

# SERVICE BULLETIN

SERVICE BULLETIN NO: 32-021

REF NO: 220

MODIFICATION NO: EC 08-0766

ATA CHAPTER: 32

## LANDING GEAR - NOSE WHEEL STEERING REPLACEMENT OF THE CRANK BAR ASSY

### 1. Planning Information

#### A. Effectivity:

All PC-12 and PC-12/45 aircraft from MSN 101 thru MSN 299.

#### B. Concurrent Requirements

None.

#### C. Reason

##### (1) Problem

Failure of the nose wheel steering system because of fatigue cracking of the torque tube in the crank bar assy.

##### (2) Cause

Some torque tubes were bored off-center during manufacture. This results in a reduced wall thickness at one side of the torque tube. The torque tube can also crack at the bolt holes for the lever attachment bolt.

##### (3) Solution

Install a new crank bar assy which is manufactured to a higher standard.

#### D. Description

This Service Bulletin gives the data and instructions necessary to replace the crank bar assy.

#### E. Compliance

Mandatory.

At the next scheduled aircraft inspection.

#### F. Approval

The technical content of this Service Bulletin is approved under the authority of DOA No. EASA. 21J. 357.

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.

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**G. Manpower**

	Man-hours
Removal	0.75
Installation	1.25
Test	0.50
Close Up	0.25
<b>TOTAL MAN-HOURS</b>	<b>2.75</b>

**H. Weight and Balance**

**(1) Weight Change**

Not affected.

**(2) Moment Change**

Not affected.

**I. Electrical Load Data**

Not applicable.

**J. Software**

Not changed.

**K. References**

Aircraft Maintenance Manual (AMM): 12-A-07-10-00-00A-901A-A, 12-A-06-20-00-00A-040A-A, 12-A-20-31-00A-070A-A, 12-A-32-50-00-00A-903A-A.

**L. Publications Affected**

Not applicable.

**M. Interchangeability of Parts**

A torque tube P/N 532.50.12.047 must not be installed on a Post SB 32-021 aircraft.

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**2. Material Information**

**A. Material - Price and Availability**

Operators should send orders for Service Bulletin Modification Kits, to their Authorized Pilatus Service Center or:

PILATUS AIRCRAFT LTD.,  
CUSTOMER SUPPORT MANAGER,  
CH-6371 STANS,  
SWITZERLAND

General Aviation:  
Tel: + 41 41 619 6208  
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: 303 465 9099  
Fax: 303 465 6040  
eMail: Productsupport@PilBal.com

PILATUS AUSTRALIA (PTY.) LTD,  
17 JAMES SCHOFIELD DRIVE,  
ADELAIDE AIRPORT SA 5950,  
AUSTRALIA

Tel: (08) 8234 4433  
Fax: (08) 8234 4499  
Free Call: 1800 445 007  
eMail: info@pilatus.com.au

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

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

**B. Warranty**

Credit will be issued for all affected aircraft on approval of a warranty claim, provided that:

- The work is done by an authorized service center during or before the next scheduled aircraft inspection but not later than 12 calendar months after the effective date of this Service Bulletin
- The removed parts are sent to Pilatus and receipt is confirmed.

**C. Material Necessary for Each Aircraft**

**(1) Material to be Procured**

Modification Kit No. 500.50.12.334 consists of these parts:

New Part No.	Description	Old Part No.	Qty	Disp. Code	Fig	Item
532.50.12.064	Torque Tube	532.50.12.047	1	R	1	20

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

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New Part No.	Description	Old Part No.	Qty	Disp. Code	Fig	Item
532.50.12.051	Lever	532.50.12.051	1	R	1	12
932.19.60.801	Bolt, Hex, CI Tol, Cres (AN174C13A)	932.19.60.801	1	D	1	1
938.77.11.114	Washer, Flat (NAS1149F0432P)	938.77.11.114	1	D	1	5
938.07.68.305	Nut, Hex, Siflkg (MS21045-4E)	938.07.68.305	1	D	1	6

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

**(2) Operator Supplied Parts**

Part No.	Description	Qty	Remarks
940.17.02.236	Pin, Cotter, Steel	1	MS24665-210
940.17.02.226	Pin, Cotter, Steel	2	MS24665-134

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

Material No.	Description	Qty	Remarks
P01-008	Solvent	A/R	
P02-031	Absorbent Paper	A/R	
P04-012	Corrosion Preventative	A/R	
-	Orcotape (Pilatus P/N 917.40.61.113)	A/R	If installed.

