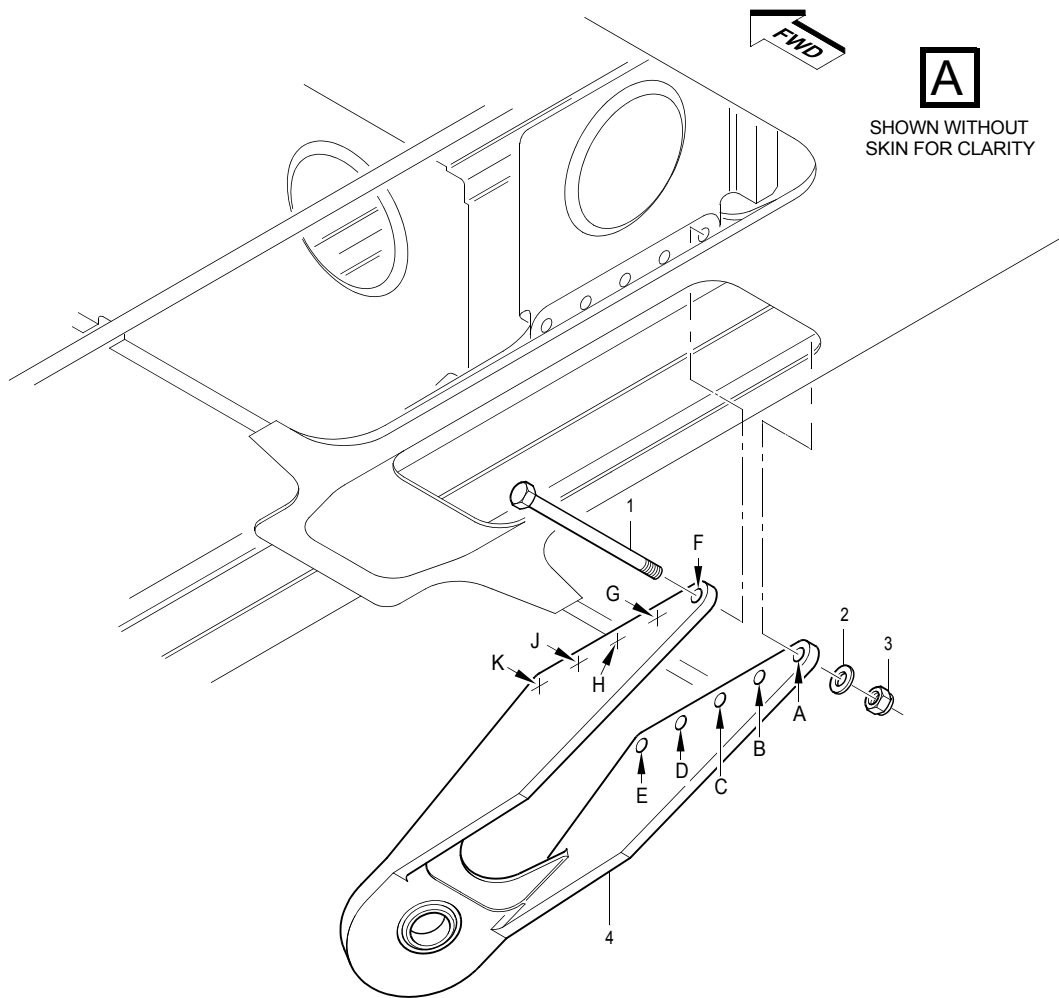
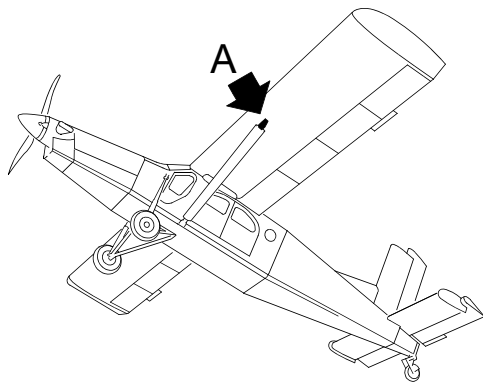
Access Openings and Covers - Installation (Left Shown, Right Similar)
Figure 2 (Sheet 1 of 2)

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Access Openings and Covers - Installation (Left Shown, Right Similar)
 Figure 2 (Sheet 2 of 2)

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Fitting - Replacement (Left Shown, Right Similar)
 Figure 3

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Table 1 - Aircraft / Fittings Information

| | | | | |
|---|---------------------------|--|-----------|--|
| Aircraft: | 1 | MSN | | |
| | 2 | Current Registration | | |
| | 3 | Date of First Operation | | |
| | 4 | Total flying hours since new | | |
| | 5 | Total landings since new | | |
| | 6 | Last Overhaul Date | | |
| | 7 | Type of Overhaul (partial/complete) | | |
| | 8 | Flying hours since last overhaul | | |
| | 9 | Landings since last overhaul | | |
| | | LH | RH | |
| Currently Installed wing | 10 | Date of First Operation | | |
| | 11 | Total flying hours since new | | |
| | 12 | Total landings since new | | |
| Currently installed Wing Strut Fitting on the Wing | 13 | Date of First Operation | | |
| | 14 | Total flying hours since new | | |
| | 15 | Total landings since new | | |
| | 16 | Corrosion found (yes/no) | | |
| | 17 | Wear found (yes/no) | | |
| | 18 | Cracks found (yes/no) | | |
| | 19 | Other findings (yes/no) * | | |
| 20 | Fitting replaced (yes/no) | | | |
| Currently Installed Spherical Bearing | 21 | Date of First Operation | | |
| | 22 | Total flying hours since new | | |
| | 23 | Total landings since new | | |
| | 24 | Corrosion (yes/no) | | |
| | 25 | Loose Housing (yes/no) | | |
| | 26 | Correct Alignment (yes/no) | | |
| | 27 | Free Rotation (yes/no) | | |
| | 28 | Worn (yes/no) | | |
| | 29 | Other findings (yes/no) * | | |
| | 30 | Removal/reinstallation (yes/no) | | |
| | 31 | Replacement (yes/no) | | |
| Maintenance Experience with Spherical Bearings | 32 | Regular removal/re-installation (yes/no) | | |
| | 33 | Typical removal/re-installation interval (Flying Hours) | | |
| | 34 | Typical removal/re-installation interval (Landings) | | |
| | 35 | Typical removal/re-installation interval (Calendar Time) | | |
| | 36 | Reason for removal/re-installation | | |
| | 37 | Regular replacement (yes/no) | | |
| | 38 | Typical replacement interval (Flying Hours) | | |
| | 39 | Typical replacement interval (Landings) | | |
| | 40 | Typical replacement interval (Calendar Time) | | |
| | 41 | Reason for replacement | | |

