

Service Bulletin No: 27-009**Ref No: 221****ATA Chapter: 27**

**FLIGHT CONTROLS - YAW CONTROL
RUDDER TRIM TAB, SHORT CONTROL RODS - THREADED BOLT REPLACEMENT****1. Planning information****A. Effectivity**

PC-24 aircraft MSN 101 - up with 300 FH or more, with titanium threaded bolts (P/N 527.20.24.489) installed in the rudder trim tab short control rods.

B. Concurrent requirements

None.

C. Reason

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.

D. Description

This Service Bulletin gives the data and instructions necessary to do a replacement of the titanium threaded bolts (P/N 527.20.24.489) of the rudder trim tab short control rods. Instructions are also provided to do a precautionary inspection of the rudder counterbalance arm and the other elements of the rudder trim tab installation.

E. Compliance

Mandatory.

The replacement of the threaded bolts must be done within 25 FH, from the issue date of this Service Bulletin, and thereafter every 300 FH until a subsequent Service Bulletin to replace the threaded bolts with steel bolts is accomplished.

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

© Pilatus Aircraft Ltd. This document contains proprietary information that is protected by copyright. All rights are reserved. No part of this document may be copied, reproduced or translated to other languages without the prior written consent of Pilatus Aircraft Ltd.

In connection with the use of this document, Pilatus does not provide any express or implied warranties and expressly disclaims any warranty of merchantability or fitness for a particular purpose. This document contains trade secrets, confidential and/or proprietary information of Pilatus and technical data subject to export control laws and regulations, including the U.S. Export Administration Regulations (EAR). Disclosure or distribution of this document contrary to the EAR, and other laws and regulations, is strictly forbidden. The above restrictions may apply to data on all pages of this document.

H. Manpower

Description	Man-Hours
Preparation	0.5
Replacement	7.5
Inspection	1.0
Requirements after job completion	0.5
TOTAL MAN-HOURS	9.5

I. Weight and balance

Not changed.

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-040A-A
PC24-A-E24-00-0000-00A-913A-A	PC24-A-E27-00-0000-00A-012A-A
PC24-A-E27-20-0000-00A-340A-A	PC24-A-E27-20-0005-00A-310A-A
PC24-A-E27-20-0005-00A-369A-A	PC24-A-E27-20-0006-00A-520A-A
PC24-A-E27-20-0006-00A-720A-A	PC24-A-E53-10-0003-00A-520A-A
PC24-A-E53-10-0003-00A-720A-A	

Tools and Equipment Manual (TEM):

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

M. Publications affected

Not applicable.

N. Interchangeability of parts

Not applicable.

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) Additional material to procure

New part No.	Description	Old part No.	Qty	Disp. code	Fig	Item
940.17.02.502	Cotter pin, MON, 1.6*19.1 MS24665-191	-	4	N	-	-
938.83.12.001	Washer, Lock, CRES, PASS, 6.4*1.0/W8031/.2500	-	2	N	1	2
		-	2	D	-	-
527.20.24.489	Threaded bolt	-	2	N	1	3
		-	2	R	-	-

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

NOTE: Refer to the referenced AMM installation procedures.

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

(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	-
P04-041	Grease	AR	-

NOTE: Refer to the referenced AMM procedures, as applicable.

D. Material necessary for each spare

Not applicable.

E. Re-identified parts

Not applicable.

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.

Tools and equipment	Recommended Pilatus part
Flight control rigging tool kit (TEM Tool No. T27-003)	P/N 513.27.24.171
Rudder trim-tab free-play, measuring tool kit (TEM Tool No. T27-008)	P/N 513.27.24.910
Tool kit, mechanic	Local supply
'DO NOT CONNECT ELECTRICAL POWER' sign	Local supply
'DO NOT OPERATE THE PRIMARY FLIGHT CONTROLS AND TRIMS' sign	Local supply
Mirror	Local supply
Torch (Flashlight)	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 and PC24-A-E27-00-0000-00A-012A-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.
- (6) Put a '**DO NOT OPERATE THE PRIMARY FLIGHT CONTROLS AND TRIMS**' sign in the cockpit.

