

**Service Bulletin No: 27-010****Ref No: 233****Modification No: EC-23-0567****ATA Chapter: 27****FLIGHT CONTROLS - YAW CONTROL  
IMPROVEMENTS TO THE RUDDER-TRIM SYSTEM****1. Planning information****A. Effectivity**

PC-24 aircraft MSN 101 thru MSN 530 (Pre or Post SB 27-009) that have short rudder trim control rods P/N 527.20.24.464 installed.

This modification will be incorporated on MSN 531 and subsequent during production.

**B. Concurrent requirements**

None.

**C. Reason**

This Service Bulletin introduces a modification of the short rudder-trim control rods and removes the need to do the repetitive replacement of these control rods as given in PC-24 SB 27-009.

**(1) Problem**

Pilatus has become aware that the titanium threaded bolts at the forward end of the short rudder trim tab actuating rods may be subject to oscillating loads due to aerodynamic forces acting on the trim tab. This condition, if not detected and corrected, could lead to bolt failure, possibly resulting in loss of the rudder control.

**(2) Solution**

Modification of the short rudder trim control rods, and a change of material for the threaded rod ends to improve fatigue tolerance.

**D. Description**

This Service Bulletin gives the data and instructions necessary to modify the short rudder trim control rods.

**E. Compliance**

Mandatory.

At the next opportunity, but no later than:

- The first 300 FH of the aircraft
- OR
- 300 FH from the last accomplishment of Service Bulletin SB 27-009.

The AD 2023-0219-E is not applicable after embodiment of PIL Service Bulletin No: 27-010, initial issue, or later amendment, as per EASA Major change approval 10084861 dated 03 July 2024

**F. Approval**

The technical content of this document is approved under the authority of the DOA ref. EASA.21J.357.

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

**G. Copyright and legal statement**

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**H. Manpower**

Description	Man-Hours
Preparation	0.5
Modification	6.5
Requirements after job completion	0.5
<b>TOTAL MAN-HOURS</b>	<b>7.5</b>

**NOTE:** The man-hours do not include the time necessary to cure sealants, paints and adhesives.

**I. Weight and balance**

- (1) Weight change:  
+ 0.177 lb (+ 0,080 Kg).
- (2) Moment change:  
+ 103.476 lb\*in (+ 1,192 Kg\*m).

**J. Electrical load change data**

Not changed.

**K. Software**

Not changed.

**L. References****Aircraft Maintenance Manual (AMM):**

PC24-A-A00-50-0000-00A-070A-A	PC24-A-E20-10-0003-00A-913A-A
PC24-A-E20-10-0003-01A-913A-A	PC24-A-E20-10-0004-00A-913A-A
PC24-A-E20-20-0001-00A-040A-A	PC24-A-E20-40-0000-00A-913A-A
PC24-A-E24-00-0000-00A-913A-A	PC24-A-E27-20-0000-00A-340A-A
PC24-A-E27-20-0005-00A-320A-A	PC24-A-E27-20-0006-00A-520A-A
PC24-A-E27-20-0006-00A-720A-A	

**Tools and Equipment Manual (TEM):**

PC24-A-A00-00-0000-00A-060A-A.

**M. Publications affected**

Airplane Flight Manual (AFM).

Aircraft Maintenance Manual (AMM).

Illustrated Parts Data (IPD).

**N. Interchangeability of parts**

One-way interchangeable.

Pre-Service Bulletin parts must not be installed on post-Service Bulletin aircraft.

**2. Material information****A. Material - Price and availability**

Operators that require additional information and/or Service Bulletin material can contact their authorized Pilatus Service Center, or Pilatus Customer Support on <https://www.pilatus-aircraft.com> → contact us.

**NOTE:** Part numbers given in this Service Bulletin are correct at the time of approval. Pilatus Aircraft Ltd reserves the right to change the part numbers as necessary. Part numbers of items delivered are correct when dispatched. This could lead to differences between those part numbers quoted in this Service Bulletin and the delivered parts, if parts are superseded. Operators are requested to check the Illustrated Parts Data (IPD) for delivered parts that differ from those listed in the Service Bulletin Materials List.

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

**B. Warranty**

Credit for parts and labour will be issued for all affected aircraft on approval of a warranty claim, provided the work is accomplished by an authorized Service Center within the compliance time given in Section 1.E on Page 1 of this Service Bulletin.

