

Service Bulletin No: 34-005

Ref No: 85

Modification No: EC-12-0334, EC-12-0541

ATA Chapter: 34

**NAVIGATION - FLIGHT ENVIRONMENT DATA  
MODIFICATION TO THE PITOT SYSTEM****1. Planning Information****A. Effectivity**

MSNs 101 thru 154.

**NOTE:** The intent of this modification will be incorporated during production on MSN 155 and subsequent.

**B. Concurrent Requirements**

None.

**C. Reason****(1) Problem**

One operator has reported false pitot-pressure inputs to the air data system.

**(2) Cause**

An investigation found that the pitot system had become blocked due to water ingress.

**(3) Solution**

Introduction of an inertial water separator which prevents ingress of water into the pitot tubing in the wing.

**D. Description**

This Service Bulletin gives the instructions and data necessary to do the modification to the aircraft pitot system.

Revision No. 1 of this Service Bulletin is issued to correct the size, and therefore, the part number of the screw and washer that attaches the clip (which holds the electrical wires) to the water container. New kits have been created to include these new parts.

A note has also been added to make sure the new holes in the main spar are drilled in the correct position.

Operators that have accomplished this Service Bulletin at the initial issue must return to the work area and do the steps listed in Para. 4.

**E. Compliance**

Mandatory.

Accomplishment required not later than 31 December 2012.

**F. Approval**

The technical content of this Service Bulletin is approved under the authority of Letter of DOA Acceptance ref. FOCA. 21J.002.

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

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**H. Manpower**

	<b>Man-Hours</b>
Preparation	1.0
Modification	6.0
Close up	3.0
<b>TOTAL MAN-HOURS</b>	<b>10.0</b>

**NOTE:** Man-hours figures do not include the time required to cure sealants and adhesives.

**I. Weight and Balance****(1) Weight Change**

+ 0.460 kg (+ 1.014 lb).

**(2) Moment Change**

+ 2.10 kgm (+ 15.19 lb ft).

**J. Electrical Load Data**

Not changed.

**K. Software**

Not changed.

**L. References**

Aircraft Maintenance Manual (AMM), 00-50-00-00A-013A-A, 06-40-00-00A-055A-A, 34-11-00-00A-364A-A, 95-00-00-00A-012A-A.

**M. Publications Affected**

AMM, 05-40-00-00A-288A-A, 34-11-00-00A-040A-A, 34-11-00-00A-054A-A,  
34-11-00-00A-055A-A, 34-11-00-00A-226A-A, 34-11-01-00A-520A-A, 34-11-01-00A-720A-A.

Illustrated Parts Data (IPD), 21-B-34-11-00-010-941A-A or 21-C-34-11-00-01C-941A-A or  
21-D-34-11-00-01D-941A-A.

**N. Interchangeability of Parts**

One way interchangeable. Pre-Service Bulletin 34-005 parts must not be installed on post-  
Service Bulletin 34-005 aircraft.

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

Operators who require more information should contact:

PILATUS AIRCRAFT LTD,  
 MANAGER, INTEGRATED LOGISTIC SUPPORT  
 CH 6371 STANS, Tel: +41 41 619 34 07  
 SWITZERLAND Fax: +41 41 619 64 52

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

Kit Number	Price	Availability
For Config 1 Aircraft:		
500.50.21.081	Contact address above	Contact address above
500.55.21.001	Contact address above	Contact address above
For Config 2 Aircraft		
500.50.21.082	Contact address above	Contact address above
500.55.21.001	Contact address above	Contact address above

**NOTE:** Config 1 aircraft are MSN 128 thru MSN 152.

Config 2 aircraft are MSN 101 thru MSN 127, MSN 153 and MSN 154.

Kits P/N 500.50.21.081 and P/N 500.50.21.082 are one per aircraft.

Kits P/N 500.55.21.001 are one per fleet of aircraft.

