

Service Bulletin No: 32-006

Ref No: 49

Modification No: EC-10-0569

ATA Chapter: 32

**LANDING GEAR - MAIN GEAR AND DOORS
REPLACEMENT OF THE WASHER ON THE MAIN LANDING GEAR (MLG) GAS STRUT ATTACHMENT-
BOLT****1. Planning Information****A. Effectivity**

PC-21 aircraft MSN 101 thru MSN 127.

This modification will be embodied in production on MSN 128 and subsequent.

B. Concurrent Requirements

None.

C. Reason**(1) Problem**

On some PC-21 aircraft, the special washer installed between the gas strut and its attachments on the MLG was found installed incorrectly. When installed incorrectly, the non-rounded edge of special washer is pushed into the shoulder of the attachment bolt.

This can cause fatigue/corrosion failure of the bolt.

(2) Solution

Replace the special washer (P/N 532.10.21.095) with improved design special washer (P/N 532.10.21.203).

D. Description

This Service Bulletin gives the data and instructions necessary to:

- (1) Check if the left and/or right gas strut has been removed and installed or replaced during the life of the aircraft.
- (2) Remove the upper washer.
- (3) If necessary, do a magnetic particle inspection of the bolt.
- (4) If necessary, replace the bolt.
- (5) Install the new upper washer.
- (6) Remove the lower washer.
- (7) If necessary, do a magnetic particle inspection of the bolt.
- (8) If necessary, replace the bolt.

(9) Install the new lower washer.

E. Compliance

Mandatory.

Accomplishment required not later than seven (7) months 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 local Airworthiness Authorities for any changes, local regulations or sanctions that may affect the embodiment of this Service Bulletin.

G. Copyright Information

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H. Manpower

	Total
Preparation	2.00
Replacement of the Washers	4.00
Close up	2.00
TOTAL MAN-HOURS	8.00

NOTE: Man-hours figures do not include the time required to cure sealants, paints, adhesives or the NDI tests (If required).

I. Weight and Balance

(1) Weight Change

Negligible.

(2) Moment Change

Negligible.

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.

M. Publications Affected

AMM, 32-10-04-00A-720A-A.

Illustrated Parts Data (IPD), 21-A-32-10-00-050-941A-A and 21-C-32-10-00-060-941A-A
or
21-C-32-10-00-05C-941A-A and 21-C-32-10-00-06C-941A-A

N. Interchangeability of Parts

One way interchangeable. The special washers (P/N 532.10.21.095) must not be installed on post Service Bulletin aircraft.

2. Material Information
A. Material - Price and Availability

Operators who require more information should contact:

PILATUS AIRCRAFT LTD,
 MANAGER, INTEGRATED LOGISTIC SUPPORT
 CH 6371 STANS, Tel: +41 41 619 66 30
 SWITZERLAND Fax: +41 41 610 33 51

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.

Modification Kit Number	Price	Availability
500.50.21.050	Contact address above	Contact address above

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

(a) Modification Kit No. 500.50.21.050 has these parts:

NEW PART NO.	DESCRIPTION	OLD PART NO.	QTY	DISP CODE	FIG. NO.	ITEM NO.
532.10.21.203	SPECIAL WASHER	532.10.21.095	4	D	1	5 17

Disposition Codes: D - Discard

(b) Additional parts:

NEW PART NO.	DESCRIPTION	OLD PART NO.	QTY	DISP CODE	FIG. NO.	ITEM NO.
532.10.21.073	UPPER BOLT SEE NOTE	532.10.21.073	A/R	D	1	3
532.10.21.086	LOWER BOLT SEE NOTE	532.10.21.086	A/R	D	1	12

Disposition Codes: D - Discard

NOTE: The bolt is only necessary if the original bolt fails the magnetic particle test.

(2) Operator Supplied Materials (Ref. AMM, 00-50-00-00A-013A-A)

MATERIAL NO.	DESCRIPTION	QTY	REMARKS
P04-012	CORROSION PREVENTATIVE	A/R	

C. Material Necessary for Each Spare

Not applicable.

D. Re-identified Parts

Not applicable.

E. Tooling - Price and Availability:

None.

3. Accomplishment Instructions**A. Preparation**

WARNING: BE CAREFUL WHEN YOU MOVE THE MAIN LANDING GEAR (MLG) GAS STRUT. THE MLG GAS STRUT IS HEAVY. INCORRECT MOVEMENT OF THE MLG GAS STRUT CAN CAUSE INJURY TO PERSONNEL AND CAN CAUSE DAMAGE TO EQUIPMENT.