B. Replacement

- (1) Do the rudder trim mechanism - visual examination procedure. Refer to AMM PC24-A-E27-20-0005-00A-310A-A.
- (2) When you do the above referenced AMM procedure, make sure that you record the results of the rudder trim tab freeplay check on the Pilatus feedback sheet.
- (3) Do the rudder trim actuator remove procedure. Refer to AMM PC24-A-E27-20-0006-00A-520A-A and Figure 1.

NOTE: When you do the above referenced AMM procedure, make sure that the two rudder-trim-tab short control-rods (1) are removed (and kept) from the rudder trim actuator.

- (a) When you do the above referenced AMM procedure, make a record on the Pilatus feedback sheet if the upper aft bellcrank bolt (4) could easily be removed by hand.

NOTE: When the upper aft bellcrank bolt (4) is removed residual tension in the system will be lost.

- (b) When you do the above referenced AMM procedure, remove the lower aft bellcrank bolt (6) from the lower bellcrank.
- (c) Do a visual inspection of the four bellcrank bolts (4), (5), (6), and (7) for damage and fretting.
- (d) Return bellcrank bolts with damage to Pilatus Aircraft Ltd.
- (e) Record the position that bolts with damage were removed from.
- (f) Record the visual inspection results on the Pilatus feedback sheet.
- (4) Remove the two threaded bolts (3) and the two lock washers (2) from the two rudder-trim-tab short control-rods (1).
- (5) Discard the two lock washers (2).
- (6) Identify the two threaded bolts (3) that you removed with a fully completed unserviceable label.
- (7) Make sure that you record the position, "upper" or "lower", that the two threaded bolts (3) were removed from.
- (8) Return the two threaded bolts (3) (that you removed) to Pilatus Aircraft Ltd.
- (9) Apply a thick layer of grease (Material No. P04-041) to the threads of the two new threaded bolts (P/N 527.20.24.489) (3).
- (10) Install the two new threaded bolts (3) and the two new lock washers (P/N 938.83.12.001) (2) on the two rudder-trim-tab short control-rods (1) (that you kept).
- (11) Torque the two threaded bolts (3) to between 66 and 75 lbf in (7.5 and 8.5 Nm) plus the run-down torque.
- (12) Safety the threaded bolts (3) with the two lock washers (2).

PC-24

(13) When you do the below referenced AMM procedure, install the lower aft bellcrank bolt (6) in the lower bellcrank first.

(a) Do the rudder trim actuator install procedure. Refer to AMM PC24-A-E27-20-0006-00A-720A-A and Figure 1.

NOTE: When you do the above referenced AMM procedure, make sure that the two rudder-trim-tab short control-rods (1) (that you kept) are installed on the rudder trim actuator.

(14) Make sure that the rudder trim tab freeplay check is in limits. Refer to AMM PC24-AE27-20-0005-00A-369A-A.

(15) Record the results of the freeplay check on the Pilatus feedback sheet.

C. Inspection

(1) Do a visual inspection of the rudder mass balance arm as follows. Refer to Figure 2:

(a) Remove the lower tail cone. Refer to AMM PC24-A-E53-10-0003-00A-520A-A.

(b) Remove the autopilot cable cover (1) as follows:

NOTE: This step is applicable to MSN 101 thru MSN 211.

1 Remove (and keep) the four screws (3) and the four washers (2) from the autopilot cable cover (1).

2 Remove (and keep) the autopilot cable cover (1) from the aircraft.

(c) Use wipes, pre-saturated solvent (Material No. P01-033) to clean the rudder mass balance arm (4).

(d) Use a mirror and a torch (flashlight) as necessary to do a visual inspection of the rudder mass balance arm (4), the identification placard (5), and the four rivets (6) for:

- Correct attachment
- Damage
- Cracks
- Deformation
- Surface finish
- Corrosion. Refer to AMM PC24-A-E20-40-0000-00A-040A-A.

(e) If damage is found on the rudder mass balance arm, contact Pilatus Aircraft Ltd before the next flight.

(f) Record the results of the visual inspection on the Pilatus feedback sheet.

