

SERVICE BULLETIN

SERVICE BULLETIN NO: 71-007

REF NO: 210

MODIFICATION NO:

ATA CHAPTER: 71

**POWERPLANT
TORQUE OIL PRESSURE PIPE AND HOSE ASSEMBLIES - INSPECTION AND REPLACEMENT**

1. Planning Information

A. Effectivity

PC-12, PC-12/45 and PC-12/47 aircraft MSN 101 thru MSN 760.

This Service Bulletin supersedes Service Bulletin 71-005 Revision 1.

B. Concurrent Requirements

None

C. Reason

(1) Problem

Chafing (abrasive) damage has occurred on oil pipe assemblies in the area of the oil pressure transducer on the engines of some PC-12 aircraft. The damage has caused engine oil leakage in some aircraft.

(2) Cause

Pipes and/or the hoses have touched during engine operation. Incorrect assembly (after removal for inspection) has decreased the clearance distances between given pipe/hose assemblies and adjacent components.

(3) Solution

- (a) Do inspections for signs of abrasion damage. Defective pipe/hose assemblies must be replaced. The contours of the new pipe/hose assemblies will help to prevent abrasive damage.
- (b) Do checks to identify the configuration of pipe/hose assemblies in the given aircraft. Pre-Service Bulletin 71-007 pipe/hose assemblies must be replaced.
- (c) As a temporary option Operators can also:
 - Adjust serviceable Pre-Service Bulletin 71-007 pipe/hose assemblies to make sure that the clearance distances are sufficient
 - Replace defective pipe/hose assemblies with Pre-Service Bulletin 71-007 parts

Temporarily adjusted or replaced pipe/hose assemblies must then be replaced in the time compliance with this Service Bulletin.

≡PILATUS≡
PC12
SERVICE BULLETIN

D. Description

This Service Bulletin gives the data and instructions necessary to do checks, inspections, adjustments and replacement of pipe and hose assemblies.

E. Compliance

Mandatory.

(1) Configuration Check and Inspection

Not later than ten flying hours.

(2) Replacement

Not later than six months from the effective date of this Service Bulletin.

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.

G. Manpower

	Total	Total	Total
Preparation	0.25	0.25	0.25
Configuration Check and Inspection	0.25	0.25	0.25
Adjustment	0.50		
Replacement of Hose Assy (946.37.74.311) only		0.50	
Replacement			1.50
Close up	0.50	0.50	0.50
TOTAL MAN-HOURS	1.50	1.50	2.50

H. Weight and Balance

(1) Weight Change

Not changed.

(2) Moment Change

Not changed.


SERVICE BULLETIN

I. Electrical Load Data

Not changed.

J. Software

Not changed.

K. References

Aircraft Maintenance Manual (AMM), 06-20-00, 71-00-00 and 71-00-02.

Service Bulletin 71-005.

L. Publications Affected

Aircraft Maintenance Manual (AMM), 71-00-00 and 71-00-02.

Pratt & Whitney Canada, Engine Maintenance Manual (P&WC, EMM), 70-00-00 and 73-10-09.

M. Interchangeability of Parts

Pre and post Service Bulletin 71-007 pipe/hose assemblies are not interchangeable.

PILATUS
PC12
SERVICE BULLETIN

2. Material Information

A. Material - Price and Availability

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

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 of aircraft which are affected by this Service Bulletin.

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

B. Warranty

Credit will be issued for all affected aircraft on approval of a warranty claim provided the work is accomplished by an authorized service center and the following conditions are complied with:

- The inspection/check is carried out within 10 flying hours
- Hose assembly (946.37.74.307) is adjusted or replaced before the next flight if found to be incorrectly installed or defective
- Hose assemblies (946.37.74.307) and (946.37.74.311) are replaced, in full compliance with, and not later than six months from the effective date of this Service Bulletin

Credit will not be issued for the labour and parts used for the temporary replacement of defective Pre-Service Bulletin 71-007 components in aircraft who's Operators did not incorporate Service Bulletin 71-005.

