

Service Bulletin No: 32-016

Ref No: 193

Modification No: INSPECTION

ATA Chapter: 32

**LANDING GEAR - MAIN GEAR AND DOORS  
INSPECTION OF THE MAIN LANDING GEAR (MLG) LH AND RH FOLDING STRUTS****1. Planning Information****A. Effectivity**

All PC-21 aircraft.

The following folding struts that have more than 2,500 landings:

- P/N 532.30.21.143 and 532.30.21.144
- P/N 532.30.21.173 and 532.30.21.174
- P/N 532.30.21.191 and 532.30.21.192.

Config. 1 A/C:

- A/C MSNs 101-154 - Pre SB 32-007 with folding strut P/Ns 532.30.21.143 and 532.30.21.144.

Config. 2 A/C:

- A/C MSNs 101-154 - Post SB 32-007 with folding strut P/Ns 532.30.21.143 and 532.30.21.144.
- A/C MSNs 155-233 - Post SB 32-007 with folding strut P/Ns 532.30.21.173 and 532.30.21.174.

Config. 3 A/C:

- A/C MSNs 234 and Up with folding strut P/Ns 532.30.21.191 and 532.30.21.192.

The following folding struts, held as spare or in stock, that have more than 2,500 landings:

- P/N 532.30.21.143 and 532.30.21.144
- P/N 532.30.21.173 and 532.30.21.174
- P/N 532.30.21.191 and 532.30.21.192.

**B. Concurrent Requirements**

None.

**C. Reason****(1) Problem**

During an after flight inspection, a folding strut of the right MLG was found cracked and damaged around the area of the MLG actuator eye end.

**(2) Solution**

A one time eddy-current inspection of the LH and RH folding strut is done for cracks in two positions on each folding strut. If cracks are found in the upper location of the folding strut in the area of the MLG actuator connection, the folding strut must be replaced. If a crack is found at the lower location and the crack is within given limits, blend repair can be done on the folding strut.

**D. Description**

This Service Bulletin gives the instructions and data necessary to inspect, and if necessary, repair or replace the LH and RH MLG folding struts.

**E. Compliance**

Mandatory.

Accomplishment required not later than 90 days after the effective date of this Service Bulletin.

**F. Approval**

The technical content of this Service Bulletin is approved under the authority of Letter of DOA Acceptance ref. FOCA. 21J.002.

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

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**H. Manpower**

	<b>Man-Hours</b>
Preparation	0.50
Inspection	8.00
Repair (if necessary)	1.50
Close Up	2.00
<b>TOTAL MAN-HOURS</b>	<b>12.00</b>

**I. Weight and Balance****(1) Weight Change**

None.

**(2) Moment Change**

None.

**J. Electrical Load Data**

Not changed.

**K. Software**

Not changed.

**L. References**

Aircraft Maintenance Manual (AMM):

00-50-00-00A-013A-A, 07-10-01-00A-541A-A, 07-10-01-00A-542A-A, 32-00-00-00A-012A-A,  
32-00-00-00A-525A-A, 32-10-02-00A-311A-A, 32-30-00-00A-320A-A, 32-31-01-03A-520A-A,  
32-31-01-03A-720A-A, 95-00-00-00A-012A-A.

Structure Repair Manual (SRM):

51-20-07-00A-353A, 51-70-01-00A-663A-A, 51-70-15-00A-663A-A.

**M. Publications Affected**

Not applicable.

**N. Interchangeability of Parts**

Not applicable.

**2. Material Information**
**A. Material - Price and Availability**

Operators who require further information on Price and Availability should contact their Customer Liaison Manager at:

Pilatus Aircraft Ltd.,  
6371 Stans,  
Switzerland.

Operators are requested to advise Pilatus Aircraft Ltd. of the Manufacturer's Serial Number (MSN), the flying hours and landings of aircraft which are allocated for this Service Bulletin using the Service Bulletin Evaluation Form.

**B. Material Necessary for Each Aircraft**
**(1) Material to be Procured**

No modification kit is required to do this Service Bulletin.