**B. Material Necessary for Each Aircraft**
**(1) Material to be Purchased**

(a) Modification Kit No. 500.50.21.081 has these parts:

New Part No.	Description	Old Part No.	Qty	Disp. Code	Fig	Item
534.11.21.024	ATTACHMENT ANGLE		1		3	29
534.11.21.029	BRACKET		1		3	25
534.11.21.023	BRACKET		1		3	27
534.11.21.035	CLOTH, ABSORBING		1		3	1
534.11.21.036	HUMIDITY INDICATOR		1		3	2
534.11.21.037	TANK COVER ASSY		1		3	4
534.11.21.027	TUBE ASSY		1		3	7

New Part No.	Description	Old Part No.	Qty	Disp. Code	Fig	Item
534.11.21.021	WATER CONTAINER		1		3	24
932.19.21.027	BOLT		4 4		3	28 42
935.63.12.064	SCREW		1		3	18
935.63.11.064	SCREW		1		3	6
935.63.11.066	SCREW		2		3	26
938.07.68.303	NUT		1 2		3	21 39
938.07.68.304	NUT		4 4		3	31 33
938.77.11.113	WASHER		4 4		3	30 32
938.77.11.111	WASHER		1 2		3	22 40
938.77.11.112	WASHER		1		3	19
938.77.11.110	WASHER		1		3	12
946.01.17.101	FITTING		1		3	Note 1
946.01.17.197	INSERT		1		3	17
946.20.85.202	FITTING		1 1		3	15 23
946.31.05.117	CLAMP		1 1		3	8 14
946.31.05.703	CABLE CLIP		1		3	20
946.91.26.130	PACKING, PREFORMED		1		3	3
6302.0048.03	WASHER, LOCKING		1		3	41

**NOTE 1:** The fitting (P/N 946.01.17.101) is made up of items 16, 36 and 37.

**NOTE 2:** 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 with the Modification Kit are correct when the kit is dispatched. This could lead to differences between those part numbers quoted in this Service Bulletin and the Modification Kit if parts are superseded. Operators are requested to check the IPC for delivered parts which differ from those listed in the Service Bulletin Materials Kit List.

(b) Modification Kit No. 500.50.21.082 has these parts:

New Part No.	Description	Old Part No.	Qty	Disp. Code	Fig	Item
533.47.21.033	BUSH		1		3	11
935.63.11.068	SCREW		1		3	13
534.11.21.024	ATTACHMENT ANGLE		1		3	29
534.11.21.029	BRACKET		1		3	25
534.11.21.023	BRACKET		1		3	27
534.11.21.035	CLOTH, ABSORBING		1		3	1
534.11.21.036	HUMIDITY INDICATOR		1		3	2
534.11.21.037	TANK COVER ASSY		1		3	4
534.11.21.027	TUBE ASSY		1		3	7
534.11.21.021	WATER CONTAINER		1		3	24
932.19.21.027	BOLT		4 4		3	28 42
935.63.12.064	SCREW		1		3	18
935.63.11.064	SCREW		1		3	6
935.63.11.066	SCREW		2		3	26
938.07.68.303	NUT		1 2		3	21 39
938.07.68.304	NUT		4 4		3	31 33
938.77.11.113	WASHER		4 4		3	30 32
938.77.11.111	WASHER		1 2		3	22 40
938.77.11.112	WASHER		1		3	19
938.77.11.110	WASHER		1		3	12
946.01.17.101	FITTING		1		3	Note 1
946.01.17.197	INSERT		1		3	17
946.20.85.202	FITTING		1 1		3	15 23
946.31.05.117	CLAMP		1 1		3	8 14
946.31.05.703	CABLE CLIP		1		3	20
946.91.26.130	PACKING, PREFORMED		1		3	3
6302.0048.03	WASHER, LOCKING		1		3	41

**NOTE 1:** The fitting (P/N 946.01.17.101) is made up of items 16, 36 and 37.

**NOTE 2:** 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 with the Modification Kit are correct when the kit is dispatched. This could lead to differences between those part numbers quoted in this Service Bulletin and the Modification Kit if parts are superseded. Operators are requested to check the IPC for delivered parts which differ from those listed in the Service Bulletin Materials Kit List.