NOTE: This procedure is applicable to the left and right gas strut.

NOTE: The torque wrenches (P/N 904.10.89.141 and P/N 904.10.89.142) and the spanner (P/N 513.32.21.008) used in this procedure are part of the Torque Wrench Kit (P/N 513.12.21.004).

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

B. Replacement of the Washers on the Gas Strut Attachment-Bolts (Ref. Fig. 1)

WARNING: READ AND OBEY THE MANUFACTURERS HEALTH INSTRUCTIONS BEFORE YOU USE THE CONSUMABLE MATERIALS.

NOTE: Read and obey the manufacturers instructions about how to prepare the consumable materials before you use them.

- (1) Look at the aircraft maintenance record and check if the left and/or right gas strut has been:
 - Removed and installed again during the life of the aircraft
 - Replaced during the life of the aircraft.
- (2) If the gas strut (18) has been removed and installed or replaced, make a note of which gas strut (18) it was.
- (3) Remove the upper washer
 - (a) Remove the nut (25), the washer (24), the bolt (23), the washer (22) and the safety lock plate (21).
 - (b) Remove the nut (26), the washer (27), the bolt (2), the washer (1) and the safety lock plate (4).
 - (c) Remove the nut (20) with the spanner (P/N 513.32.21.008).

CAUTION: MAKE SURE YOU GIVE SUPPORT TO THE TRAILING ARM ASSEMBLY (6) WHEN YOU REMOVE THE BOLT (3). IF YOU DO NOT AND THE TRAILING ARM ASSEMBLY (6) FALLS, YOU CAN CAUSE DAMAGE TO THE TRAILING ARM ASSEMBLY (6).

NOTE: When you remove the special washer (5), make a note of the installed position.

NOTE: Two persons are necessary to do Para. 3.B.(3)(d).

- (d) Give support to the gas strut (18) and the trailing arm (6) and remove the washer (19), the bolt (3) and the special washer (5).
- (e) If the gas strut has been removed and installed or replaced (Ref. Para. 3.B.(2)), discard the special washer (5) and do the NDI of the upper bolt (3) (Ref. Para. 3.C.). Then continue the Service Bulletin from Para. 3.B.(4).
- (f) Do a check of the installed position of the special washer (5).

NOTE: The old special washer (5) has a radius on the internal hole. The correct installation is when the radius is towards the head of the bolt (3).

- (g) If the special washer (5) is:
 - Installed correctly, discard it and continue the Service Bulletin from Para. 3.B.(4).
 - Not installed correctly, discard it and do a check of the bolt (3) (Ref. Para. 3.C.). Then continue the Service Bulletin from Para. 3.B.(4).

- (4) Install the new upper washer

NOTE: The new special washer (5) (P/N 532.10.21.203) has a radius on the internal hole and a chamfer on the external diameter. The correct position for the new special washer (5) (P/N 532.10.21.203) is when the chamfer (on the external diameter) is away from the head of the bolt (3) (Ref. Detail F).

- (a) Put the gas strut (18) in position and install the new special washer (5) (P/N 532.10.21.203).
- (b) Apply a layer of the corrosion preventative (Material No. P04-012) to the shank of the bolt (3).
- (c) Install the bolt (3), the washer (19) and the nut (20).
- (d) Put the safety lock plate (4) in position and align the head of the bolt (3) with the safety lock plate (4).
- (e) Remove the safety lock plate (4).
- (f) Measure the run-down torque of the nut:
 - 1 Turn the nut (20) with your fingers as far as possible.
 - 2 Continue to turn the nut (20) with a torque wrench and measure the torque necessary to turn the nut (20).

3 This is known as the “run-down torque”.

4 Make a note of this run-down torque for nut (20).

(g) Add the run-down torque you noted at Para 3.B.(4)(f)4 to 19 Nm (168 lb in.).

NOTE: When you do the paragraph that follows, you must hold the bolt (3) in its aligned position when you torque the nut (20).

(h) Torque the nut (20) to the torque calculated in Para. 3.B.(4)(g) \pm 4 Nm (35 lb.in.). Use the spanner (P/N 513.32.21.008) and the torque wrench (P/N 904.10.89.141 or P/N 904.10.89.142).