(g) Remove all the equipment, tools and materials from the work area. Make sure that the work area is clean.

- (h) Install the autopilot cable cover (1) as follows:

NOTE: This step is applicable to MSN 101 thru MSN 211.

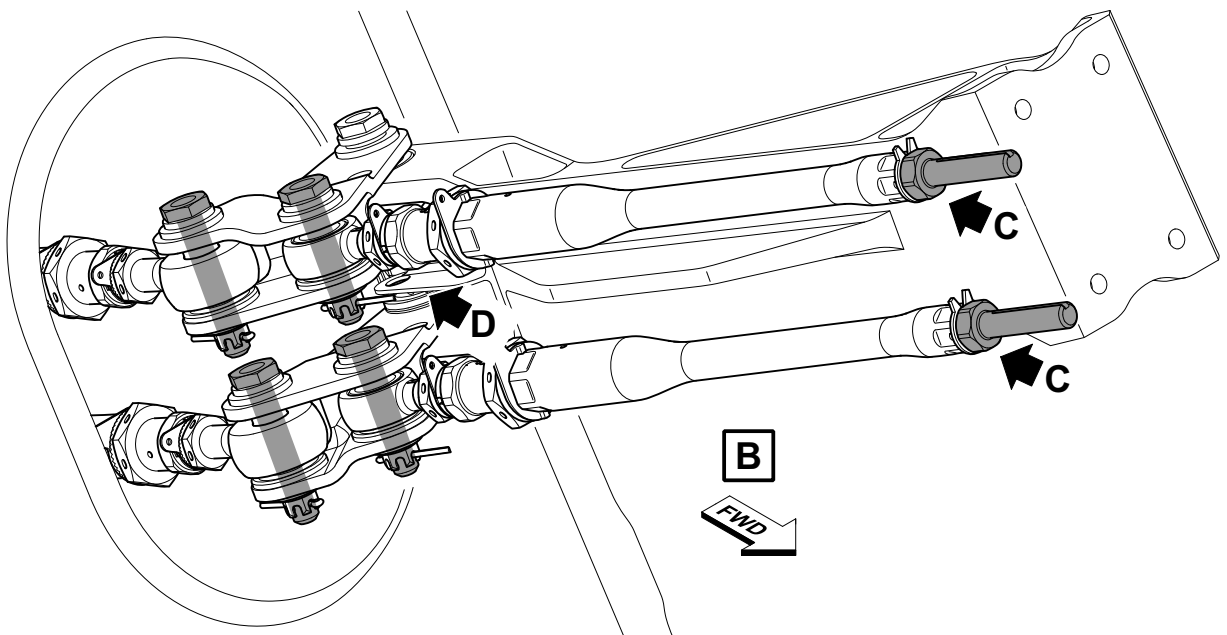
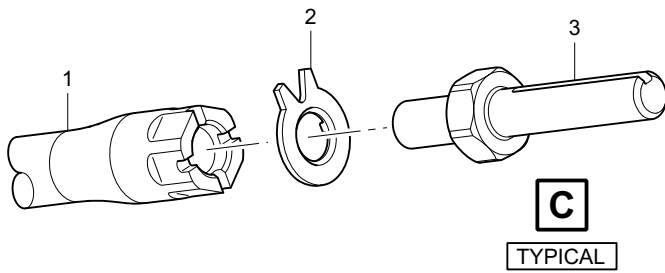
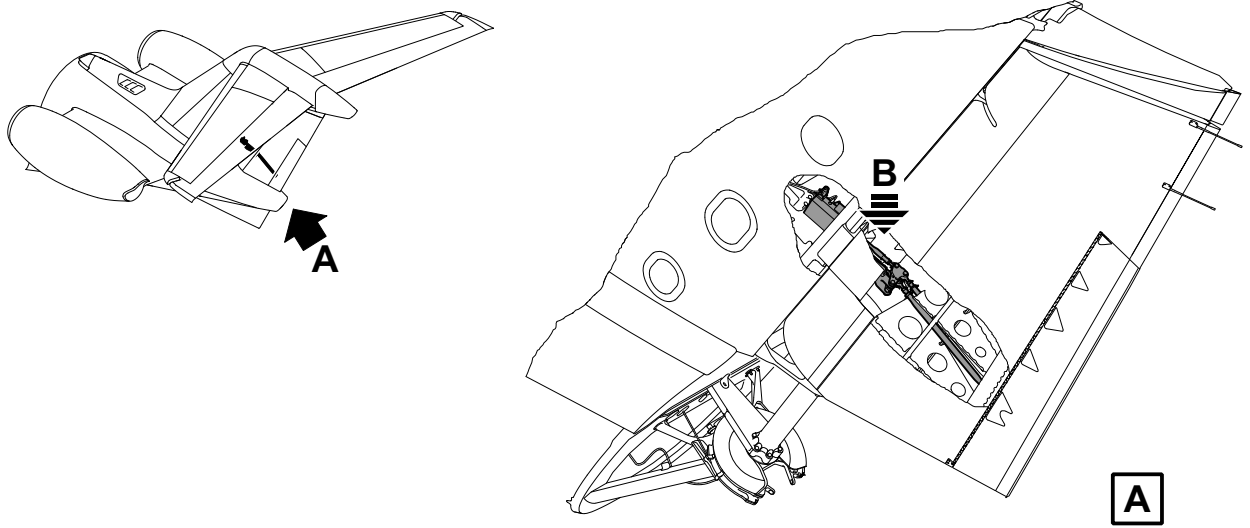
- 1 Put the autopilot cable cover (1) (that you kept), in position in the aircraft.
 - 2 Install the autopilot cable cover (1) with the four screws (3) and the four washers (2) (that you kept).
- (i) Install the lower tail cone. Refer to AMM PC24-A-E53-10-0003-00A-720A-A.
- (j) Do the Rudder control system - Function test, Rudder travel and smoothness check - trim neutral. Refer to AMM PC24-A-E27-20-0000-00A-340A-A.