(c) Template Kit No. 500.55.21.001 has these parts:

New Part No.	Description	Old Part No.	Qty	Disp. Code	Fig	Item
513.34.21.030	HOLE TEMPLATE		1		2	5
935.63.11.066	SCREW		4		2	4
938.77.61.011	WASHER		4		2	3

**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 with the Modification Kit are correct when the kit is dispatched. This could lead to differences between those part numbers quoted in this Service Bulletin and the Modification Kit if parts are superseded. Operators are requested to check the IPC for delivered parts which differ from those listed in the Service Bulletin Materials Kit List.

**(2) Operator Supplied Materials (Ref. AMM 00-50-00-00A-013A-A)**

MATERIAL NO.	DESCRIPTION	QTY	REMARKS
P01-010	SOLVENT	A/R	Or equivalent
P02-001	LOCKWIRE	A/R	Or equivalent
P02-031	ABSORBENT PAPER	A/R	Or equivalent
P07-021	ALODINE 1132	A/R	Or equivalent
-	STRING	A/R	Or equivalent, Local Supply
-	REAMER, 5.1 MM	A/R	Local Supply

**C. Material Necessary for Each Spare**

None

**D. Re-identified Parts**

None

**E. Tooling - Cost and Availability**

Refer to Para. 2.B.(1)(c).

**3. Accomplishment Instructions**

**WARNING:** MAKE SURE THAT BOTH EJECTION SEATS HAVE THE SAFETY PINS INSTALLED IN THE SAFE FOR SERVICING LOCATIONS AND THAT THE CFS HAS THE SAFETY PIN INSTALLED IN THE SAFE POSITION BEFORE YOU GO INTO THE COCKPIT (REF. AMM, 95-00-00-00A-012A-A).

**WARNING:** READ AND OBEY THE MANUFACTURERS HEALTH INSTRUCTIONS BEFORE YOU USE THE CONSUMABLE MATERIALS.

**NOTE:** Read and obey the manufacturers instructions about how to prepare the consumable materials before you use them.

**NOTE:** To accomplish this Service Bulletin, you will require:

- The mechanics tool kit, P/N 990.00.02.004
- The metal works tool kit, P/N 990.00.02.011.

**A. Preparation**

**NOTE:** For the location of the access items, refer to AMM, 06-40-00-00A-055A-A.

Remove the access panels RB38 and RB39.

**B. Modification**

**NOTE:** Config 1 aircraft are MSN 128 thru MSN 152.

Config 2 aircraft are MSN 101 thru MSN 127, MSN 153 and MSN 154.

- (1) Disconnect the plastic tube assembly (Ref. Fig. 1)
  - (a) Cut and remove the cable ties (7) that attach the electrical wires (6) to the tube (1) between the pitot tube and the wing spar.
  - (b) Disconnect the nut (2) from the fitting (4).
  - (c) Disconnect the fitting (4) from the pitot tube (5).
  - (d) Remove, and discard, the insert (3), the fitting (4) and the nut (2).
  - (e) For Config 1 aircraft:
    - 1 Remove the screw (13), the washer (14), the bush (11), the special washer (10) and the attachment (9) from the angle (8).
    - 2 Remove the clamp (12) from the tube (1).
    - 3 Discard the washer (14) and the clamp (12). Keep the screw (13), the bush (11), the special washer (10) and the attachment (9).
  - (f) For Config 2 aircraft:
    - 1 Remove the screw (13), the washer (14), the special washer (10) and the attachment (9) from the angle (8).



- 2 Remove the clamp (12) from the tube (1).
        - 3 Discard the screw, (13,) the clamp (12) and the washer (14). Keep the special washer (10) and the attachment (9).
- (2) Make the holes in the main spar (Ref. Fig. 2):
  - (a) Remove the four screws (2).
  - (b) Use the string (or equivalent - local supply) and tie the two terminal blocks (1) clear of the work area.

**NOTE:** This is to keep the strain from the cables of the terminal blocks (1).
  - (c) Put the hole template (5) (P/N 513.34.21.030) in position on the wing main spar (6).
  - (d) Use the screws (4) (P/N 935.63.11.066) and the washers (3) (P/N 938.77.61.011) to keep the hole template (5) (P/N 513.34.21.030) in position.