**D. Material Necessary for Each Spare**

Not applicable.

**E. Reidentified Parts**

Not Applicable.

**F. Tooling - Cost and Availability**

Not Applicable.

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**3. Accomplishment Instructions**

**A. Removal (Ref. Fig. 1)**

- (1) Lift the aircraft on jacks (Ref. AMM 12-A-07-10-00-00A-901A-A).
- (2) Open and safety the circuit breaker:

HYDR CTL (NON ESSENTIAL BUS)
- (3) Make sure the nose wheel is in the neutral position and there is no load on the spring strut (17).
- (4) Open the access panel 11AL (Ref AMM.12-A-06-20-00-00A-040A-A).
- (5) If necessary, remove the Orcotape and insulation to get access to the nut (4).
- (6) Remove the cotter pin (7), the nut (8) and the washer (9).
- (7) Remove the bolt (11) and disconnect the rod (10).
- (8) Remove and discard the nut (6), the washer (5) and the bolt (1)
- (9) Make sure that the lever (12) can turn on the torque tube (20). If you cannot turn the lever (12) with your hand:
  - (a) Lower the aircraft until the nose wheel is on the ground and cannot turn.
  - (b) Use force to make the lever (12) free to turn.

**NOTE:** You can use penetrating oil to help to release the lever.
  - (c) When you can turn the lever (12) on the torque tube (20), lift the nose wheel.
- (10) Remove the cotter pin (15), the nut (14) and the washer (13).
- (11) Remove the bolt (19) and disconnect the spring strut (17). Collect the washers (16) and (18).
- (12) Remove the cotter pin (3), the nut (4) and the washer (2). Make a note of the installation position of the washer (2).
- (13) Hold the lever (12) and remove the torque tube (20) from the lever and bearings.
- (14) Keep the lever (12) and the torque tube (20) and send them to Pilatus Aircraft Ltd.

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

- (1) Apply a thin layer of corrosion preventative (Material No. P04-012) to the inside mating surface of the lever (12)
- (2) Hold the lever (12) (P/N 532.50.12.051) between the bearings and install the torque tube (20) (P/N 532.50.12.064). Make sure the lever (12) is installed in the correct position as shown in Fig. 1.
- (3) Install the bolt (1) (P/N 932.19.60.801), the washer (5) (P/N 938.77.11.114) and the nut (6) (P/N 938.07.68.305).

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- (4) Use the absorbent paper (Material No. P02-031) and the solvent (Material No. P01-008) to remove unwanted corrosion preventative from the torque tube (20).
- (5) Install the washer (2) (in the position noted in the removal procedure), the nut (4) and the new cotter pin (3).
- (6) Connect the spring strut (17) with the two washers (16) and (18) and the bolt (19).
- (7) Install the washer (13), the nut (14) and the new cotter pin (15).
- (8) Connect the rod (10) with the bolt (11).
- (9) Install the washer (9), the nut (8) and the new cotter pin (7).