**(2) Consumable Materials (Ref. AMM 00-50-00-00A-013A-A)**

MATERIAL NO.	DESCRIPTION	QTY	REMARKS
P01-010	SOLVENT	A/R	Or equivalent
P02-009	ABRASIVE PAPER, GRADE 120	A/R	Or equivalent
P02-014	ABRASIVE PAPER, GRADE 400	A/R	Or equivalent
P02-031	ABSORBENT PAPER	A/R	Or equivalent
P04-028	GREASE	A/R	Aeroshell grease 33
P07-001	ALODINE 1200S	A/R	Or equivalent
P07-007	EPOXY PRIMER	A/R	With hardener
P07-031	PAINT, TOP COAT	A/R	Or equivalent
P10-013	CPC-ARDROX AV 40	A/R	Or equivalent
-	PIN, COTTER	1	P/N 940.17.02.521: Config. 1 Fig. 1, Item 7 Config. 2 Fig. 2, Item 11 Config. 3 Fig. 3, Item 7

**C. Material Necessary for Each Spare**

Not applicable.

**D. Re-identified Parts:**

Not applicable.

**E. Tooling - Cost and Availability**

PART No.	DESCRIPTION	QTY	REMARKS
-	Eddy-Current Crack Detection Equipment	1	Local supply

**3. Accomplishment Instructions (On Aircraft)**

**WARNING:** MAKE SURE THAT BOTH EJECTION SEATS HAVE THE SAFETY PINS INSTALLED IN THE SAFE FOR SERVICING LOCATIONS AND THAT THE CFS HAS THE SAFETY PIN INSTALLED IN THE SAFE POSITION BEFORE YOU GO INTO THE COCKPIT (REF. AMM, 95-00-00-00A-012A-A).

**WARNING:** BE CAREFUL WHEN YOU USE THE CONSUMABLE MATERIALS. OBEY THE MANUFACTURER'S HEALTH AND SAFETY INSTRUCTIONS.

**A. Preparation**

- (1) Do the safety procedures for the landing gear before you do work on the landing gear (Ref. AMM 32-00-00-00A-012A-A).
- (2) Lift the aircraft with jacks (Ref. AMM 07-10-01-00A-541A-A).

**B. Inspection**

**NOTE:** This procedure is applicable to the left and the right Main Landing Gear (MLG).

- (1) Config. 1 Aircraft (Ref. Fig. 1).
  - (a) Remove the bolt (2) that connects the MLG actuator (4) and the MLG folding strut (3) for access to do the inspection.
    - 1 Remove and discard the cotter pin (7).
    - 2 Remove and keep the nut (6) and the two washers (5).
    - 3 Remove and keep the bolt (2) and the washer (1) from the piston end of the MLG actuator (4).
  - (b) Do an eddy-current crack-detection test, refer to SRM 51-20-07-00A-353A.
    - 1 Use the absorbent paper (Material No. P02-031) made moist with the solvent (Material No. P01-010) to clean the inspection areas on the MLG folding strut (3).
    - 2 Obey the manufacturer's operating instructions and calibrate the eddy-current crack-detection equipment.
    - 3 Move the probe of the eddy-current crack-detection equipment over the inspection areas shown in Detail B.
    - 4 If you find cracks:
      - If you find cracks in upper MLG actuator connection area of the MLG folding strut (3):
        - Remove the MLG folding strut (3) (Ref. AMM 32-31-01-03A-520A-A)
        - Install a new MLG folding strut (3) (Ref. AMM 32-31-01-03A-720A-A).

