

Service Bulletin No: 27-012

Ref No: 169

Modification No: EC-17-0264

ATA Chapter: 27

**FLIGHT CONTROLS - SPOILERS  
LUBRICATION OF THE SPOILER CONTROL ROD-TO-SPOILER ACTUATOR CONNECTION-BOLT AND  
INSTALLATION WITH AXIAL PLAY****1. Planning Information****A. Effectivity**

MSN 101 thru MSN 241.

This modification will be incorporated during production on MSN 242 and subsequent.

**B. Concurrent Requirements**

None.

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

On some aircraft installed with spoiler control rod end P/N 944.61.12.001, spoilers have been found slightly deployed when the pilot had selected the aileron to the neutral position.

**(2) Solution**

The following procedures are introduced to the spoiler control rod at the spoiler actuator connection-bolts:

- The actuator rod bolts are removed
- The actuator rod bolts are lubricated and re-installed with an axial play tolerance and no requirement to torque tighten.

**D. Description**

This Service Bulletin gives the instructions and data necessary to do a one off lubrication and re-installation of the actuator rod bolts, that attach the actuator lever to the left and right spoilers, with axial play.

On aircraft MSNs 101-233 without SB 27-006 incorporated: No action required, the issue has been resolved with the introduction of SB 27-005.

For aircraft MSNs 101-233 with SB 27-006 up to Revision 1 status incorporated: Operators must incorporate this Service Bulletin.

**NOTE:** Revision 2 of SB 27-006 introduces the same technical solution as this Service Bulletin.

For aircraft MSNs 234-241: Operators must incorporate this Service Bulletin.

**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
Modification	0.50
Close up	1.00
<b>TOTAL MAN-HOURS</b>	<b>2.00</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), 00-10-00-00A-017A-A, 00-50-00-00A-013A-A, 06-40-00-00A-055A-A, 24-40-00-00A-331A-A, 24-40-00-00A-332A-A, 27-00-00-00A-012A-A, 27-00-00-00A-525A-A, 27-60-01-00A-344A-A, 29-00-00-00A-331A-A, 29-00-00-00A-332A-A, 29-20-02-00A-225A-A, 31-10-01-01A-040A-A, 95-00-00-00A-012A-A.

**M. Publications Affected**

AMM, 27-60-01-00A-242A-A, 27-60-01-02A-720A-A.

**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.

KIT NUMBER	PRICE	AVAILABILITY
500.50.21.151	Contact address above	Contact address above

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

Kit No. 500.50.21.151 has these parts:

NEW PART NO.	DESCRIPTION	OLD PART NO.	QTY	DISP. CODE	FIG	ITEM
940.17.02.317	COTTER PIN	940.17.02.317	2	D	1	2
Disposition Codes: D - Discard						

**NOTE:** Operators do not need to purchase Kit No. 500.50.21.151, the two cotter pins, P/N 940.17.02.317 can be sourced as local supply items.

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

MATERIAL NO.	DESCRIPTION	QTY	REMARKS
P01-010	SOLVENT	A/R	Or equivalent
P02-031	ABSORBENT PAPER	A/R	Or equivalent
P04-028	GREASE	A/R	Or equivalent

**C. Material Necessary for Each Spare**

None.

**D. Re-identified Parts**

None.

**E. Tooling - Cost and Availability**

None.

**3. Accomplishment Instructions**

**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).

**NOTE:** The mechanical tool kit (P/N 990.00.02.004) is necessary to do this procedure.

**NOTE:** This procedure is applicable to the left and the right spoiler actuators.

**NOTE:** To identify the AGE and tools used in this procedure, refer to the AMM, list of AGE and tools, 00-10-00-00A-017A-A.

**A. Preparation**

- (1) Do the safety procedures for the Flight Control System (FCS), before you do work on the flight controls (Ref. AMM, 27-00-00-00A-012A-A).

**NOTE:** For more information on the location of the access items (Ref. AMM, 06-40-00-00A-055A-A).

- (2) Energize the aircraft electrical system (Ref. AMM, 24-40-00-00A-331A-A).
- (3) Connect the Hydraulic Ground Power-Unit (HGPU) to the aircraft (Ref. AMM, 29-00-00-00A-331A-A).
- (4) Put the DO NOT OPERATE THE FLIGHT CONTROLS warning panels (P/N. 990.00.00.910) in the front and rear cockpits.
- (5) Put the DO NOT OPERATE THE FLIGHT CONTROLS warning panels (P/N. 990.00.00.910) in the area of the left and the right spoilers.

**WARNING:** BE CAREFUL BEFORE YOU PRESSURIZE THE HYDRAULIC SYSTEM. MAKE SURE THAT THE POSITION OF THE CONTROL COLUMN AND THE AIRBRAKE SWITCH AGREES WITH THE POSITION OF THE CONTROL SURFACES. THE SUDDEN MOVEMENT OF THE CONTROL SURFACES CAN CAUSE AN INJURY TO THE PERSONS AND CAN CAUSE DAMAGE TO THE EQUIPMENT.