**C. Material necessary for each aircraft****(1) Material to order from Pilatus**

<b>Modification kit number</b>	<b>Price</b>	<b>Availability</b>
500.50.24.167	Contact as above	Approximately 2 weeks

Modification Kit P/N 500.50.24.167

New part No.	Description	Old part No.	Qty	Disp. code	Fig	Item
527.20.24.040 (See NOTE below)	Bolt, Threaded	-	2	N	1	15
		527.20.24.489	2	D		10
527.20.24.039 (See NOTE below)	Tube, Rod	-	2	N	1	14
		527.20.24.488	2	D		9
527.20.24.042	Nut, Hex, RH, CRES, PASS, 6.4*7.0	-	2	N	1	16
		938.02.27.202	2	D		11

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

**NOTE:** When ordering parts, Service Centers are requested to indicate the required by date on the purchase order.

**NOTE:** Please indicate the Aircraft MSN(s) on the purchase order for which the parts are ordered.

**NOTE:** The new part number has a lower running order than the old part number.

## (2) Locally supplied materials

To identify the materials used in this procedure, look in the Consumable materials list. Refer to AMM PC24-A-A00-50-0000-00A-070A-A.

Material No.	Description	Qty	Remarks
P01-033	Wipes, presaturated solvent	AR	-
P02-007	Lockwire	AR	Diameter 0.025 in (0,6 mm)
P04-041	Grease	AR	-
P07-038	Topcoat, clear-gloss polyurethane	AR	-
P08-106	Sealant, interfay	AR	MC-780 C-1/3 / C-2 / C-4 / C-8 / C-12 / C-24 / C-48 / C-60

**NOTE:** Also refer to any referenced AMM procedures, if applicable.

### D. Material necessary for each spare

Not applicable.

**E. Re-identified parts**

New Part No.	Description	Old Part No.
P/N 527.20.24.069	Control Rod, Rudder-Trim, Short	P/N 527.20.24.464

**NOTE:** The S/N of the old assembly is transferred to the new assembly.

**F. Tools and equipment**

To identify the tools and equipment (where a TEM Tool No. is given), look in the product support equipment, tools and software list. Refer to TEM PC24-A-A00-00-0000-00A-060A-A.

<b>Tools and equipment</b>	<b>Recommended Pilatus part</b>
'DO NOT CONNECT ELECTRICAL POWER' sign	Local supply
Flight control rigging tool kit (TEM Tool No. T27-003)	P/N 513.27.24.171
Permanent marker pen	Local supply
Tape	Local supply
Tool kit, mechanic	Local supply
Yaw/Roll/Pitch trim control box	Local supply

**NOTE:** Also refer to any referenced AMM procedures, if applicable.

**3. Accomplishment instructions**

**WARNING:** BE CAREFUL WHEN YOU DO WORK ON THE ELECTRICAL SYSTEM OR A SYSTEM THAT USES ELECTRICAL POWER. MAKE SURE THAT IT IS SAFE BEFORE YOU APPLY ELECTRICAL POWER TO THE AIRCRAFT OR ENERGIZE THE AIRCRAFT ELECTRICAL SYSTEMS. ELECTRICAL POWER CAN CAUSE DEATH OR INJURY TO PERSONNEL AND/OR DAMAGE TO EQUIPMENT.

**WARNING:** BE CAREFUL WHEN YOU USE THE CONSUMABLE MATERIALS. OBEY THE MANUFACTURER'S HEALTH AND SAFETY INSTRUCTIONS AND ALL THE APPLICABLE LOCAL INSTRUCTIONS. CONSUMABLE MATERIALS CAN BE DANGEROUS AND CAN CAUSE DEATH OR INJURY TO PERSONNEL AND/OR DAMAGE TO EQUIPMENT.