- If you find cracks in lower area of the MLG folding strut (3):
    - Remove the MLG folding strut (3) (Ref. AMM 32-31-01-03A-520A-A)
    - Do the blend repair given in Step 3.B.(4)
    - If the MLG folding strut (3) is assessed as serviceable, install the repaired MLG folding strut (3) (Ref. AMM 32-31-01-03A-720A-A)
    - If the MLG folding strut (3) is assessed as unserviceable, install a new MLG folding strut (3) (Ref. AMM 32-31-01-03A-720A-A)
    - Contact Pilatus with the results of the inspection.
- 5 If you do not find cracks, continue with this Service Bulletin from Step 3.B.(5).
- (2) Config. 2 Aircraft (Ref. Fig. 2).
- (a) Remove the bolt (3) that connects the MLG actuator (5) and the MLG folding strut (4) and the extension lever (2) for access to do the inspection.
- 1 Remove and keep the nut (6), the washer (7), the bolt (1) and the clamping plate (8).
  - 2 Remove and discard the cotter pin (11).
  - 3 Remove and keep the nut (10) and the washer (9).
  - 4 Remove and keep the bolt (3) from the piston end of the MLG actuator (5).
  - 5 Remove and keep the extension lever (2) from the MLG folding strut (4).
- (b) Do an eddy-current crack-detection test, refer to SRM 51-20-07-00A-353A.
- 1 Use the absorbent paper (Material No. P02-031) made moist with the solvent (Material No. P01-010) to clean the inspection areas on the MLG folding strut (4).
  - 2 Obey the manufacturer's operating instructions and calibrate the eddy-current crack-detection equipment.
  - 3 Move the probe of the eddy-current crack-detection equipment over the areas shown in Detail B.
  - 4 If you find cracks:
    - If you find cracks in upper MLG actuator connection area of the MLG folding strut (4):
      - Remove the MLG folding strut (4) (Ref. AMM 32-31-01-03A-520A-A)
      - Install a new MLG folding strut (4) (Ref. AMM 32-31-01-03A-720A-A).
    - If you find cracks in lower area of the MLG folding strut (4):
      - Remove the MLG folding strut (4) (Ref. AMM 32-31-01-03A-520A-A)
      - Do the blend repair given in Step 3.B.(4)
      - If the MLG folding strut (4) is assessed as serviceable, install the repaired MLG folding strut (4) (Ref. AMM 32-31-01-03A-720A-A)

- If the MLG folding strut (4) is assessed as unserviceable, install a new MLG folding strut (4) (Ref. AMM 32-31-01-03A-720A-A)
- Contact Pilatus with the results of the inspection.

5 If you do not find cracks, continue with this Service Bulletin from Step 3.B.(6).

(3) Config. 3 Aircraft (Ref. Fig. 3).

(a) Remove the bolt (2) that connects the MLG actuator (4) and the MLG folding strut (3) for access to do the inspection.

1 Remove and discard the cotter pin (7).

2 Remove and keep the nut (6) and the two washers (5).

3 Remove and keep the bolt (2) and the washer (1) from the piston end of the MLG actuator (4).

(b) Do an eddy-current crack-detection test, refer to SRM 51-20-07-00A-353A.

1 Use the absorbent paper (Material No. P02-031) made moist with the solvent (Material No. P01-010) to clean the inspection areas on the MLG folding strut (3).

2 Obey the manufacturer's operating instructions and calibrate the eddy-current crack-detection equipment.

3 Move the probe of the eddy-current crack-detection equipment over the areas shown in Detail B.

4 If you find cracks:

- If you find cracks in upper MLG actuator connection area of the MLG folding strut (3):
  - Remove the MLG folding strut (3) (Ref. AMM 32-31-01-03A-520A-A)
  - Install a new MLG folding strut (3) (Ref. AMM 32-31-01-03A-720A-A).
- If you find cracks in lower area of the MLG folding strut (3):
  - Remove the MLG folding strut (3) (Ref. AMM 32-31-01-03A-520A-A)
  - Do the blend repair given in Step 3.B.(4)
  - If the MLG folding strut (3) is assessed as serviceable, install the repaired MLG folding strut (3) (Ref. AMM 32-31-01-03A-720A-A)
  - If the MLG folding strut (3) is assessed as unserviceable, install a new MLG folding strut (3) (Ref. AMM 32-31-01-03A-720A-A)
  - Contact Pilatus with the results of the inspection.