(i) Install the safety lock plate (4) on the bolt (3) with the bolt (2), the washer (1), the washer (27) and the nut (26).

(j) Install the safety lock plate (21) on the nut (20) with the bolt (23), the washer (22), the washer (24) and the nut (25).

(5) Remove the lower washer

(a) Remove the nut (11), the washer (10), the bolt (7), the washer (8) and the safety lock plate (9).

(b) Remove the bolt (14), the washer (13) and the safety lock plate (15).

(c) Remove the nut (16) with the spanner (P/N 513.32.21.008).

CAUTION: MAKE SURE YOU GIVE SUPPORT TO THE TRAILING ARM ASSEMBLY (6) WHEN YOU REMOVE THE BOLT (12). IF YOU DO NOT AND THE TRAILING ARM ASSEMBLY (6) FALLS, YOU CAN CAUSE DAMAGE TO THE TRAILING ARM ASSEMBLY (6).

NOTE: When you remove the special washer (17), make a note of the installed position.

NOTE: Two persons are necessary to do Para. 3.B.(5)(d).

(d) Give support to the gas strut (18) and the trailing arm (6) and remove the bolt (12) and the special washer (17).

(e) If the gas strut has been removed and installed or replaced (Ref. Para. 3.B.(2)), discard the special washer (17) and do the NDI of the lower bolt (12) (Ref. Para. 3.C.). Continue the Service Bulletin from Para. 3.B.(6).

(f) Do a check of the installed position of the special washer (17).

NOTE: The old special washer (17) has a radius on the internal hole. The correct installation is when the radius is towards the head of the bolt (12).

- (g) If the special washer (17) is:
- Installed correctly, discard it and continue the Service Bulletin from Para. 3.B.(6).
 - Not installed correctly, discard it and do a check of the bolt (12) (Ref. Para. 3.C.). Then continue the Service Bulletin from Para. 3.B.(6).

- (6) Install the new lower washer

NOTE: The new special washer (17) (P/N 532.10.21.203) has a radius on the internal hole and a chamfer on the external diameter. The correct position for the new special washer (17) (P/N 532.10.21.203) is when the chamfer (on the external diameter) is away from the head of the bolt (12) (Ref. Detail G).

- (a) Put the gas strut (18) in position and install the new special washer (17) (P/N 532.10.21.203).
- (b) Apply a layer of the corrosion preventative (Material No. P04-012) to the shank of the bolt (12).
- (c) Install the bolt (12) and the nut (16).
- (d) Put the safety lock plate (15) in position and align the head of the bolt (12) with the safety lock plate (15).
- (e) Remove the safety lock plate (15).
- (f) Measure the run-down torque of the nut:
- 1 Turn the nut (16) with your fingers as far as possible.
 - 2 Continue to turn the nut (16) with a torque wrench and measure the torque necessary to turn the nut (16).
 - 3 This is known as the "run-down torque".
 - 4 Make a note of this run-down torque for nut (16).
- (g) Add the run-down torque you noted at Para 3.B.(6)(f)4 to 15 Nm (133 lb in.).
- NOTE:** When you do the paragraph that follows, you must hold the bolt (12) in its aligned position when you torque the nut (16).
- (h) Torque the nut (16) to the torque calculated in Para. 3.B.(6)(g) \pm 3 Nm (27 lb.in.). Use the spanner (P/N 513.32.21.008) and the torque wrench (P/N 904.10.89.141 or P/N 904.10.89.142).
- (i) Install the safety lock plate (15) with the bolt (14) and the washer (13).
- (j) Install the safety lock plate (9) on the nut (16) with the bolt (7), the washer (8), the washer (10) and the nut (11).
- (7) Do Para. 3.B.(3) thru (6) on the other gas strut.

C. Non Destructive Inspection (NDI)

- (1) Do the NDI.