**C. Test**

- (1) Do the adjustment/test of the nose wheel steering (Ref. AMM. 12-A-32-50-00-00A-903A-A)

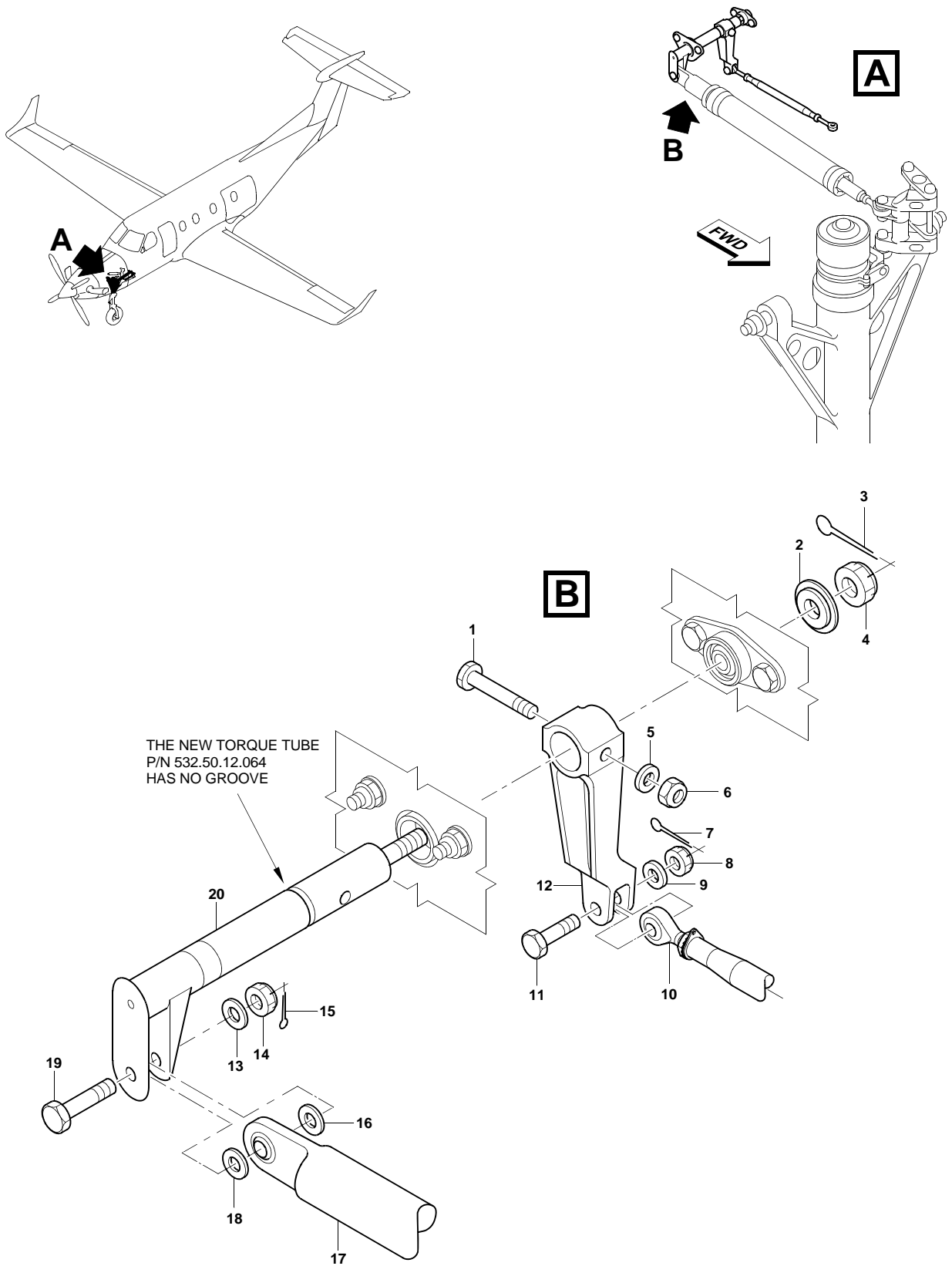
**D. Close Up**

- (1) If necessary, install the insulation and the Orcotape.
- (2) Close the access panel 11AL (Ref AMM. 12-A-06-20-00-00A-040A-A).

**E. Documentation**

Make an entry in the Aircraft Logbook that this Service Bulletin has been incorporated.


  
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Crank Bar Assy - Removal/Installation  
 Figure 1

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