5 If you do not find cracks, continue with this Service Bulletin from Step 3.B.(7).



- (4) If necessary, do the blend repair to the MLG folding strut (Ref. Fig. 4).
- (a) Remove the crack damage gradually and carefully until the crack is completely removed. Make sure there is a smooth transition along the edge of the repair, refer to SRM 51-70-01-00A-663A-A).
- NOTE:** The maximum allowable material to be removed is as follows:
- A 3 mm (total) maximum dimension measured from the nominal corner of the strut to the edge of the blend repair
  - A maximum of 1.5 mm depth measured from the nominal corner
  - A maximum of 5 mm length measured along the edge to the full extent of the blend repair.
- (b) Restore the surface finish of the MLG folding strut, refer to SRM 51-70-15-00A-663A-A).
- (5) Config. 1 Aircraft (Ref. Fig. 1).
- (a) Install the bolt (2) that connects the MLG actuator (4) and the MLG folding strut (3).
- 1 Examine the bolt (2) for signs of damage and corrosion.
  - 2 If you find signs of damage and/or corrosion, replace the bolt (2) (Ref. AMM 32-10-02-00A-311A-A).
  - 3 Apply a thin layer of the grease (Material No. P04-028) to the bolt (2).
  - 4 Put the washer (1) on to the bolt (2).
  - 5 Make sure the piston rod end of the MLG actuator (4) is aligned correctly with the lugs of the MLG folding strut (3).
  - 6 Install the bolt (2), from rear to front, through the piston rod end of the MLG actuator (4).
  - 7 Install the two washers (5) and the nut (6) on the bolt (2).
  - 8 Safety the nut (6) with the new cotter pin (7) (P/N 940.17.02.521).
  - 9 Apply a layer of the CPC-Ardrox AV40 (Material No. P10-013) to:
    - The head of the bolt (2)
    - The nut (6).
- (6) Config. 2 Aircraft (Ref. Fig. 2).
- (a) Install the bolt (3) that connects the MLG actuator (5), the MLG folding strut (4) and the extension lever (2).
- 1 Examine the bolt (3) for signs of damage and corrosion.
  - 2 If you find signs of damage and/or corrosion, replace the bolt (3) (Ref. AMM 32-10-02-00A-311A-A).

- 3 Apply a thin layer of the grease (Material No. P04-028) to the bolt (3).
  - 4 Make sure the piston rod end of the MLG actuator (5) is aligned correctly with the lugs of the MLG folding strut (4).
  - 5 Put the extension lever (2) in position on the MLG folding strut (4).
  - 6 Install the bolt (3), from rear to front, through the piston rod end of the MLG actuator (5).
  - 7 Align the extension lever (2) and install the clamping plate (8), the bolt (1), the washer (7) and the nut (6).
  - 8 Install the washer (9) and the nut (10) on the bolt (3).
  - 9 Safety the nut (10) with the new cotter pin (11) (P/N 940.17.02.521).
  - 10 Apply a layer of the CPC-Ardrox AV40 (Material No. P10-013) to:
    - The head of the bolt (3)
    - The nut (10).
- (7) Config. 3 Aircraft (Ref. Fig. 3).
- (a) Install the bolt (2) that connects the MLG actuator (4) and the MLG folding strut (3).
    - 1 Examine the bolt (2) for signs of damage and corrosion.
    - 2 If you find signs of damage and/or corrosion, replace the bolt (2) (Ref. AMM 32-10-02-00A-311A-A).
    - 3 Apply a thin layer of the grease (Material No. P04-028) to the bolt (2).
    - 4 Put the washer (1) on to the bolt (2).
    - 5 Make sure the piston rod end of the MLG actuator (4) is aligned correctly with the lugs of the MLG folding strut (3).
    - 6 Install the bolt (2), from rear to front, through the piston rod end of the MLG actuator (4).
    - 7 Install the two washers (5) and the nut (6) on the bolt (2).
    - 8 Safety the nut (6) with the new cotter pin (7) (P/N 940.17.02.521).
    - 9 Apply a layer of the CPC-Ardrox AV40 (Material No. P10-013) to:
      - The head of the bolt (2)
      - The nut (6).

**C. Close up**

- (1) Do the operational test of the landing gear extension and retraction (Ref. AMM 32-30-00-00A-320A-A).

- (2) Do the close up procedures for the landing gear (Ref. AMM 32-00-00-00A-525A-A).
- (3) Lower the aircraft from the jacks (Ref. AMM 07-10-01-00A-542A-A).
- (4) Remove all equipment, materials and tools from the work area. Make sure that the work area is clean.

**D. Documentation**

- (1) Make an entry in the Aircraft Logbook that this Service Bulletin has been incorporated.
- (2) Use the Service Bulletin Evaluation Sheet and report your results and the serial number of the aircraft to PILATUS.

**4. Accomplishment Instructions - (Folding Struts Held as Spares or in Stock)****A. Do an eddy-current crack-detection test, refer to SRM 51-20-07-00A-353A.**

**NOTE:** For folding struts:

- P/N 532.30.21.143 and 532.30.21.144
- P/N 532.30.21.173 and 532.30.21.174

Refer to Fig. 1 or 2 for the areas where you do the inspection.