PILATUS
PCI2
SERVICE BULLETIN

C. Material Necessary for Each Aircraft

(1) Material to be Procured

Modification Kit No. 500.50.12.307 is for use in aircraft in which it is necessary to replace the pipe/hose assemblies shown as D in the Table - Configuration and Inspection of Pipe and Hose Assemblies (Ref. Sect 3, B). The kit comprises:

NEW PART NO.	DESCRIPTION	OLD PART NO.	QTY	DISP. CODE	FIG	ITEM
577.11.12.106	PIPE ASSEMBLY - OIL	577.11.12.104	1	D	1	3
577.11.12.107	PIPE ASSEMBLY - OIL	577.11.12.105	1	D	1	2
935.63.11.065	SCREW (MS35206-246)	N/A	2	N	1	15
938.07.68.303	NUT (MS21045-08)	938.07.68.303	2	N	1	12
938.77.11.110	WASHER (NAS1149FN816P)	938.77.11.110	2	N	1	13
946.21.62.134	ELBOW - TUBE 90° SWIVEL	N/A	2	N	1	24
946.31.05.604	CLAMP - LOOP TYPE (MS21919WCJ4)	946.31.05.117	4	D	1	14
946.31.05.605	CLAMP - LOOP TYPE (MS21919WCJ5)	N/A	2	D	1	23
946.37.74.309	HOSE ASSEMBLY - OIL	946.37.74.305	1	D	1	16
946.37.74.310	HOSE ASSEMBLY - OIL	946.37.74.306	1	D	1	1
946.37.74.312	HOSE ASSEMBLY - OIL	946.37.74.308	1	D	1	11
946.37.74.313	HOSE ASSEMBLY - OIL	946.37.74.307 946.37.74.311	1	D	1	4

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

(2) Additional Material to be Procured

The following item is for use in aircraft in which it is only necessary to replace hose assembly (946.37.74.311) (Ref. Sect 3, B, (2)).

NEW PART NO.	DESCRIPTION	OLD PART NO.	QTY	DISP. CODE	FIG	ITEM
946.37.74.313	HOSE ASSEMBLY - OIL	946.37.74.311	1	D	1	4

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

PILATUS
PC12
SERVICE BULLETIN

(3) Additional Vendor Material to be Procured

Operators must order the following vendor item as necessary:

NEW PART NO.	DESCRIPTION	OLD PART NO.	QTY	DISP. CODE	FIG	ITEM
P&WC 3119969	PIPE ASSEMBLY - OIL	P&WC 3119969	1	D	1	18

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

- (a) The following items can be used for the temporary replacement. Operators must order the items as necessary:

NEW PART NO.	DESCRIPTION	OLD PART NO.	QTY	DISP. CODE	FIG	ITEM
577.11.12.104	PIPE ASSEMBLY	N/A	1	D	1	3
577.11.12.105	PIPE ASSEMBLY	N/A	1	D	1	2
946.37.74.305	HOSE ASSEMBLY	N/A	1	D	1	16
946.37.74.306	HOSE ASSEMBLY	N/A	1	D	1	1
946.37.74.307	HOSE ASSEMBLY	N/A	1	D	1	4
946.37.74.308	HOSE ASSEMBLY	N/A	1	D	1	11

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

(4) Operator Supplied Materials

Not applicable.

PILATUS
PC12
SERVICE BULLETIN

3. Accomplishment Instructions - Aircraft

A. Preparation

- (1) Put a warning sign (DO NOT START THE ENGINE) in the flight compartment.
- (2) Open and safety the circuit breaker:
STARTER (BATTERY BUS)
- (3) Remove the cowling panel 42AT (Ref. AMM, 06-20-00, Page Block 1).