**NOTE:** Refer to the manufacturer's instructions for the necessary time for consumable materials to cure/dry.

**NOTE:** For all torque related information necessary for this procedure, refer to AMM PC24-A-E20-20-0001-00A-040A-A.

**A. Preparation**

- (1) Obey the safe maintenance practices as necessary. Refer to AMM PC24-A-E20-10-0003-00A-913A-A.
- (2) Make sure that no other work is in progress on the aircraft.
- (3) Make sure that the aircraft is in safe maintenance mode. Refer to AMM PC24-A-E20-10-0003-01A-913A-A.
- (4) De-energize the aircraft electrical system. Refer to AMM PC24-A-E24-00-0000-00A-913A-A.
- (5) Put a '**DO NOT CONNECT ELECTRICAL POWER**' sign on the:
  - Overhead control panel
  - External power connection.

**B. Modification**

- (1) Do the rudder-trim actuator remove procedure to remove and keep the upper and lower short rudder-trim control rods (9). Refer to AMM PC24-A-E27-20-0006-00A-520A-A and Figure 1.
- (2) Record the serial numbers and installation position of the upper and lower short rudder-trim control rod assemblies.
- (3) Measure and record the full length (Dimension X) of the upper and lower short rudder-trim control rods (9) that you kept. Refer to Figure 1, PRE-SB 27-010, Section A-A.

- (4) Modify the upper and lower short rudder-trim control rods as follows. Refer to Figure 1:

**NOTE:** The procedure to modify the upper and lower short rudder-trim control rods is the same.

- (a) Remove and keep the locking washer (12) and the tab washer (13) from the threaded bolt (10).
- (b) Remove and discard the lock wire from the two lock nuts (2) and (6) and the two tab washers (4) and (8).
- (c) Loosen the two lock nuts (2) and (6).
- (d) Remove and keep the eye-end (1), the lock nut (2), the locking washer (3) and the tab washer (4) from the vernier sleeve (5).
- (e) Remove and keep the vernier sleeve (5), the lock nut (6), the locking washer (7) and the tab washer (8) from the short rudder-trim control rod (9).
- (f) Discard the short rudder-trim control rod (9), together with the threaded bolt (10) and the lock nut (11).
- (g) Use wipes, presaturated solvent (Material No. P01-033) to clean the items that follow (that you kept):
  - Eye-end (1)
  - Two lock nuts (2) and (6)
  - Three locking washers (3), (7), and (12)
  - Three tab washers (4), (8), and (13)
  - Vernier sleeve (5).
- (h) Let the solvent dry.
- (i) Inspect the items that follow for damage, cracks, and corrosion. Refer to AMM PC24-A-E20-40-0000-00A-913A-A:
  - Eye-end (1)
  - Two lock nuts (2) and (6)
  - Three locking washers (3), (7), and (12)
  - Three tab washers (4), (8), and (13)
  - Vernier sleeve (5).
- (j) If you find damage, cracks, and corrosion, replace the items above as necessary.
- (k) Apply a thick layer of interfay sealant (Material No. P08-106) to the mating threads and mating surfaces of the new threaded bolt (P/N 527.20.24.040) (15) and the new short rudder-trim control rod (P/N 527.20.24.039) (14). Refer to Figure 1, POST-SB 27-010.
- (l) Install the threaded bolt (15) in the short rudder-trim control rod (14).

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- (m) Torque the threaded bolt (15) to between 66 and 75 lbf in (7.5 and 8.5 Nm) plus the run down torque.
- (n) Make sure that excess sealant can be seen around the mating surfaces of the threaded bolt (15) and the short rudder-trim control rod (14).
- (o) Use wipes, presaturated solvent (Material No. P01-033) to remove unwanted sealant.
- (p) Let the sealant cure.
- (q) Use lockwire (Material No. P02-007) to safety the threaded bolt (15) in the short rudder-trim control rod (14).
- (r) Apply a thin layer of grease (Material No. P04-041) to the threads of the items that follow:
  - Eye-end (1)
  - Two lock nuts (2) and (6)
  - Vernier sleeve (5).
- (s) Loosely install the tab washer (4), the locking washer (3), the lock nut (2), and the eye-end (1) in the vernier sleeve (5).
- (t) Measure dimension Y between the FWD end of the vernier sleeve (5) and the aft end of the eye-end (1). Refer to Figure 1, POST-SB 27-010, Section B-B.
- (u) Adjust the eye-end (1) in the vernier sleeve (5) to make sure that dimension Y is 3.22 in (81.7 mm).
- (v) Tighten the lock nut (2) by hand.
- (w) Loosely install the tab washer (8), the locking washer (7), the lock nut (6), and the vernier sleeve (5) in the short rudder-trim control rod (14).
- (x) Turn the vernier sleeve (5) and the eye-end (1) in the short rudder-trim control rod (14) to set the length of the short rudder-trim control rod (14) to the recorded value (Dimension X). Refer to Figure 1, POST-SB 27-010, Section B-B.