For folding struts:

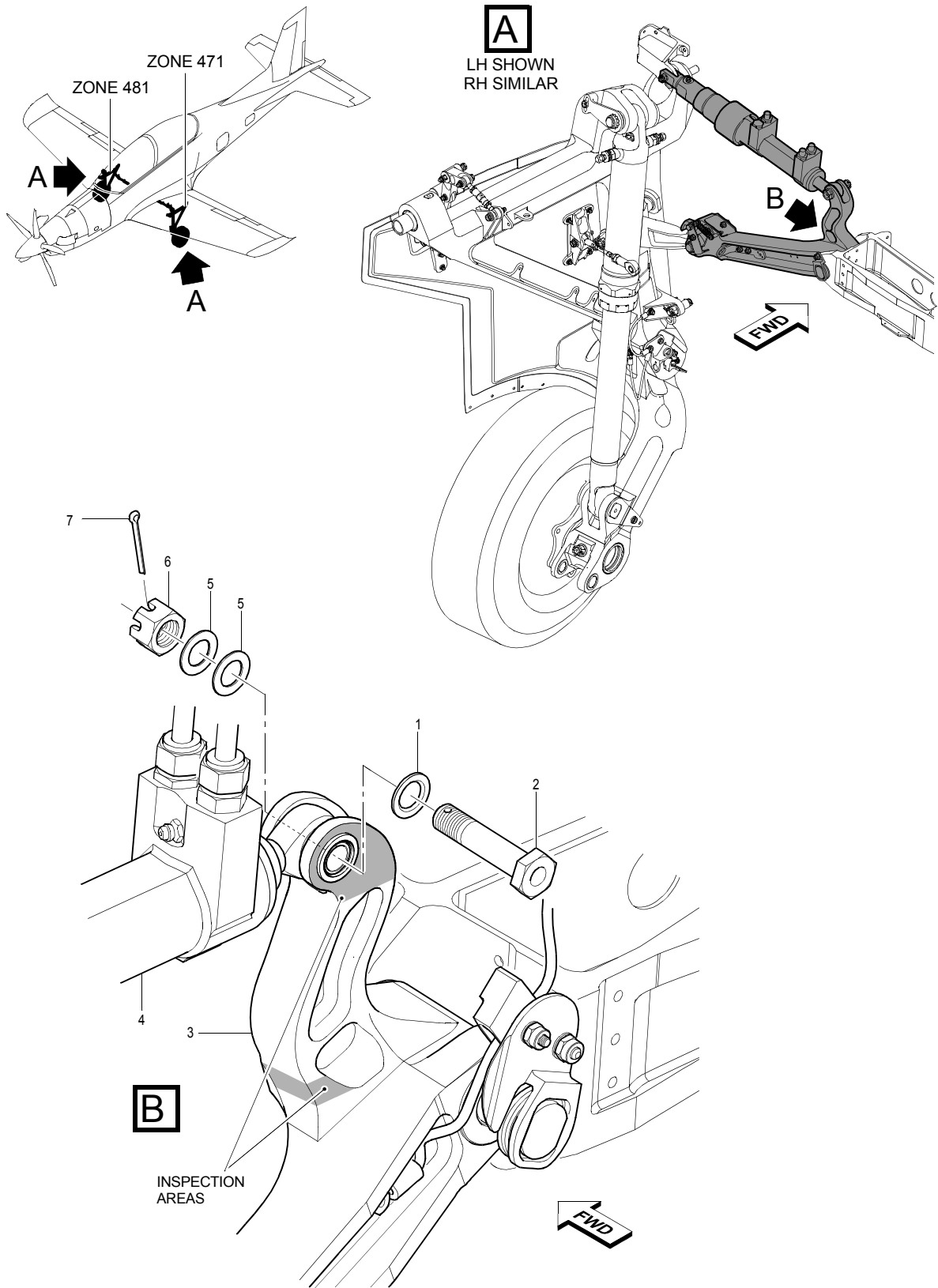
- P/N 532.30.21.191 and 532.30.21.192

Refer to Fig. 3 for the areas where you do the inspection.