B. Configuration Check and Inspection (Ref. Fig. 1 Sheet 1 and 2).

Item	Fig	√	Currently Installed Part No.	Disp. Code	Description	New Part No.
1	1		946.37.74.306	D	Hose Assy - Oil	946.37.74.310
			946.37.74.310	-		
2	1		577.11.12.105	D	Pipe Assy - Oil	577.11.12.107
			577.11.12.107	-		
3	1		577.11.12.104	D	Pipe Assy - Oil	577.11.12.106
			577.11.12.106	-		
4	1		946.37.74.307	D	Hose Assy - Oil	946.37.74.313
			946.37.74.311	D		
			946.37.74.313	-		
11	1		946.37.74.308	D	Hose Assy - Oil	946.37.74.312
			946.37.74.312	-		
16	1		946.37.74.305	D	Hose Assy - Oil	946.37.74.309
			946.37.74.309	-		

Configuration and Inspection of Pipe and Hose Assemblies

- (1) Make a copy of the table (Configuration and Inspection of Pipe and Hose Assemblies) for each applicable aircraft.
- (2) Do a check to identify the configuration of the pipe/hose assemblies (Ref. Table - Configuration and Inspection of Pipe and Hose Assemblies). Use Column (√) to record the pipe/hose assemblies found installed in the given aircraft.

≡PILATUS≡
PC12
SERVICE BULLETIN

You must replace all pipe/hose assemblies which are indicated as D in the Column (Disp Code). This must be done in the compliance time of this Service Bulletin (Ref. Sect 1, Para E (2)).

NOTE: Post-Service Bulletin 71-007 parts could be installed and replacement will not be necessary.

- (3) Do an inspection of the pipe/hose assemblies (1) thru (4), (11), (16) and (18) for abrasion damage. Abrasion damage is not permitted. You must replace damaged pipe/hose assemblies before the next flight (Ref. Para F). Serviceable pipe/hose assemblies can stay installed, but you must replace them in the compliance time of this Service Bulletin (Ref. Sect 1, Para E (2))
- (4) Do a check for minimum clearance distance between the pipe/hose assemblies (1) thru (4), (11), (16) or (18). The clearance distances must not be less than 0.12 in. (3,0 mm) at all locations. You must adjust or replace pipe/hose assemblies before the next flight if there is less than the minimum clearance distance (Ref. Para D, E or F).

C. Adjustment (Ref. Fig 1, Sheet 1 and 2)

This procedure is only applicable for adjustment of the initially installed pipe/hose assemblies for clearance. Adjustment is a temporary alternative to modification (Ref. Para E). You must then replace the pipe/hose assemblies in full compliance with this Service Bulletin (Ref. Sect 1, Para E, (2)).

- (1) Loosen the unions and clamps (if applicable) of the pipe/hose assemblies (1) thru (4), (11), (16) or (18) as necessary.
- (2) Tighten the unions and clamps of the pipe/hose assemblies (1) thru (4), (11), (16) or (18) as necessary. Do this in sequence to make sure there is a clearance distance of not less than 0.12 in. (3,0 mm) (at all locations) between the hoses, pipes and all adjacent components. You must replace the pipes and hoses if it is not possible to get minimum clearance (Ref. Para E or F).
- (3) Safety the unions of the pipe assembly (4) with wire (Ref. P&WC EMM, 70-00-00, Page Block 201).

D. Temporary Replacement

This procedure is a temporary alternative to compliance with this Service Bulletin (Ref. Sect 1, Para E). You can temporarily replace pipe/hose assemblies with initially installed (Pre-Service Bulletin 71-007) parts but you must then replace the temporarily installed pipe/hose assemblies in full compliance with this Service Bulletin ((Ref. Sect 1, Para E, (2)).

- (1) Disassemble and remove the defective pipe/hose assemblies (1) thru (4), (11), (16) or (18) as necessary.
- (2) Loosely assemble the replacement pipe/hose assemblies (1) thru (4), (11), (16) or (18).
- (3) Tighten the union nuts at the ends of the hoses pipe/hose assemblies (1) thru (4), (11), (16) or (18). Do this in sequence to make sure there is no distortion. Make sure the:
 - Hose assemblies are not twisted.
 - Clearance distances between the pipes, hose and adjacent components are not less than 1.2 in. (3,0 mm).