**NOTE:** Final adjustment of the rods will be done when the rudder-trim actuator is installed. Dimension X is set at this time to make the installation of the actuator easier.
- (y) Tighten the lock nut (6) by hand.
- (z) Make sure that the two tab washers (4) and (8) point to the right when looking in the direction of flight. This will make installation of the control rods easier.
- (aa) Make sure that you can see the threads of the eye-end (1) in the witness hole of the vernier sleeve (5).
- (ab) Make sure that you can see the threads of the vernier sleeve (5) in the witness holes of the short rudder-trim control rod (14).

- (ac) Apply a thin layer of grease (Material No. P04-041) to the threads of the new lock nut (P/N 527.20.24.042) (16).
  - (ad) Loosely install the new lock nut (16) the locking washer (12), and the tab washer (13) (that you kept) on the threaded bolt (15).
  - (ae) Do the above procedure again, Steps (4) (a) thru (4) (ad) for the other short rudder-trim control rod (9).
- (5) Re-identify the two new short rudder-trim control rod assemblies (14):
- (a) Clean the areas where the new short rudder-trim control rod assemblies (14) will be re-identified with the new P/N and old S/N. Use wipes, presaturated solvent (Material No. P01-033).
  - (b) Let the solvent dry.
  - (c) Use a permanent marker pen and re-identify the new short rudder-trim control rod assemblies (14) with:
    - New part number P/N 527.20.24.069
    - The same serial number from the short rudder-trim control rod assemblies (9) that you recorded in step B.(2)
    - SB 27-010 at the end of the serial number.
  - (d) Apply a layer of topcoat (Material No. P07-038) to protect the re-identification areas.
  - (e) Let the topcoat dry.
- (6) Prepare the rudder trim actuator and the short rudder-trim control rod assemblies for installation, as follows. Refer to Figure 2:
- (a) Install the rudder-trim actuator (1) in the trim actuator adjusting-jig from the flight control rigging tool kit (TEM. No. T27-003).
  - (b) Make sure that the length of the two rams (4) are in the mid-stroke position. The mid-stroke position is when the dimension A is  $5.76 \pm 0.02$  in ( $146.4 \pm 0.5$  mm). If necessary, adjust the length of the two rams (4) as follows:
    - 1 Connect the Yaw/Roll/Pitch trim control box to the rudder-trim actuator (1).
    - 2 Set the two rudder trim actuator-rams (4) to the mid-stroke position.
    - 3 Disconnect the Yaw/Roll/Pitch trim control box from the rudder-trim actuator (1).
  - (c) Remove the rudder-trim actuator (1) from the trim actuator adjusting-jig.
  - (d) Connect the upper / lower short rudder-trim control rods (2) and (3) to the two rams (4) of the rudder-trim actuator (1) as follows:

**NOTE:** The procedure to connect the upper/lower control rods to the upper/lower ram is the same.

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- 1 Apply a thin layer of grease (Material No. P04-041) to the thread of the short rudder-trim control rod.
- 2 Put the short rudder trim control rod in position on the ram (4) of the rudder-trim actuator (1).
  - Upper rod (2) on upper ram (4)
  - Lower rod (3) on lower ram (4).
- 3 Make sure that the tab washer (5) and the lock washer (6) are fully disengaged.
- 4 Make sure that the position of the lock nut (7) on the short rudder-trim control rod gives sufficient travel to adjust the push rod.
- 5 Turn the short rudder trim control rod to adjust the position of the rod in the ram (4).
- 6 Make sure that the dimension B is  $0.54 \pm 0.04$  in ( $13.8 \pm 1$  mm).
- 7 Make sure that the detent (8) is in the horizontal position and the tab washer (9) points to the right, when you look in the direction of flight. Refer to view C.
- 8 Engage the tab washer (5) and the lock washer (6) on the ram (4).
- 9 Make sure that the tab washer (5) points to the right.
- 10 Tighten the lock nut (7) with your hand.
- 11 Make sure that the tab washer (5) and the lock washer (6) are correctly engaged.
- 12 Torque the lock nut (7) to between 66 and 75 in-lb (7.5 to 8.5 Nm).
- 13 Make sure that the dimension B is  $0.54 \pm 0.04$  in ( $13.8 \pm 1$ mm). Refer to Figure 2.
- 14 If the dimension B is not  $0.54 \pm 0.04$  in ( $13.8 \pm 1$ mm), do the steps that follow:
  - i Loosen the lock nut (7).
  - ii Do Step (d).3 thru Step (d).13 again.
- 15 This step is applicable to MSN 128-UP.

