

Service Bulletin No: 27-022

Ref No: 334

Modification No: -

ATA Chapter: 27

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**FLIGHT CONTROLS - AILERON CONTROL SYSTEM  
REPLACEMENT OF THE UNIVERSAL JOINTS IN THE FLIGHT CONTROLS****1. Planning Information****A. Effectivity**

PC-12/47E aircraft MSN 1447 thru 1450, 1461, 1462, 1466 thru 1514, 1516 thru 1520 and 1523.

PC-12 Series aircraft where the universal joints (P/N 944.61.73.012 or 527.10.12.195), purchased from March 2014 to, and including, February 2015 were installed as replacement parts.

PC-12 Series aircraft modified with the inspection kit (P/N 500.50.12.314) for the aileron control system, purchased from March 2014 to, and including, February 2015.

Universal joints (P/N 944.61.73.012 or 527.10.12.195) held as spares purchased from March 2014 to, and including, February 2015.

Inspection kits (P/N 500.50.12.314) held as spares purchased from March 2014 to, and including, February 2015.

**NOTE:** The inspection kit (P/N 500.50.12.314) is used for:

- SB 04-009 (Airworthiness Limitations - Life Extension to 25,000 flying hours or 30,000 landings)
- SSID Task 27-10/394 (Aileron Control System – Examine).  
This task is performed initially at 32,500 flying hours or 42,000 landings, whichever comes first, and every 12,500 flying hours or 15,000 landings or 6 years whichever comes first.

**B. Concurrent Requirements**

None.

**C. Reason**

A universal joint installed between the control tube assembly and the control column malfunctioned.

**D. Solution**

Replace the universal joints, as defined in 1. A., with new parts ordered from Pilatus.

**E. Description**

This Service Bulletin gives the data and instructions necessary to replace the universal joints (P/N 527.10.12.195):

- Part A is for on-aircraft
- Part B is for parts held as spare.

**F. Compliance**

Mandatory.

For aircraft with less than 200 flights since new or less than 200 flights since the installation of a spare part as defined in 1. A.:

- No more than 10 flights or
- 3 months from the issue date of this Service Bulletin.

For aircraft with more than 200 flights since new or more than 200 flights since the installation of a spare part as defined in 1. A.:

- No later than 1 year after the issue date of this Service Bulletin. This Service Bulletin can be performed at annual inspection.

**G. Approval**

The technical content of this document is approved under the authority of DOA No. 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.

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**I. Manpower**

<b>Task</b>	<b>Man-hours</b>	<b>Man-hours At Annual Inspection</b>
Preparation	1.0	0.0
Modification	1.0	1.0
Close-Up	1.0	0.0
<b>TOTAL MAN-HOURS</b>	<b>3.0</b>	<b>1.0</b>

**J. Weight and Balance**

No change.

**K. Electrical load Data**

No change.

**L. Software**

No change.

**M. References**

Aircraft Maintenance Manual (AMM)

12-B-07-10-00-00A-901A-A    12-B-20-20-01-00A-040A-A    12-B-20-31-00-00A-070A-A  
12-B-24-00-00-00A-901A-A    12-B-25-10-01-00A-920A-A    12-B-27-10-00-00A-903A-A  
12-B-27-30-00-00A-903A-A

**N. Publications Affected**

No change.

**O. Interchangeability of Parts**

Not interchangeable.

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

If you require more information about this modification, please contact us as follows:

PILATUS AIRCRAFT LTD  
CUSTOMER SUPPORT MANAGER  
CH-6371 STANS  
SWITZERLAND

General Aviation:  
Tel: + 41 41 619 3333  
Fax: + 41 41 619 7311  
eMail: SupportPC12@pilatus-aircraft.com

PILATUS BUSINESS AIRCRAFT LTD  
PRODUCT SUPPORT DEPARTMENT  
11755 AIRPORT WAY  
BROOMFIELD, CO 80021  
UNITED STATES OF AMERICA

Tel: +1 303 465 9099  
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PILATUS AUSTRALIA PTY LTD  
17 JAMES SCHOFIELD DRIVE  
ADELAIDE AIRPORT SA 5950  
AUSTRALIA

Tel: +61 8 8238 1600  
Fax: +61 8 8234 4499  
Free Call: +61 1800 PILATUS (745 2887)  
eMail: supportpc12@pilatus.com.au

Operators are requested to advise Pilatus Aircraft Ltd, of the Manufacturer's Serial Number (MSN) and the flying hours of aircraft which are affected by this Service Bulletin.