- (6) Energize the HGPU.
- (7) Set the HGPU delivery pressure to 207 bar (3000 psi).  
**NOTE:** For the location of the flap control lever (Ref. AMM, 31-10-01-01A-040A-A).
- (8) Set the flap control lever to the LDG position.
- (9) Make sure that the flaps move smoothly and freely to the landing position.
- (10) De-energize the aircraft electrical system (Ref. AMM, 24-40-00-00A-332A-A).
- (11) De-energize the HGPU.
- (12) Release the hydraulic system pressure (Ref. AMM, 29-20-02-00A-225A-A).

- (13) Push the reset button on the top of the spoiler actuator and release the hydraulic pressure in the spoiler actuator (Ref. AMM, 27-60-01-00A-344A-A for more information).
- (14) Move the spoiler to the up position with your hand.

**B. Modification (Ref. Fig. 1)**

- (1) Remove and discard the cotter pin (2).
- (2) Remove the nut (3), the washer (4), the washer (6) and the bolt (7) and disconnect the spoiler control rod (1) from the spoiler actuator lever (5).
- (3) Clean the bolt (7), the washers (4) and (6) and the nut (3) with the absorbent paper (Material No. P02-031) made moist with the solvent (Material No. P01-010).

**CAUTION:** DO NOT LET THE SOLVENT (MATERIAL NO. P01-010) GO INTO THE BEARING OF THE ROD-END OF THE SPOILER CONTROL ROD (1). IT WILL CAUSE THE BEARING TO BECOME DRY AND SEIZE.

- (4) Clean the rod-end (1) of the spoiler control rod with the absorbent paper (Material No. P02-031) made moist with the solvent (Material No. P01-010).
- (5) Let the rod-end (1) of the spoiler control rod, the bolt (7), the washers (4) and (6) and the nut (3) dry.
- (6) Put the spoiler control rod (1) in position in the spoiler actuator lever (5).
- (7) Apply a layer of the grease (Material No. P04-028) to the plain part of the bolt (7).
- (8) Install the bolt (7), the washer (4), the washer (6) and the nut (3).
- (9) Tighten the nut (3) until there is 0.4 mm (0.016 in.) axial play on the bolt (7).
- (10) If necessary, continue to tighten the nut (3) until the hole for the new cotter pin (2) aligns with the next cut-out in the nut (3).
- (11) Make sure the axial play is more than 0.1 mm (0.004 in.).
- (12) Safety the nut (3) with the new cotter pin (2) (P/N 940.17.02.317).
- (13) Do Steps 3.B.(1) thru (12) for the other spoiler.

**C. Close up**

- (1) Energize the aircraft electrical system (Ref. AMM, 24-40-00-00A-331A-A).

**WARNING:** BE CAREFUL BEFORE YOU PRESSURIZE THE HYDRAULIC SYSTEM. MAKE SURE THAT THE POSITION OF THE CONTROL COLUMN AND THE AIRBRAKE SWITCH AGREES WITH THE POSITION OF THE CONTROL SURFACES. THE SUDDEN MOVEMENT OF THE CONTROL SURFACES CAN CAUSE AN INJURY TO THE PERSONS AND CAN CAUSE DAMAGE TO THE EQUIPMENT.

- (2) Energize the HGPU.
- (3) Set the HGPU delivery pressure to 207 bar (3000 psi).