PILATUS
PC12
SERVICE BULLETIN

- (4) Safety the unions of the pipe assembly (4) with wire (Ref. P&WC EMM, 70-00-00, Page Block 201).

E. Replacement

- (1) Replace the hose assembly (946.37.74.311) with (946.37.74.313). This step is only applicable if you found hose assembly (946.37.74.311) installed (Ref. Para B, (2)).

NOTE: In some aircraft hose assembly (946.37.74.311) will be the only replacement necessary.

- (a) Disassemble remove and discard the hose assembly (Ref. Fig. 1, Sheet 2).
- (b) Loosely assemble the (new) hose assembly (4) on the differential pressure transducer (20) and TEE piece (17).
- (c) Tighten the union nuts at the ends of the hose assembly (4). Make sure the:
- Hose assembly is not twisted.
 - Clearance distances between the hose assembly and adjacent components are not less than 0.12 in. (3,0 mm).
- (2) Remove the pipe and hose assemblies (Ref. Fig. 1, Sheet 1). Steps (2) and (3) are applicable for the replacement of the pipe/hose assemblies in full compliance with this Service Bulletin (Ref. Sect 1, Para E, (2)).
- (a) Remove and discard the screws (6), nuts (7), washers (8), clamps (9) and clamps (10).
- (b) Remove and discard the nut (13), washer (14), screw (12), and clamps (15).
- (c) Remove and discard the pipe assemblies (2), (3) and (18), and the hose assemblies (1), (4), (11) and (16). Do not discard the two TEE pieces (17).
- (3) Install the new pipe and hose assemblies (Ref. Fig. 1, Sheet 2).
- (a) Loosely assemble the (new) pipe assembly (3) and the hose assemblies (1) and (16) on one of the TEE pieces (17).
- (b) Loosely install the remaining ends of the:
- Pipe assembly (3) on the adaptor (19)
 - Hose assembly (16) on the differential pressure transducer (20)
 - Hose assembly (1) on the torque transducer (21)
- (c) Loosely install one of the 90° unions (24) on the tail of the remaining TEE piece (17).
- (d) Loosely install the remaining 90° union (24) on the torque limiter (22).
- (e) Loosely assemble the pipe assembly (2) on the 90° union (24) (in the TEE piece (17)).
- (f) Loosely install the hose assemblies (4) and (11) on the TEE piece (17).
- (g) Loosely install the remaining ends of the:

≡PILATUS≡
PC12
SERVICE BULLETIN

- Pipe assembly (2) on the on the 90° union (24) in the torque limiter (22)
 - Hose assembly (11) on the torque transducer (21)
 - Hose assembly (4) on the differential pressure transducer (20)
- (h) Loosely install the pipe assembly (24).
- (i) Loosely assemble the four clamps (14) and the two clamps (23) (together with the with the harness (5) on the pipe assemblies (2) and (3) at the positions shown. Do this together with the new screws (15), washers (13) and nuts (12).
- (j) Tighten the union nuts at the ends of the hose assemblies (1), (4), (11) & (16) and the pipes assemblies (2), (3) and (18). Make sure the:
- Hose assemblies are not twisted.
 - Clearance distances between the pipe/hose assemblies and adjacent components are not less than 0.12 in. (3,0 mm).
- (k) Tighten the nuts (12) to fully install the clamps (14) and (23).

F. Close up

- (1) Remove all tools and materials. Make sure the work area is clean.
- (2) Install the cowling panel 42AT (Ref. AMM, 06-20-00, Page Block 1).
- (3) Remove the warning sign (DO NOT START THE ENGINE) from the flight compartment.
- (4) Close the circuit breaker:

STARTER (BATTERY BUS)

- (5) Operate the engine (Ref. AMM, 71-00-00, Page Block 201). Steps (5) and (6) are only necessary if the pipe/hose assemblies (1) thru (4), (11), (16) and (18) have been adjusted or replaced.
- (6) Look for signs of leakage from the applicable hoses and pipes.