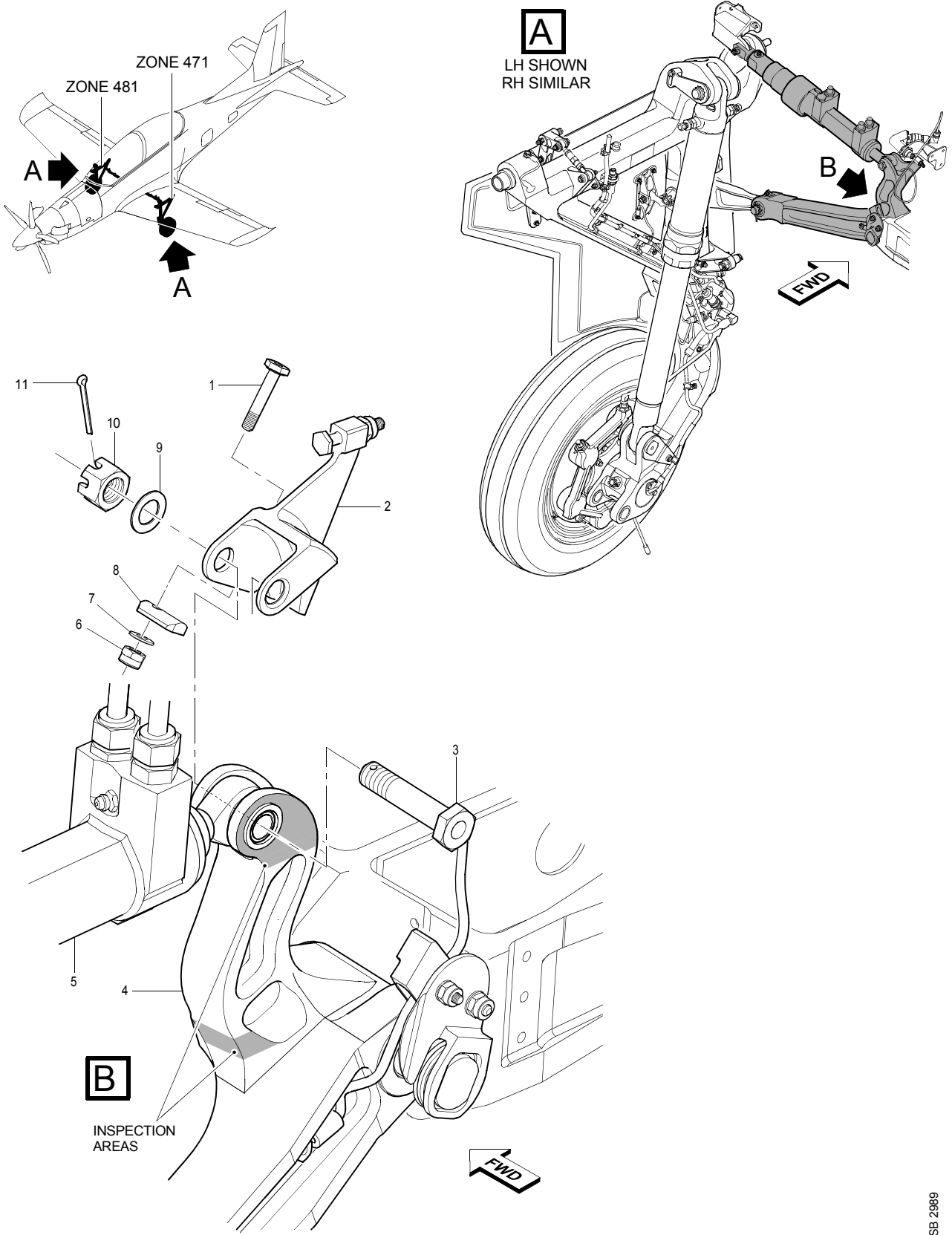
- (1) Use the absorbent paper (Material No. P02-031) made moist with the solvent (Material No. P01-010) to clean the inspection areas on the MLG folding strut.
- (2) Obey the manufacturer's operating instructions and calibrate the eddy-current crack-detection equipment.
- (3) Move the probe of the eddy-current crack-detection equipment over the areas shown in Detail B.
- (4) If you find cracks, contact Pilatus with the results of the inspection.

**B. Documentation**

- (1) Make an entry on the equipment label that this Service Bulletin has been accomplished.
- (2) Use the Service Bulletin Evaluation Sheet and report your results.