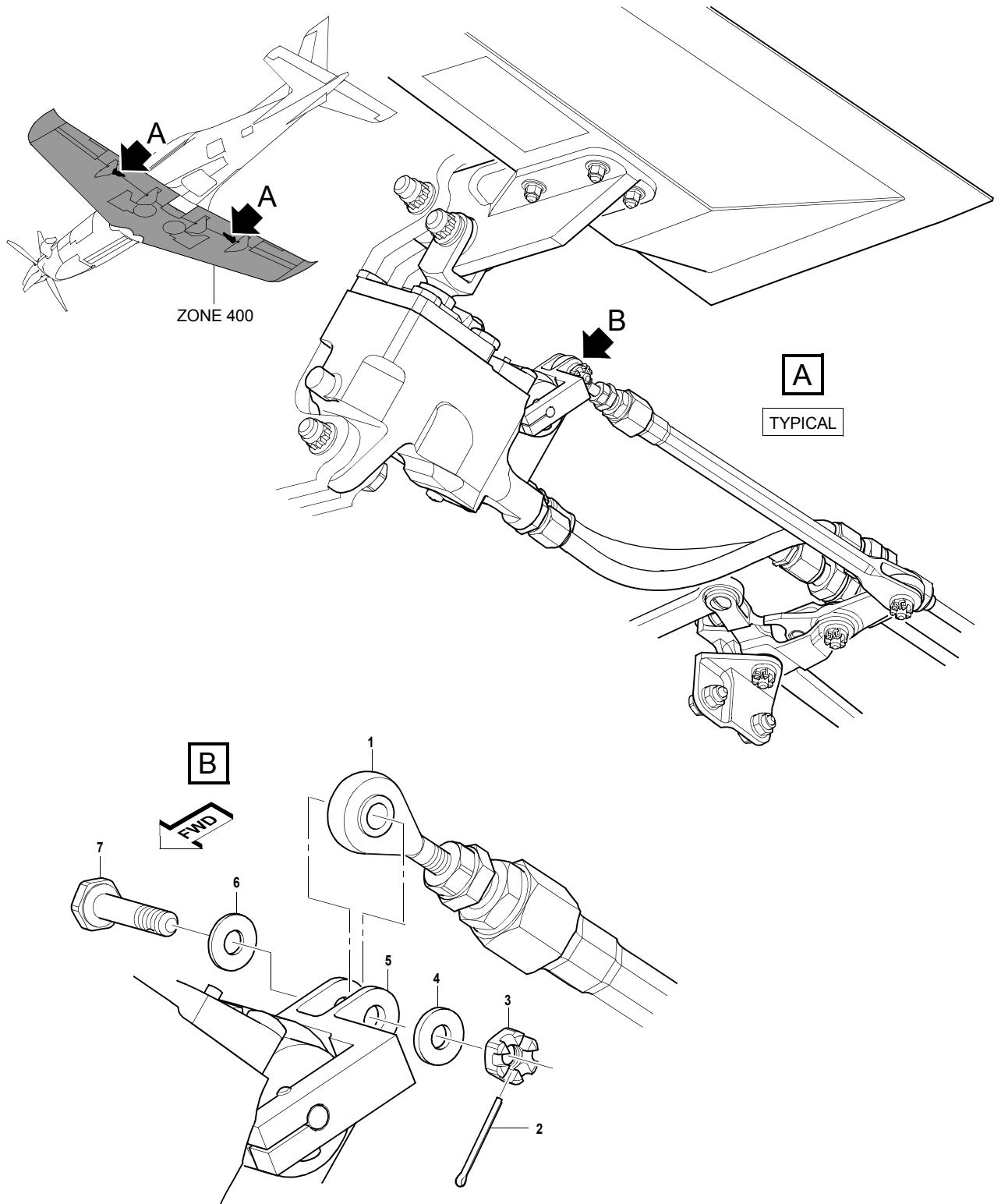
**WARNING:** BE CAREFUL WHEN YOU OPERATE THE CONTROL SURFACES. MAKE SURE PERSONS AND EQUIPMENT ARE AWAY FROM THE AREA AROUND THE CONTROL SURFACES. A SUDDEN MOVEMENT OF THE CONTROL SURFACES CAN CAUSE AN INJURY TO THE PERSONS AND CAN CAUSE DAMAGE TO THE EQUIPMENT.

- (4) Put the control column in the front cockpit in the neutral position.
- (5) Make sure that the spoiler actuators are compressed fully and the spoilers are in the down position.
- (6) Move the control column in the front cockpit fully to the right position.
- (7) Make sure the right aileron and the right spoiler move to the fully up position.
- (8) Put the control column in the front cockpit in the neutral position.
- (9) Make sure that the spoiler actuators are compressed fully and the spoilers are in the down position.
- (10) Move the control column in the front cockpit fully to the left position.
- (11) Make sure the left aileron and the left spoiler move to the fully up position.
- (12) Put the control column in the front cockpit in the neutral position.
- (13) Make sure that the spoiler actuators are compressed fully and the spoilers are in the down position.
- (14) Set the flap control lever to the UP position.
- (15) Make sure that the flaps move smoothly to the up position.
- (16) De-energize the HGPU.
- (17) Disconnect the HGPU from the aircraft (Ref. AMM, 29-00-00-00A-332A-A).
- (18) De-energize the aircraft electrical system (Ref. AMM, 24-40-00-00A-332A-A).
- (19) Remove the warning panels.
- (20) Do the close up procedure for the FCS (Ref. AMM, 27-00-00-00A-525A-A).
- (21) 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.





Removal, Lubrication and Re-installation of the Rod End Bolts With Axial Play  
Figure 1

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<b>SERVICE BULLETIN EVALUATION SHEET FOR SB No. 27-012</b>			
<b>Title</b>	<b>Flight Controls - Spoilers Lubrication of the Spoiler Control Rod-to-Spoiler Actuator Connection-Bolt and Installation With Axial Play</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</b> (procedure, kit quality, suggested improvements, etc.)			
<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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