G. Documentation

Make an entry in the Aircraft Logbook to record the incorporation of this Service Bulletin.

PILATUS
PCI2
SERVICE BULLETIN

4. Accomplishment Instructions - Spares

This procedure is applicable to engines held as spare. Although it is not standard procedure, engines held as spare could have Pre-Service Bulletin 71-007 pipe/hose assemblies installed.

A. Inspection (Ref. Fig. 1, Sheet 1)

- (1) Do inspections to find if pipe/hose assemblies (1) thru (4), (11) or (16) are installed on all engines held as spare
- (2) Do a check of the part numbers of pipe/hose assemblies (1) thru (4), (11) and (16) to identify which type are installed on the engine held as spare. Pipe/hose assemblies must be replaced as follows before you operate the engine:

REMOVE		REPLACE WITH	
PART No.	DESCRIPTION	PART No.	DESCRIPTION
577.11.12.104	PIPE ASSEMBLY	577.11.12.106	PIPE ASSEMBLY
577.11.12.105	PIPE ASSEMBLY	577.11.12.107	PIPE ASSEMBLY
946.37.74.305	HOSE ASSEMBLY	946.37.74.309	HOSE ASSEMBLY
946.37.74.306	HOSE ASSEMBLY	946.37.74.310	HOSE ASSEMBLY
946.37.74.307	HOSE ASSEMBLY	946.37.74.313	HOSE ASSEMBLY
946.37.74.308	HOSE ASSEMBLY	946.37.74.312	HOSE ASSEMBLY

B. Replacement

This procedure is only applicable if you have found Pre-Service Bulletin 71-007 pipe/hose assemblies installed on engines held as spare.

- (1) Remove and discard the pipe assemblies (2) and (3), and the hose assemblies (1), (4), (11) and (16). Do not discard the two TEE pieces (17).
- (2) Install the new pipe and hose assemblies (Ref. Fig. 1, Sheet 2).
 - (a) Loosely assemble the (new) pipe assembly (3) and the hose assemblies (1) and (16) on one of the TEE pieces (17).
 - (b) Loosely install the remaining ends of the:
 - Pipe assembly (3) on the adaptor (19)
 - Hose assembly (16) on the differential pressure transducer (20)
 - Hose assembly (1) on the torque transducer (21)
 - (c) Loosely install one of the 90° unions (24) on the tail of the remaining TEE piece (17).
 - (d) Loosely install the remaining 90° union (24) on the torque limiter (22).
 - (e) Loosely assemble the pipe assembly (2) on the 90° union (24) (in the TEE piece (17)).