NOTE: Para. 3.C is only necessary if:

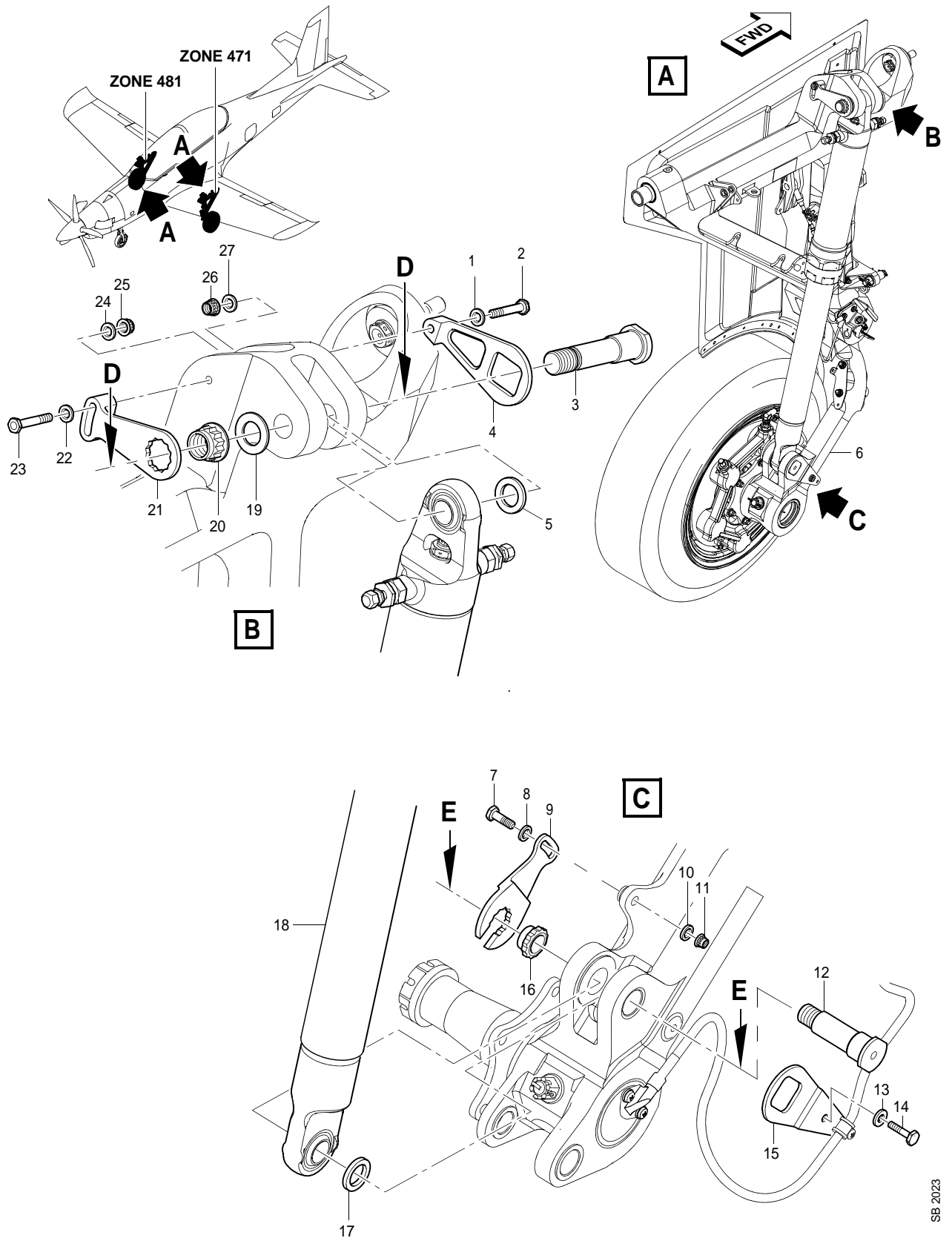
- The gas strut has been removed and installed or replaced during the life of the aircraft. Do the inspection on the upper and lower bolts (3 and 12) of the related gas strut.
 - The radius of the special washer is not towards the head of the bolt (3 or 12). Do the inspection on the related bolt (3 or 12).
- (a) Do the magnetic particle inspection in accordance with ASTM E 1444.
 - (b) The person who does the inspection must be level 2 qualified as per NAS 410 or equivalent international standards.
 - (c) Use indirect magnetization of the part. Do not use direct magnetization.
 - (d) Do a magnetic particle inspection of the bolt.
 - (e) After the inspection:
 - The bolts with no cracks have to be de-magnetized and are serviceable
 - The bolts with cracks have to be replaced.