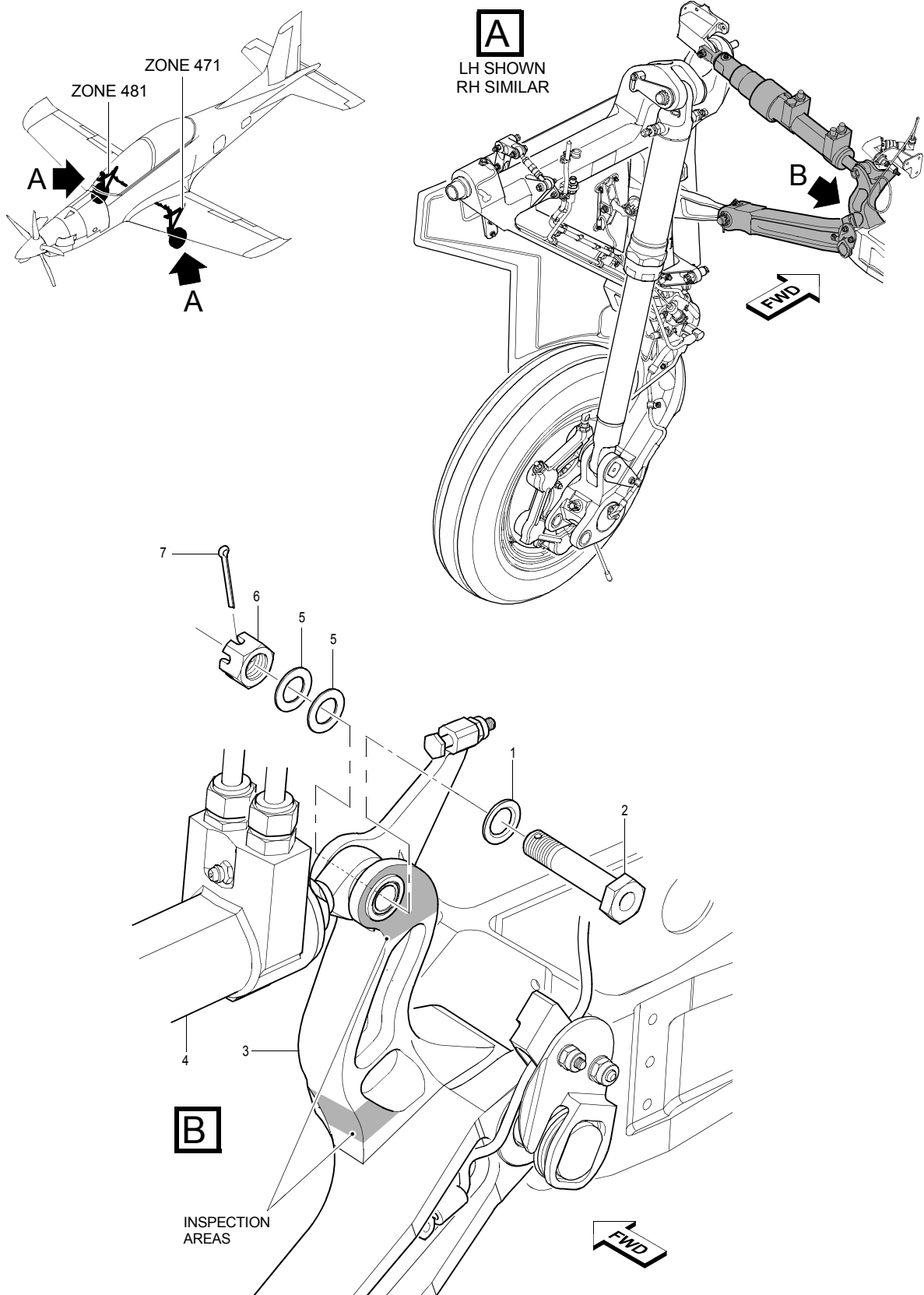


Inspection of the MLG LH and RH Folding Struts  
Figure 1 (Config. 1)