Use lockwire (Material No. P02-007) to safety the lock nut (7) to the lock tab washer (5).
- 16 Do the above procedure, steps (5) (d)1 thru (5) (d)16 again to connect the other short rudder-trim control rod to the other ram (4) of the rudder trim actuator (1).

- (e) Aircraft MSN 101 thru MSN 127 do the steps that follow. Refer to Figure 2:
- 1 Record the position of the two lock nuts (7) on the upper and lower short rudder-trim control rods (2) and (3).
  - 2 Loosen the two lock nuts (7) on the upper and lower short rudder-trim control rods (2) and (3) by one turn.
  - 3 If necessary hold the two lock nuts (7) in position with tape.
  - 4 Remove the upper and lower short rudder-trim control rods (2) and (3) from the rudder trim actuator (1).
- (7) Do the rudder trim actuator install procedure. Refer to AMM PC24-A-E27-20-0006-00A-720A-A and Figure 1.

**NOTE:** It is not necessary to do the setup of the short rudder-trim control rods when you do the above referenced procedure. This was done in the previous step.

**C. Test**

- (1) Remove the '**DO NOT CONNECT ELECTRICAL POWER**' sign from the:
  - Overhead control panel
  - External power connection.
- (2) Connect a Ground Power Unit (GPU) to the aircraft and:
  - Energize the aircraft electrical system
  - Make sure that the GPU supplies power to the aircraft.

Refer to AMM PC24-A-E24-00-0000-00A-913A-A.