D. Close up

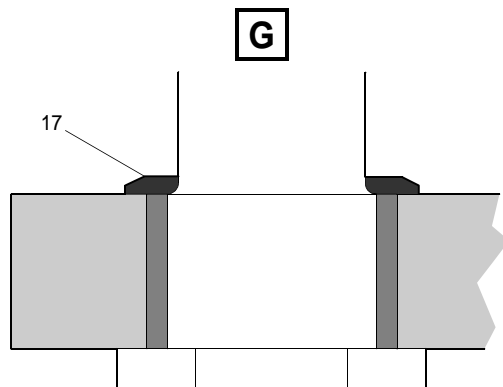
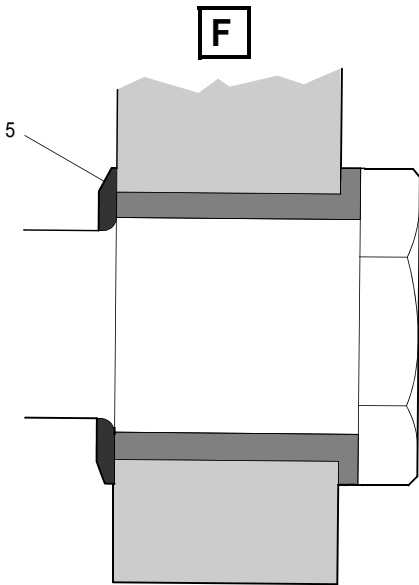
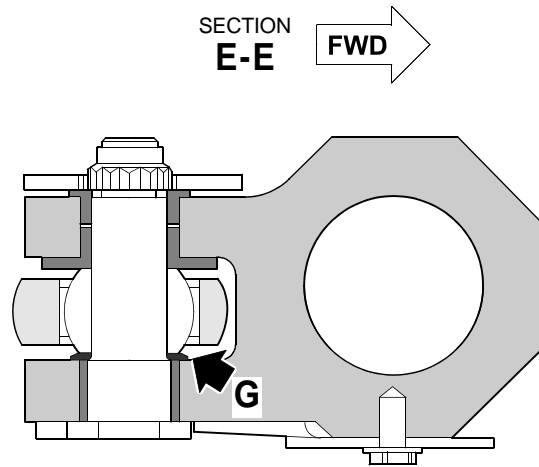
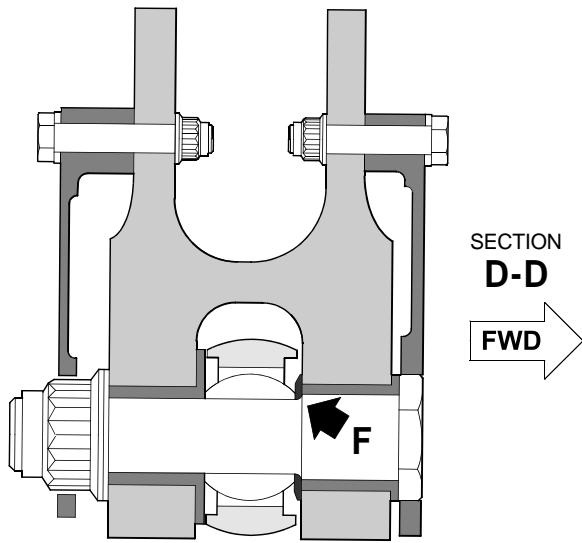
- (1) Remove all tools and materials. Make sure the work areas are clean.
- (2) Lower the aircraft and remove the jacks (Ref. AMM, 07-10-01-00A-541A-A).
- (3) Do the close-up procedures for the landing gear (Ref. AMM, 32-00-00-00A-525A-A).

E. 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.



Replacement of the Washer on the MLG Gas Strut Attachment-Bolt
Figure 1, Sheet 1 of 2



SB 2061

Replacement of the Washer on the MLG Gas Strut Attachment-Bolt
Figure 1, Sheet 2 of 2

SERVICE BULLETIN EVALUATION SHEET FOR SB No. 32-006			
Title	Landing gear - Main gear and doors Replacement of the Washer on the Main Landing Gear (MLG) Gas Strut Attachment-Bolt		
Customer			
Service Center			
EMBODIMENT REPORTING			
This SB has been embodied:		<input type="checkbox"/>	On the entire fleet
		<input type="checkbox"/>	Only partially
Provide embodiment details per aircraft (use additional copies of this table, if necessary)			
MSN	Flying Hours	MSN	Flying Hours
Additional embodiment comments/findings			
EDITORIAL COMMENTS (procedure, kit quality, suggested improvements, etc.)			
Name	Signature	Date	
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: Techsupport@pilatus-aircraft.com			

SERVICE BULLETIN EVALUATION SHEET

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