D. Requirements after job completion

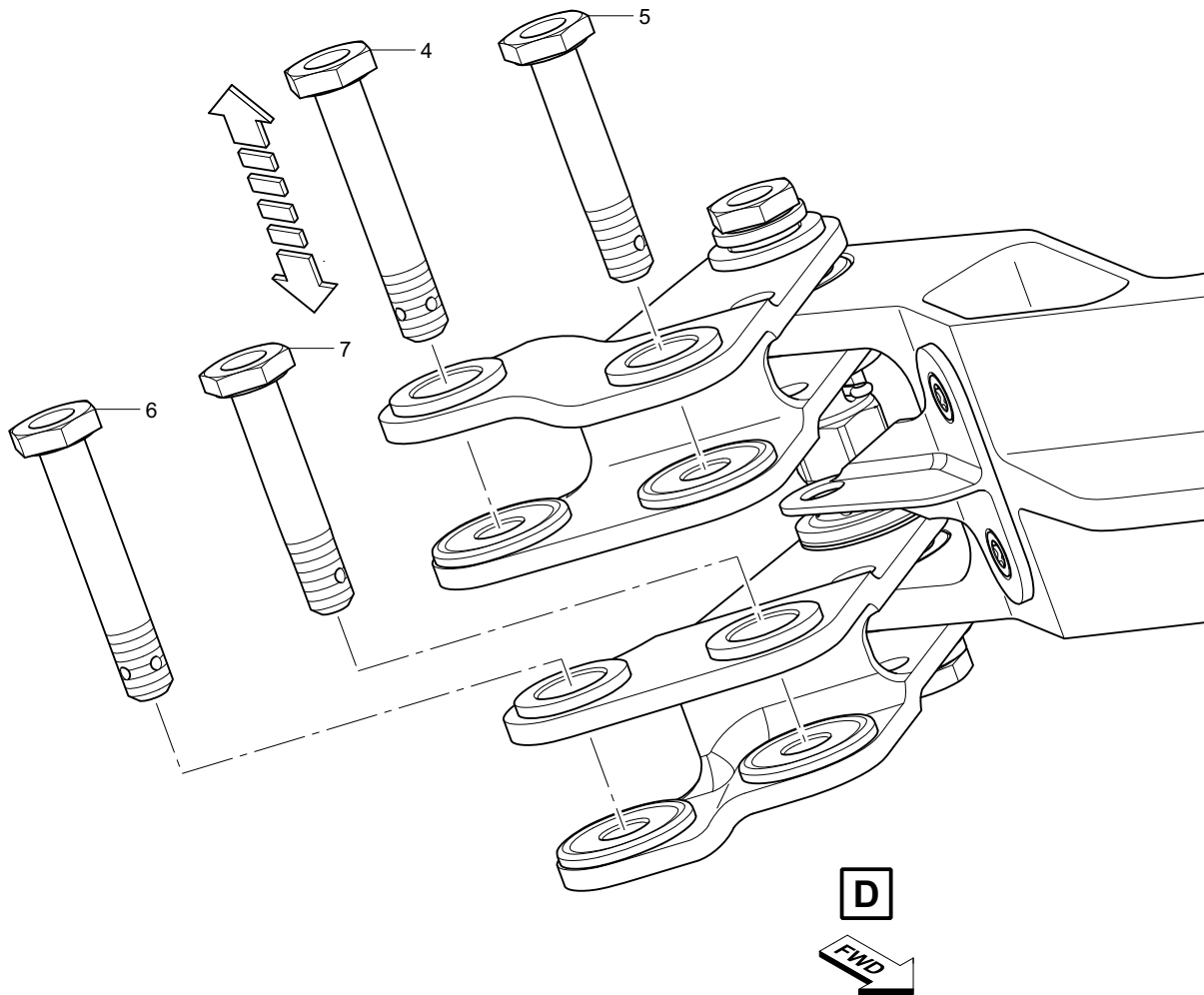
- (1) Remove the "**DO NOT CONNECT ELECTRICAL POWER**" sign from the:
 - Overhead control panel
 - External power connection.
- (2) Remove the "**DO NOT OPERATE THE PRIMARY FLIGHT CONTROLS AND TRIMS**" sign from the cockpit.
- (3) Do the Closeup practices. Refer to AMM PC24-A-E20-10-0004-00A-913A-A.
- (4) Contact Pilatus aircraft Ltd within 300FH of the accomplishment of this Service Bulletin.