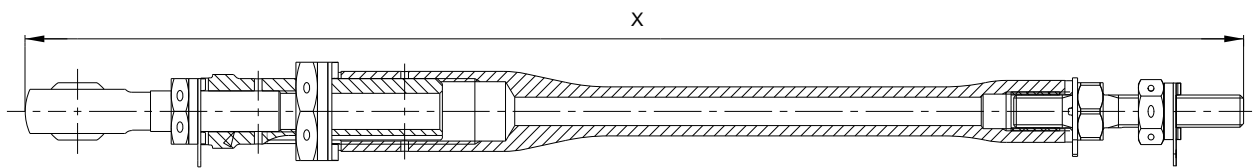
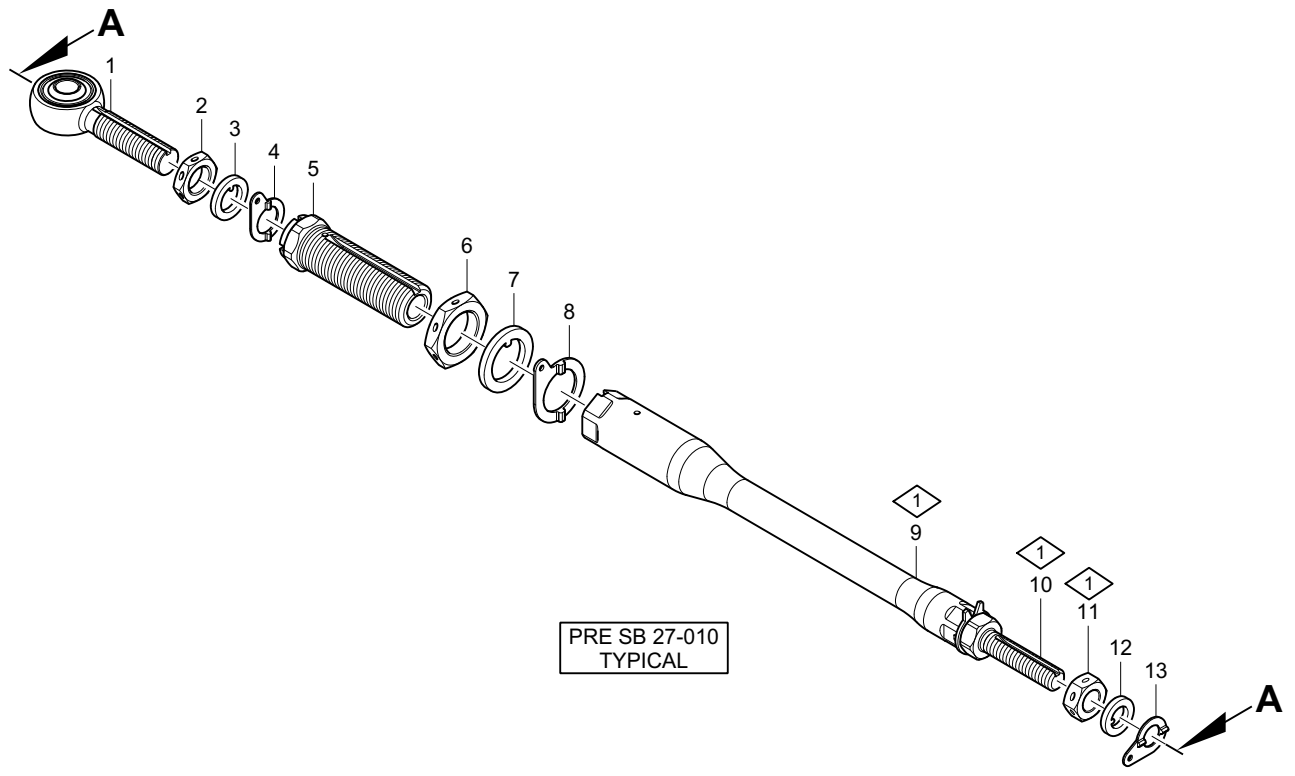
- (3) Set the aircraft to safe maintenance mode. Refer to AMM PC24-A-E20-10-0003-01A-913A-A.
- (4) Make sure you have done the rudder trim operation test. Refer to PC24-A-E27-20-0005-00A-320A-A.
- (5) Make sure you have done the rudder control function test. Refer to PC24-A-E27-20-0000-00A-340A-A.

**D. Requirements after job completion**

- (1) De-energize the aircraft electrical system. Refer to AMM PC24-A-E24-00-0000-00A-913A-A.
- (2) Disconnect the GPU from the aircraft. Refer to AMM PC24-A-E24-00-0000-00A-913A-A.
- (3) Remove all the equipment, tools and materials from the work area. Make sure that the work area is clean.
- (4) Do the Closeup practices. Refer to AMM PC24-A-E20-10-0004-00A-913A-A.

**E. Documentation**

- (1) Make an entry in the Aircraft Logbook to record the accomplishment of this Service Bulletin.
- (2) Make sure that the Aircraft Logbook shows any new Pilatus Part Number(s) and/or Serial Number(s), as applicable.
- (3) Make sure that all applicable Aircraft Documentation is updated.
- (4) Inform CAMP of the incorporation of this Service Bulletin and any new Pilatus Part Number(s) and/or Serial Number(s), as applicable. Send the completed feedback sheet to: [fax@campsystems.com](mailto:fax@campsystems.com)