**B. Warranty**

Credit will be issued for parts and labour for all affected aircraft on approval of a warranty claim, provided the work is accomplished by an authorised Service Center within 12 months of the issue date of this Service Bulletin.

**C. Material Necessary for one Aircraft**

**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. Operators are requested to check the IPC for delivered parts which differ from those listed in the Service Bulletin.

**(1) Parts to be ordered from Pilatus**

<b>New Part No.</b>	<b>Description</b>	<b>Old Part No.</b>	<b>Qty</b>	<b>Disp. Code</b>	<b>Fig</b>	<b>Item</b>
527.10.12.195	Universal joint (New parts are marked with a placard)	527.10.12.195	2	R	1	1,16
932.19.60.814	BOLT, HEX	932.19.60.814	2	D	1	6, 12
938.77.11.115	WASHER, FLAT	938.77.11.115	2	D	1	10, 14
938.07.68.505	NUT, HEX	938.07.68.505	2	D	1	11, 15
932.35.14.016	BOLT, HEX	932.35.14.016	1	D	1	20
932.35.14.012	BOLT, HEX	932.35.14.012	1	D	1	2
938.77.11.112	WASHER, FLAT	938.77.11.112	2	D	1	3, 17
938.07.68.304	NUT, HEX	938.07.68.304	2	D	1	4, 18

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

**D. Operator Supplied Materials (Ref. AMM 12-B-20-31-00-00A-070A-A)**

<b>Material No.</b>	<b>Description</b>	<b>Qty</b>	<b>Remarks</b>
P04-039	Corrosion preventive	AR	

**E. Tooling - Cost and Availability**

None.

**3. Part A: Accomplishment Instructions - On Aircraft****A. Preparation**

- (1) Raise the aircraft on jacks, refer to AMM 12-B-07-10-00-00A-901A-A.
- (2) De-energize the aircraft electrical system, refer to AMM 12-B-24-00-00-00A-901A-A.
- (3) Open and install a safety clip (Circuit breaker hold open) (P/N 110.88.07.065) on the circuit breaker:

A/P SERVO (AVIONICS BUS).

- (4) Put a warning sign in the cockpit: DO NOT MOVE FLYING CONTROLS.
- (5) Remove the crew seats, refer to AMM 12-B-25-10-01-00A-920A-A.

**B. Removal - Pilot Side**

Refer to Figure 1.

**CAUTION:** BE CAREFUL NOT TO DAMAGE THE ADJACENT WIRING LOOM.

- (1) Remove the nut (22) and the bolt (23).
- (2) Remove and discard the nut (15), washer (14) and the bolt (12).
- (3) Remove and discard the nut (18), washer (17) and the bolt (20).
- (4) Move back the control wheel and remove the universal joint (16) (P/N 527.10.12.195) from the control tube assembly (13) and the control column (21).
- (5) Remove the stop block (19) from the universal joint.

**C. Installation - Pilot Side**

Refer to Figure 1.

- (1) Apply corrosion preventive (Material No. P04-039) to the internal surface of the stop block (19).
- (2) Apply corrosion preventive (Material No. P04-039) to the mating surfaces of the control tube assembly (13) the control column (21) and the new universal joint (16) (P/N 527.10.12.195).
- (3) Put the stop block (19) on the universal joint (16) (P/N 527.10.12.195) and align the holes.
- (4) Install the new universal joint (16) (P/N 527.10.12.195) to the control column (21).
- (5) Install the control tube assembly (13) to the universal joint (16) (P/N 527.10.12.195) and align the holes.
- (6) Install the new bolt (20) (P/N 932.35.14.016), washer (17) (P/N 938.77.11.112) and the nut (18) (P/N 938.07.68.304).