E. Documentation

- (1) Make an entry in the Aircraft Logbook to record the accomplishment and the flying hours at the time of accomplishment of this Service Bulletin.
- (2) If this Service Bulletin is repeated, make an additional entry in the Aircraft Logbook.
- (3) Make sure that all applicable Aircraft Documentation is updated.
- (4) Send the completed Pilatus feedback sheet with the serial number of the aircraft to Pilatus Aircraft Ltd Technical Support email: techsupport.ch@pilatus-aircraft.com
- (5) 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

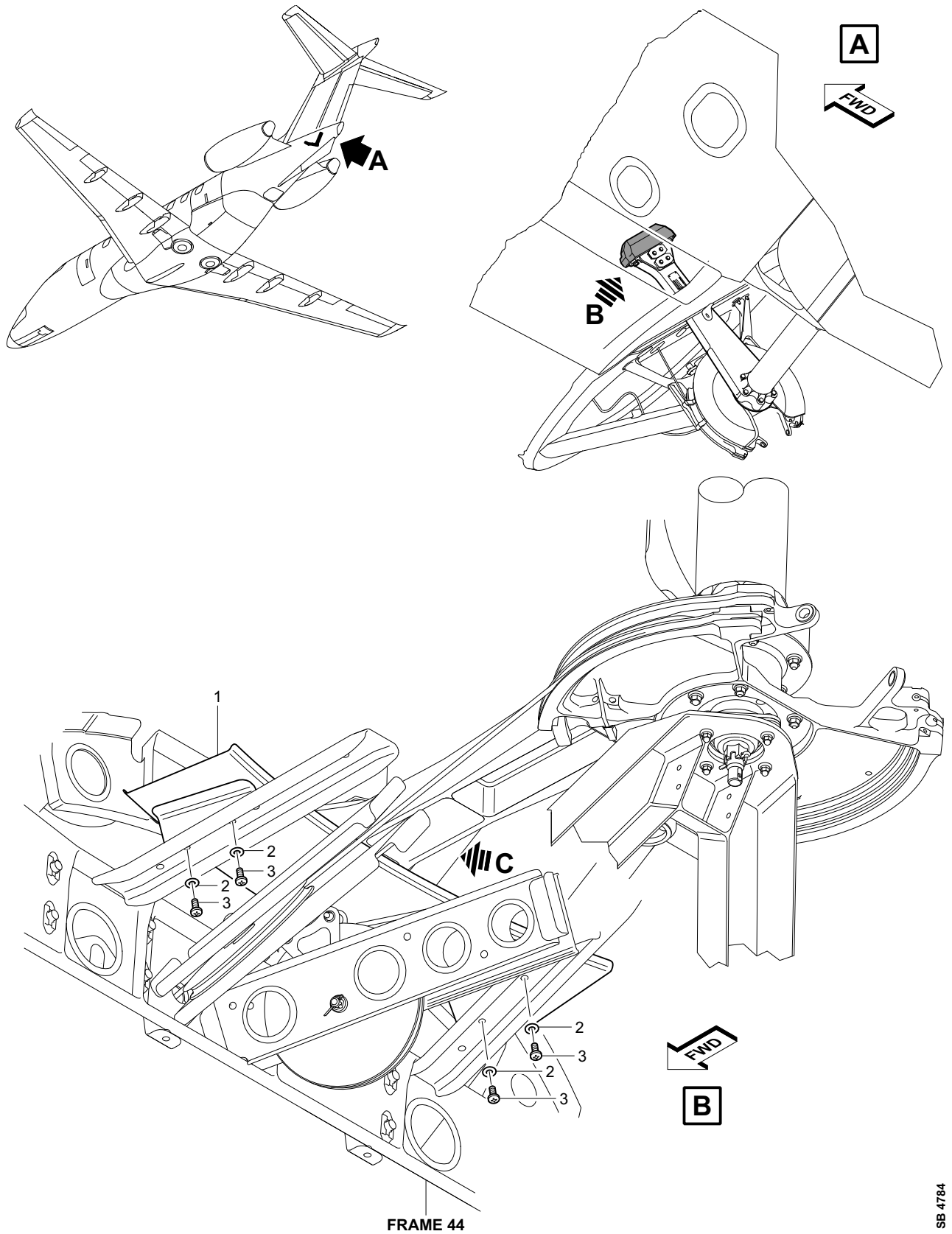


Rudder trim actuator control rods - Inspection
Figure 1 (Sheet 1 of 2)