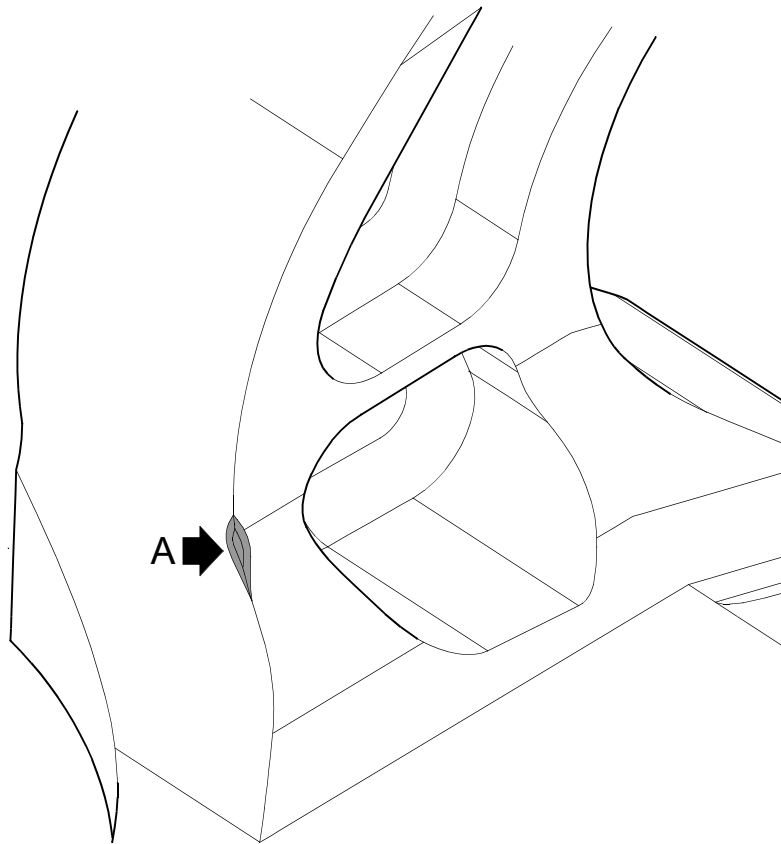


Inspection of the MLG LH and RH Folding Struts  
Figure 2 (Config. 2)

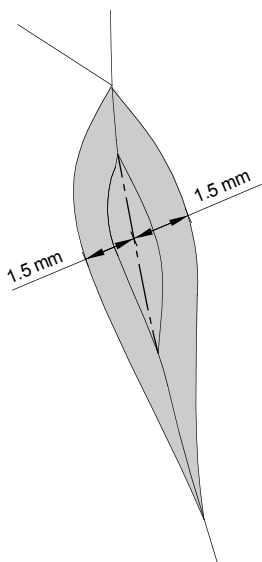
SB 2989



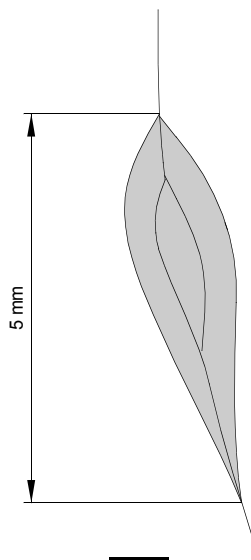
Inspection of the MLG LH and RH Folding Struts  
Figure 3 (Config. 3)



TYPICAL BLEND REPAIR EXAMPLE



MAXIMUM ALLOWABLE BLEND WIDTH FROM NOMINAL STRUT EDGE



MAXIMUM ALLOWABLE BLEND LENGTH ALONG EDGE

Typical Blend Repair to the LH and RH MLG Folding Struts  
Figure 4



<b>SERVICE BULLETIN EVALUATION SHEET FOR SB No. 32-016</b>			
<b>Title</b>	<b>Landing Gear - Main Gear and Doors Inspection of the Main Landing Gear (MLG) LH and RH Folding Struts</b>		
<b>Customer</b>			
<b>Service Center</b>			
<b>EMBODIMENT REPORTING</b>			
<b>This SB has been embodied:</b>		<input type="checkbox"/>	<b>On the entire fleet</b>
		<input type="checkbox"/>	<b>Only partially</b>
<b>Provide embodiment details per aircraft (use additional copies of this table, if necessary)</b>			
<b>MSN</b>	<b>Flying Hours</b>	<b>MSN</b>	<b>Flying Hours</b>
<b>Additional embodiment comments/findings</b>			
<b>EDITORIAL COMMENTS (procedure, kit quality, suggested improvements, etc.)</b>			
<b>Name</b>	<b>Signature</b>	<b>Date</b>	
Please complete and forward this form to: Pilatus Aircraft LTD, Customer Technical Support (MCC), P.O. BOX 992, 6371 Stans, Switzerland Fax: +41 (0)41 619 6773 Email: <a href="mailto:Techsupport@pilatus-aircraft.com">Techsupport@pilatus-aircraft.com</a>			

**SERVICE BULLETIN EVALUATION SHEET**

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