- (7) Install the new bolt (12) (P/N 932.19.60.814), washer (14) (P/N 938.77.11.115) and the nut (15) (P/N 938.07.68.505).
- (8) Install the bolt (23) and the nut (22).
- (9) Torque the nuts to the standard torque values, refer to AMM 12-B-20-20-01-00A-040A-A.

**D. Removal - Co-pilot Side**

Refer to Figure 1.

**CAUTION:** BE CAREFUL NOT TO DAMAGE THE ADJACENT WIRING LOOM.

- (1) Remove the nut (8) and the bolt (9).
- (2) Remove and discard the nut (11), washer (10) and the bolt (6).
- (3) Remove and discard the nut (4), washer (3) and the bolt (2).
- (4) Move back the control wheel and remove the universal joint (1) (P/N 527.10.12.195) from the control tube assembly (7) and the control column (5).

**E. Installation - Co-pilot Side**

Refer to Figure 1.

- (1) Apply corrosion preventive (Material No. P04-039) to the mating surfaces of the control tube assembly (7) the control column assembly (5) and the new universal joint (1) (P/N 527.10.12.195).
- (2) Install the new universal joint (1) (P/N 527.10.12.195) to the control column (5).
- (3) Install the control tube assembly (7) to the universal joint (1) (P/N 527.10.12.195) and align the holes.
- (4) Install the new bolt (2) (P/N 932.35.14.012), washer (3) (P/N 938.77.11.112) and the nut (4) (P/N 938.07.68.304).
- (5) Install the new bolt (6) (P/N 932.19.60.814), washer (10) (P/N 938.77.11.115) and the nut (11) (P/N 938.07.68.505).
- (6) Install the bolt (9) and the nut (8).
- (7) Torque the nuts to the standard torque values, refer to AMM 12-B-20-20-01-00A-040A-A.

**F. Close Up**

- (1) Do an functional test of the aileron control system, refer to AMM 12-B-27-10-00-00A-903A-A.
- (2) Do an functional test of the elevator control system, refer to AMM 12-B-27-30-00-00A-903A-A.
- (3) Make sure that the work area is clean and clear of tools and other items.
- (4) Install the crew seats, refer to AMM 12-B-25-10-01-00A-920A-A.

- (5) Remove the safety clip and close the circuit breaker:  
A/P SERVO (AVIONICS BUS).
- (6) Remove the warning sign from the cockpit.
- (7) Lower the aircraft to the ground and remove the jacks, refer to AMM 12-B-07-10-00-00A-901A-A.

**G. Documentation**

- (1) Record in the aircraft logbook that this Service Bulletin has been accomplished.
- (2) Mark the removed universal joints “unserviceable” and return to Pilatus at the applicable address below:

PILATUS AIRCRAFT LTD  
WARRANTY COORDINATOR  
ENNETBÜRGENSTRASSE 101  
CH-6371 STANS  
SWITZERLAND

Attn: Mr Stefan Brun  
Tel: + 41 41 619 3333

PILATUS BUSINESS AIRCRAFT LTD  
PARTS SALES AND SERVICES  
11755 AIRPORT WAY  
BROOMFIELD, CO 80021  
UNITED STATES OF AMERICA