**NOTE:** Make sure that when you drill the four holes for the attachment angle (Fig 3, Item 29) (P/N 534.11.21.024), they do not go through the joggle in the structure. Loosen the screws (4) (P/N 935.63.11.066) and move the position of the template (5) (P/N 513.34.21.030) to make sure you do not drill through the joggle. Tighten the screws (4) (P/N 935.63.11.066).
  - (e) Drill four 3.2 mm holes for the attachment angle (Fig 3, Item 29) (P/N 534.11.21.024).
  - (f) Remove:
    - The screws (4) (P/N 935.63.11.066)
    - The washers (3) (P/N 938.77.61.011)
    - The hole template (5) (P/N 513.34.21.030).
  - (g) Use a 4.8 drill and make the four holes in the main spar (6) larger.
  - (h) Use the 5.1 reamer and make the four holes in the main spar (6) larger.
  - (i) Make sure there are no sharp edges.
  - (j) Use the absorbent paper (Mat. No. P02-031) made moist with the solvent (Mat. No. P01-010) and clean the area.
  - (k) Apply a layer of the Alodine 1132 (Mat. No. P07-021) to the bare metal of the holes.
  - (l) Remove the string (or equivalent) and put the two terminal blocks (1) in the correct position for installation.
  - (m) Install the four screws (2).

- (3) Install the modified system parts (Ref. Fig. 3)
- (a) Put the packing (3) (P/N 946.91.26.130) in the groove on the tank cover assy (4) (P/N 534.11.21.037).
  - (b) Put the absorbing cloth (1) (P/N 534.11.21.035) in the water container (24) (P/N 534.11.21.021).
  - (c) Put the humidity indicator (2) (P/N 534.11.21.036) on the window of the tank cover assy (4) (P/N 534.11.21.037).
  - (d) Install the tank cover assy (4) (P/N 534.11.21.037) in the water container (24) (P/N 534.11.21.021).
  - (e) Put the bracket (25) (P/N 534.11.21.029) and the bracket (27) (P/N 534.11.21.023) around the water container (24) (P/N 534.11.21.021) and loosely install:
    - 1 On the inboard side:
      - The screw (26) (P/N 935.63.11.066)
      - The washer (40) (P/N 938.77.11.111)
      - The nut (39) (P/N 938.07.68.303).
    - 2 On the outboard side:
      - The screw (26) (P/N 935.63.11.066)
      - The locking washer (41) (P/N 6302.0048.03)
      - The washer (40) (P/N 938.77.11.111)
      - The nut (39) (P/N 938.07.68.303).
  - (f) Put the attachment angle (29) (P/N 534.11.21.024) in the correct position for installation on the bracket (27) (P/N 534.11.21.023).
  - (g) Loosely install the four bolts (42) (P/N 932.19.21.027), the four washers (30) (P/N 938.77.11.113) and the four nuts (31) (P/N 938.07.68.304).
  - (h) Install the fitting (23) (P/N 946.20.85.202) in the water container (24) (P/N 534.11.21.021).
  - (i) Put the clamp (8) (P/N 946.31.05.117) on the tube assembly (7) (P/N 534.11.21.027).
  - (j) Put the clamp (8) (P/N 946.31.05.117) in position against the lug on the water container (24) (P/N 534.11.21.021).
  - (k) Connect the tube assembly (7) (P/N 534.11.21.027) to the fitting (23) (P/N 946.20.85.202) installed on the water container (24) (P/N 534.11.21.021).
  - (l) Install the screw (6) (P/N 935.63.11.064), the washer (22) (P/N 938.77.11.111) and the nut (21) (P/N 938.07.68.303).

## (m) For Config 1 Aircraft:

Put the clamp (14) (P/N 946.31.05.117) on the tube assembly (7) (P/N 534.11.21.027) and install:

- The screw (13)
- The washer (12) (P/N 938.77.11.110)
- The bush (11)
- The special washer (10)
- The attachment (9).

**NOTE:** The screw (13), the bush (11), the special washer (10) and the attachment (9) were kept in the removal paragraph (Ref. Para. 3.B.(1)(e)3).