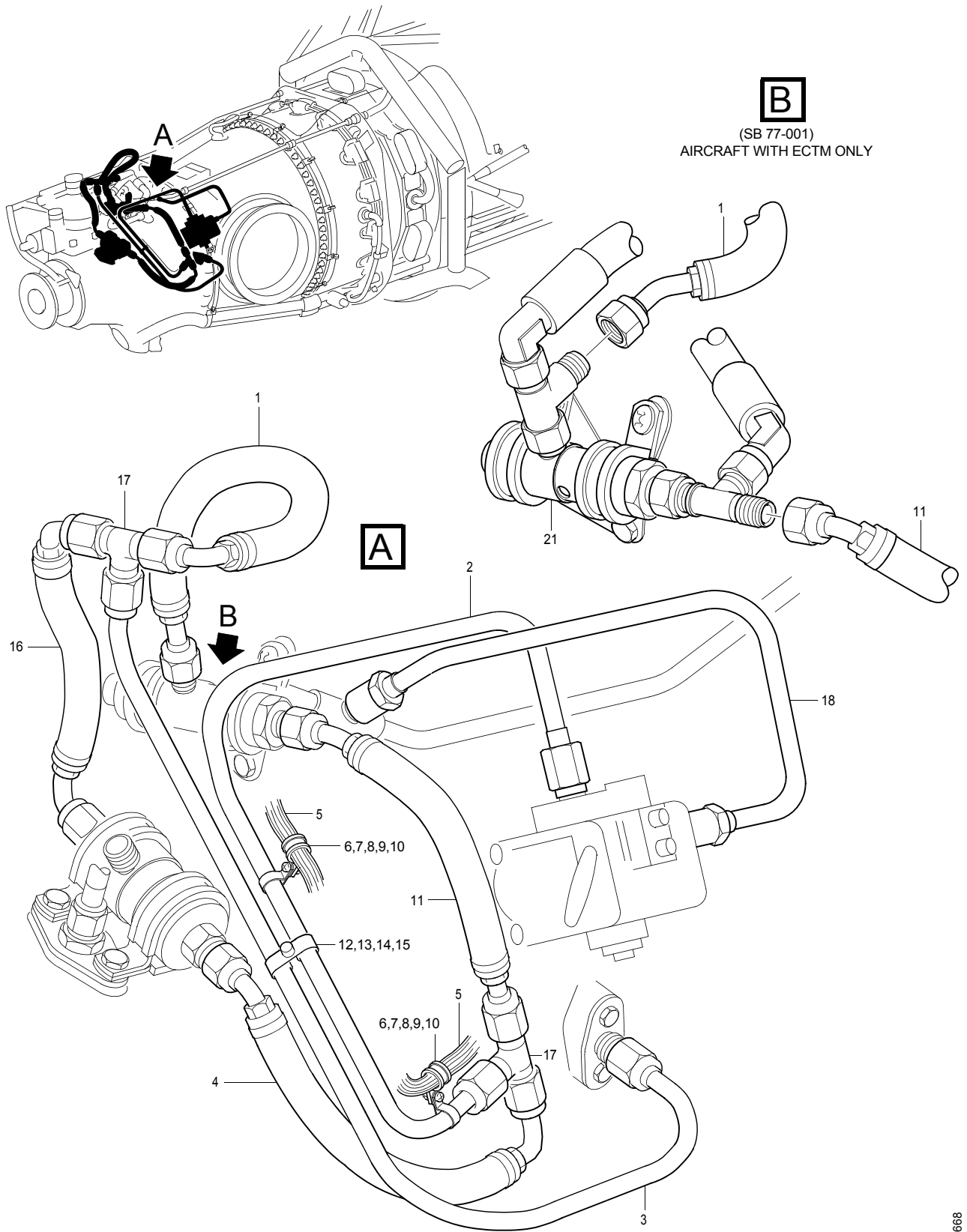
≡PILATUS≡
PC12
SERVICE BULLETIN

- (f) Loosely install the hose assemblies (4) and (11) on the TEE piece (17).
- (g) Loosely install the remaining ends of the:
 - Pipe assembly (2) on the on the 90° union (24) in the torque limiter (22)
 - Hose assembly (11) on the torque transducer (21)
 - Hose assembly (4) on the differential pressure transducer (20)
- (h) Tighten the union nuts at the ends of the hose assemblies (1), (4), (11) & (16) and the pipes assemblies (2), (3) and (18). Make sure the:
 - Hose assemblies are not twisted.
 - Clearance distances between the pipe/hose assemblies and adjacent components are not less than 0.12 in. (3,0 mm).