Attn: Mr Jerry Frank  
Tel: +1 303 465 9099



**4. Part B: Accomplishment Instructions - Spares****A. Instruction**

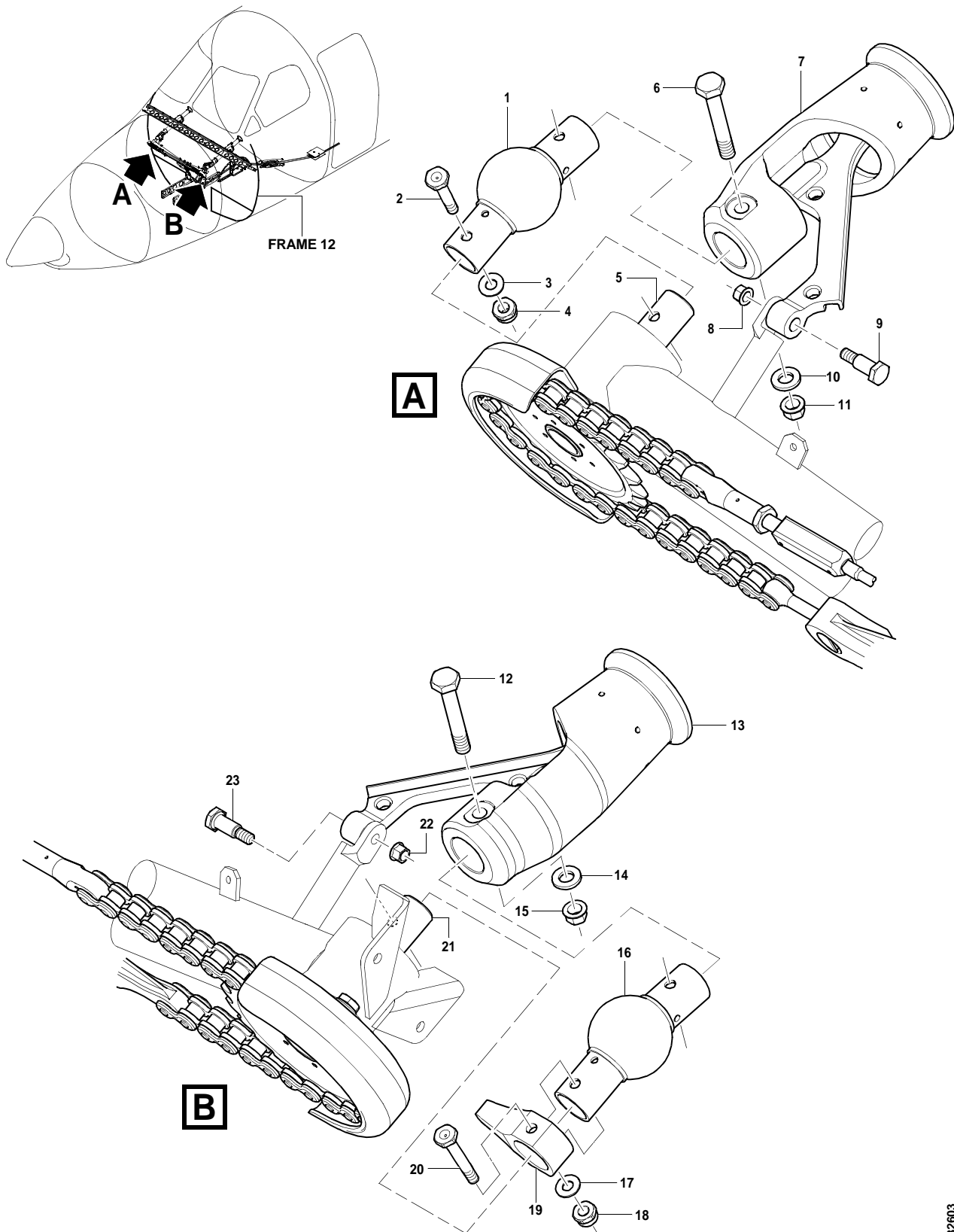
Parts held as spares must be marked "unserviceable" and return to Pilatus at the applicable address below:

PILATUS AIRCRAFT LTD  
WARRANTY COORDINATOR  
ENNETBÜRGENSTRASSE 101  
CH-6371 STANS  
SWITZERLAND

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Universal Joint - Removal/Installation  
Figure 1

SB2603