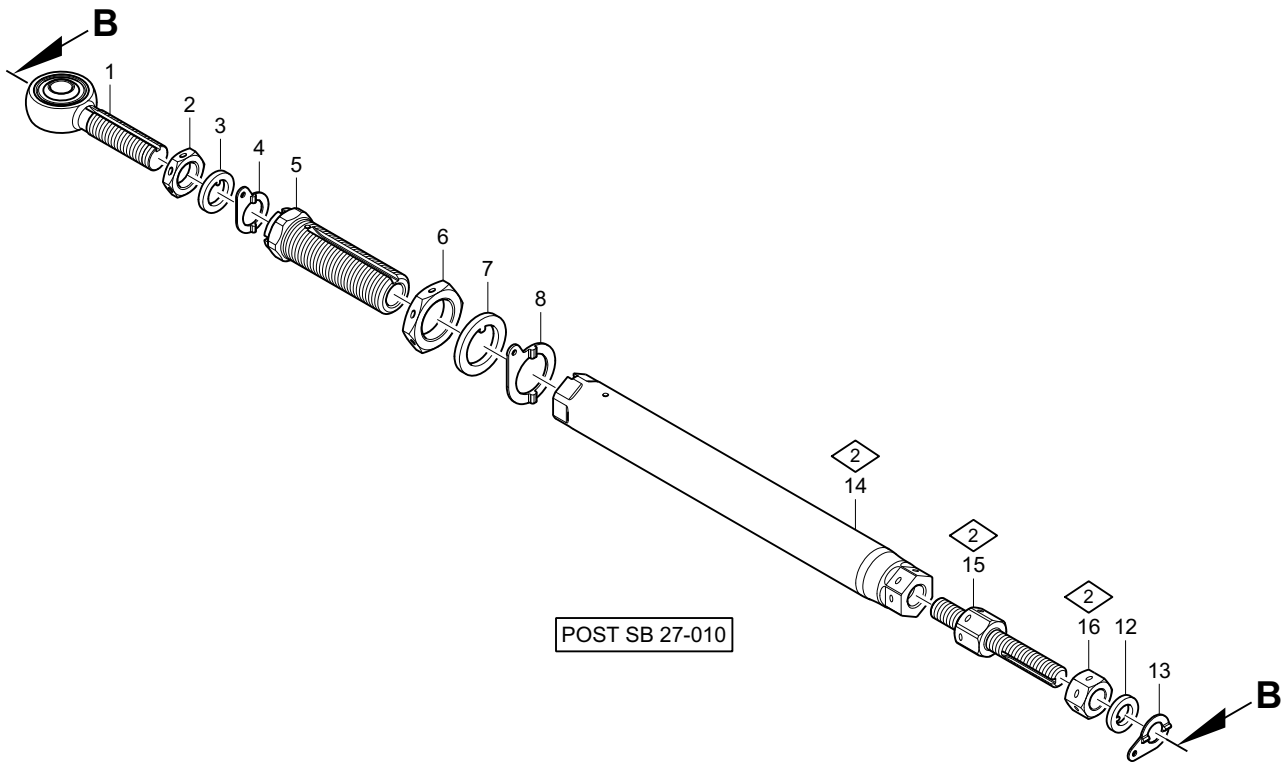


SECTION  
**A-A**

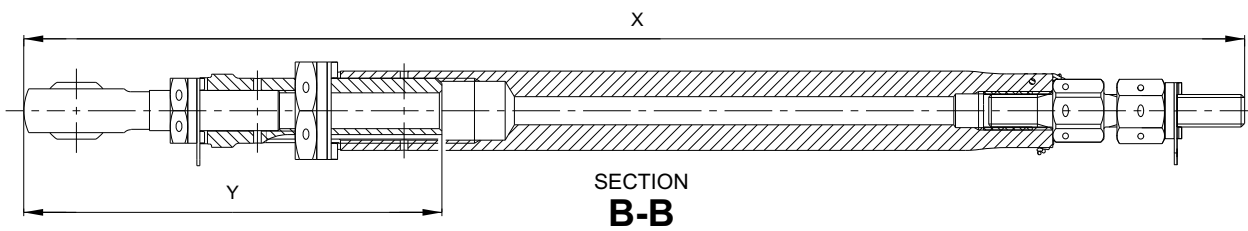
**NOTE:**

◊ 1 DISCARDED

Modification of the rudder-trim short control rods  
Figure 1 (Sheet 1 of 2)