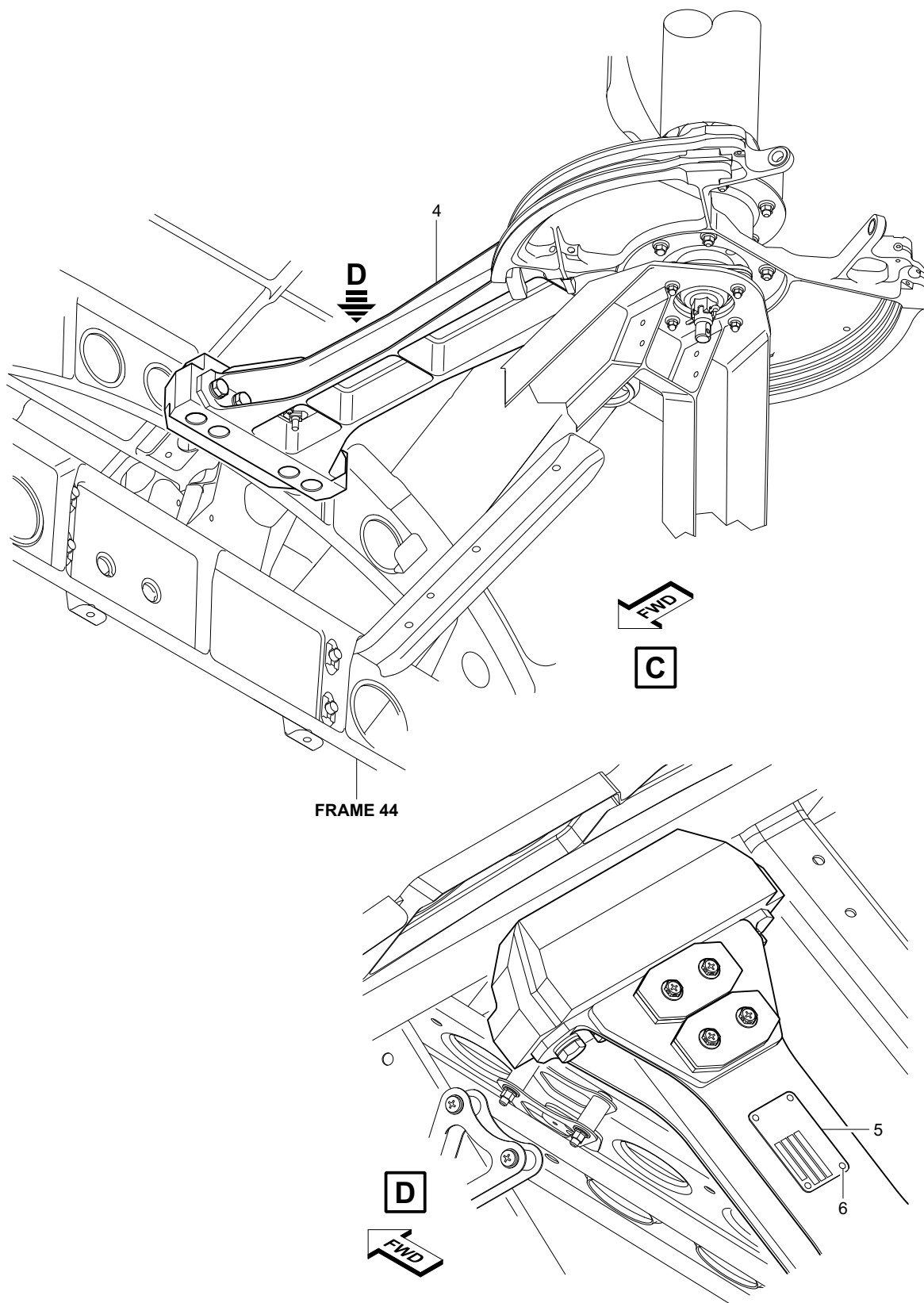


Rudder trim actuator control rods - Inspection
Figure 1 (Sheet 2 of 2)

SB 4786



Inspection of the rudder mass balance arm
Figure 2 (Sheet 1 of 2)



Inspection of the rudder mass balance arm
Figure 2 (Sheet 2 of 2)

SB 4785

Feedback Sheet for the Accomplishment of SB 27-009

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

Aircraft MSN		Aircraft Registration		Total Airframe Hours	
Service Center				Total Landings	

SB Accomplishment Information

The undersigned confirms the accomplishment of this Service Bulletin		
Date of accomplishment	Name	Signature
<p>Comments (procedure, suggested improvements etc.)</p>		

CAMP Feedback Sheet

Feedback Sheet for the Accomplishment of SB 27-009

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

Send the completed feedback sheet to Pilatus Aircraft Ltd Technical Support email: techsupport.ch@pilatus-aircraft.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	<input type="checkbox"/>
The undersigned confirms the accomplishment of this Service Bulletin					
Date of accomplishment	Name		Signature		
Comments (procedure, kit quality, suggested improvements etc.)					

Feedback sheet cont'd on next page for inspection results

Feedback sheet cont'd

Rudder trim system visual inspection, findings, detail area/part and type of damage found.

Initial rudder trim tab freeplay check, findings, pass/fail initial check, results.			
Pass	<input type="checkbox"/>	Fail	Findings:

Control rod bellcrank bolts removal, can the bolts be removed without force.	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Comments (damage/fretting on bolts)				

Post install, rudder trim tab freeplay check, findings, pass/fail check, results.			
Pass	<input type="checkbox"/>	Fail	Findings:

Rudder mass balance arm inspection, findings, detail area/part and type of damage found.

INTENTIONALLY BLANK