C. Documentation

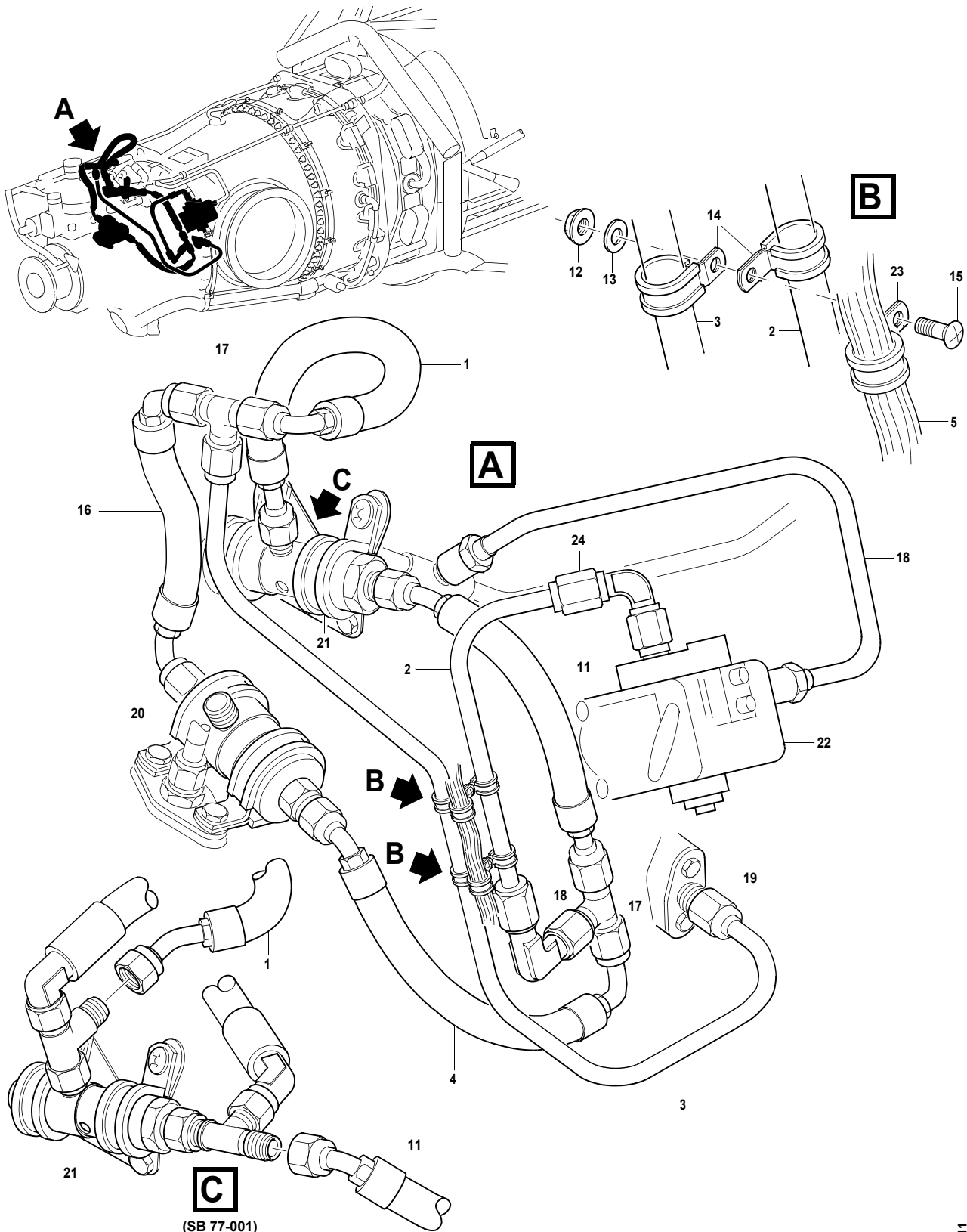
Make an entry in the Engine Logbook to record the incorporation of this Service Bulletin.

PILATUS
PC12
SERVICE BULLETIN



Torque Oil-pressure Pipes and Py Pressure Pipes
 (Pre-Service Bulletin 71-005)
 Figure 1 (Sheet 1 of 2)

PILATUS
PCI2
SERVICE BULLETIN



(SB 77-001)
 AIRCRAFT WITH ECTM ONLY

Torque Oil-pressure Pipes and Py Pressure Pipes
 (Post-Service Bulletin 71-005 and 71-007)
 Figure 1 (Sheet 2 of 2)

SB911