POST SB 27-010

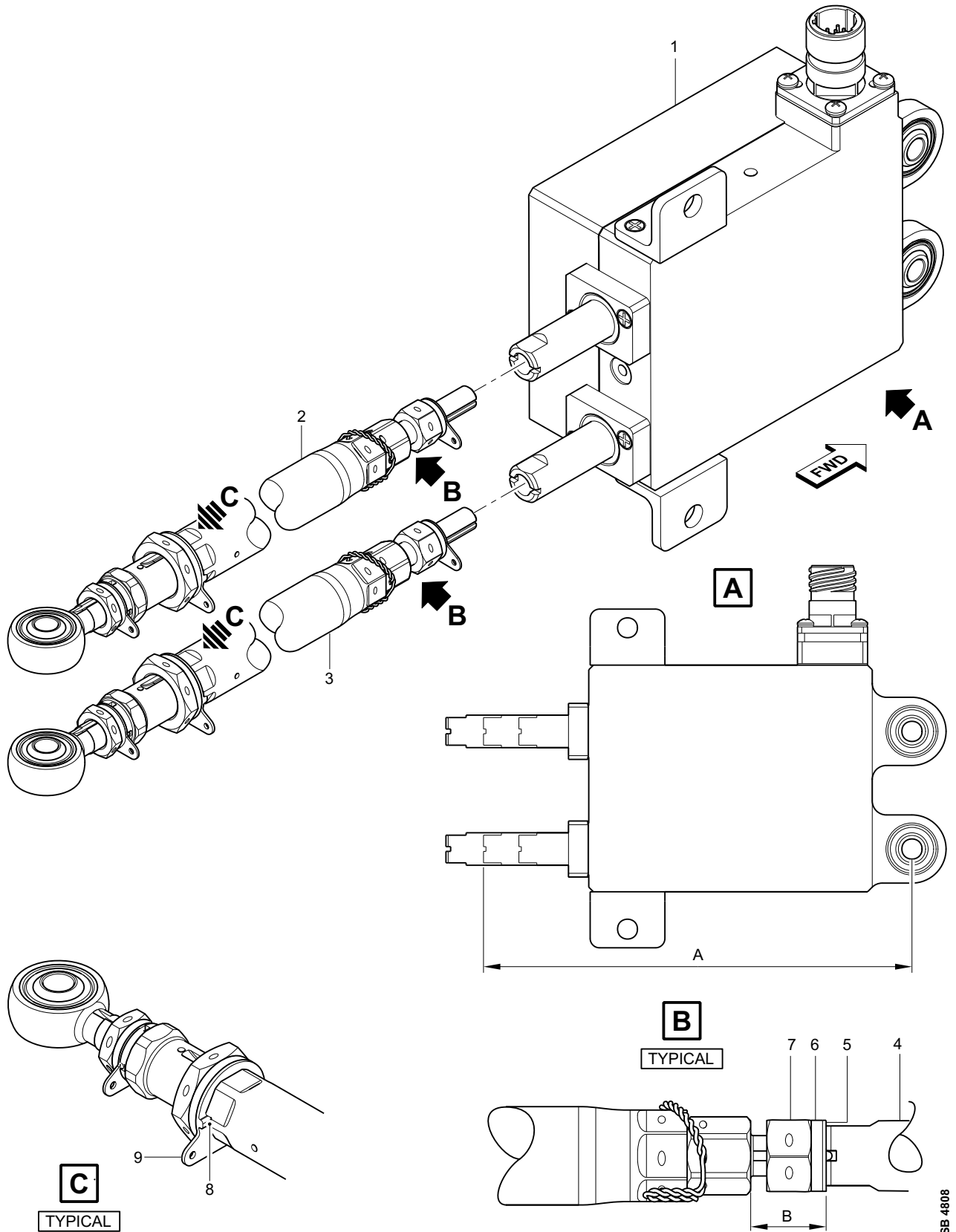


**NOTE:**

 NEW PARTS ( MOD KIT)

Modification of the rudder-trim short control rods  
Figure 1 (Sheet 2 of 2)

SB 4806



Rudder-trim actuator and short control rods - Setup  
Figure 2 (Sheet 1 of 1)

## Feedback Sheet for the Accomplishment of SB 27-010

The purpose of this feedback sheet is to provide CAMP with the current information on each individual PC-24 aircraft. Please complete the grey cells as appropriate using black ink and block letters.

*Print out and send the completed feedback sheet to: [fax@campsystems.com](mailto:fax@campsystems.com)*

Aircraft MSN		Aircraft Registration		Total Airframe Hours	
Service Center				Total Landings	

### SB Accomplishment Information

We have embodied/accomplished this SB	<input type="checkbox"/>	Fully	<input type="checkbox"/>	Partially
<b>The undersigned confirms the accomplishment of this Service Bulletin</b>				
Date of accomplishment	Name		Signature	
Comments (procedure, kit quality, suggested improvements etc.)				