## (n) For Config 2 Aircraft:

Put the clamp (14) (P/N 946.31.05.117) on the tube assembly (7) (P/N 534.11.21.027) and install:

- The screw (13) (P/N 935.63.11.068)
- The washer (12) (P/N 938.77.11.110)
- The bush (11) (P/N 533.47.21.033)
- The special washer (10)
- The attachment (9).

**NOTE:** The special washer (10) and the attachment (9) were kept in the removal paragraph (Ref. Para. 3.B.(1)(f)3).

## (o) Connect the tube assembly (7) (P/N 534.11.21.027) to the pitot tube (5).

## (p) Put the attachment angle (29) (P/N 534.11.21.024) in the correct position against the main spar (34).

## (q) Install the four bolts (28) (P/N 932.19.21.027), the four washers (32) (P/N 938.77.11.113) and the four nuts (33) (P/N 938.07.68.304).

## (r) Tighten the four nuts (31) (P/N 938.07.68.304).

## (s) Tighten the two nuts (39) (P/N 938.07.68.303).

## (t) Use the lockwire (Mat. No. P02-001) and safety the tank cover assy (4) (P/N 534.11.21.037) to the locking washer (41) (P/N 6302.0048.03).

## (u) Connect the tube assembly (7) (P/N 534.11.21.027) to the fitting (15) (P/N 946.20.85.202).

## (v) Disassemble the fitting (P/N 946.01.17.101).

**NOTE:** The fitting (P/N 946.01.17.101) is made up of items 16, 36 and 37.

## (w) Connect the connector (16) (part of the fitting (P/N 946.01.17.101)) to the fitting (15) (P/N 946.20.85.202).

- (x) Put the plastic pitot tube (35) in position against the fitting (15) (P/N 946.20.85.202).
- (y) Make a mark on the plastic pitot tube (35) to show this position.
- (z) Cut the plastic tube (35) at the position marked in the previous Step.
- (aa) Put the nut (36) (part of the fitting (P/N 946.01.17.101)) on the plastic tube (35).
- (ab) Put the sleeve (37) (part of the fitting (P/N 946.01.17.101)) on the plastic tube (35).
- (ac) Put the insert (17) (P/N 946.01.17.197) in the end of the plastic tube (35).
- (ad) Connect the nut (36) (part of the fitting (P/N 946.01.17.101)) to the connector (16) (part of the fitting (P/N 946.01.17.101)).
- (ae) Put the clamp (20) (P/N 946.31.05.703) on the electrical wires (43) to the pitot tube.
- (af) Put the clamp (20) (P/N 946.31.05.703) against the water container (24) (P/N 534.11.21.021) and install the screw (18) (P/N 935.63.12.064) and the washer (19) (P/N 938.77.11.112).

**C. Close-Up**

- (1) Do the pitot-system leak-check (Ref. AMM, 34-11-00-00A-364A-A).

**NOTE:** For the location of the access items, refer to AMM, 06-40-00-00A-055A-A.

- (2) Install the access panels RB38 and RB39.

**D. Documentation**

- (1) Make an entry in the Aircraft Logbook that this Service Bulletin has been incorporated.
- (2) Use the Service Bulletin Evaluation Sheet and report your results and the serial number of the aircraft to PILATUS.

**4. Accomplishment Instructions**

**NOTE:** These instructions are only applicable to aircraft that have had this Service Bulletin accomplished at the Initial Issue.

**WARNING:** MAKE SURE THAT BOTH EJECTION SEATS HAVE THE SAFETY PINS INSTALLED IN THE SAFE FOR SERVICING LOCATIONS AND THAT THE CFS HAS THE SAFETY PIN INSTALLED IN THE SAFE POSITION BEFORE YOU GO INTO THE COCKPIT (REF. AMM, 95-00-00-00A-012A-A).

**NOTE:** To accomplish this part of the Service Bulletin, you will require the mechanics tool kit, P/N 990.00.02.004

**A. Preparation**

**NOTE:** For the location of the access items, refer to AMM, 06-40-00-00A-055A-A.

Remove the access panels RB38.

**B. Modification**

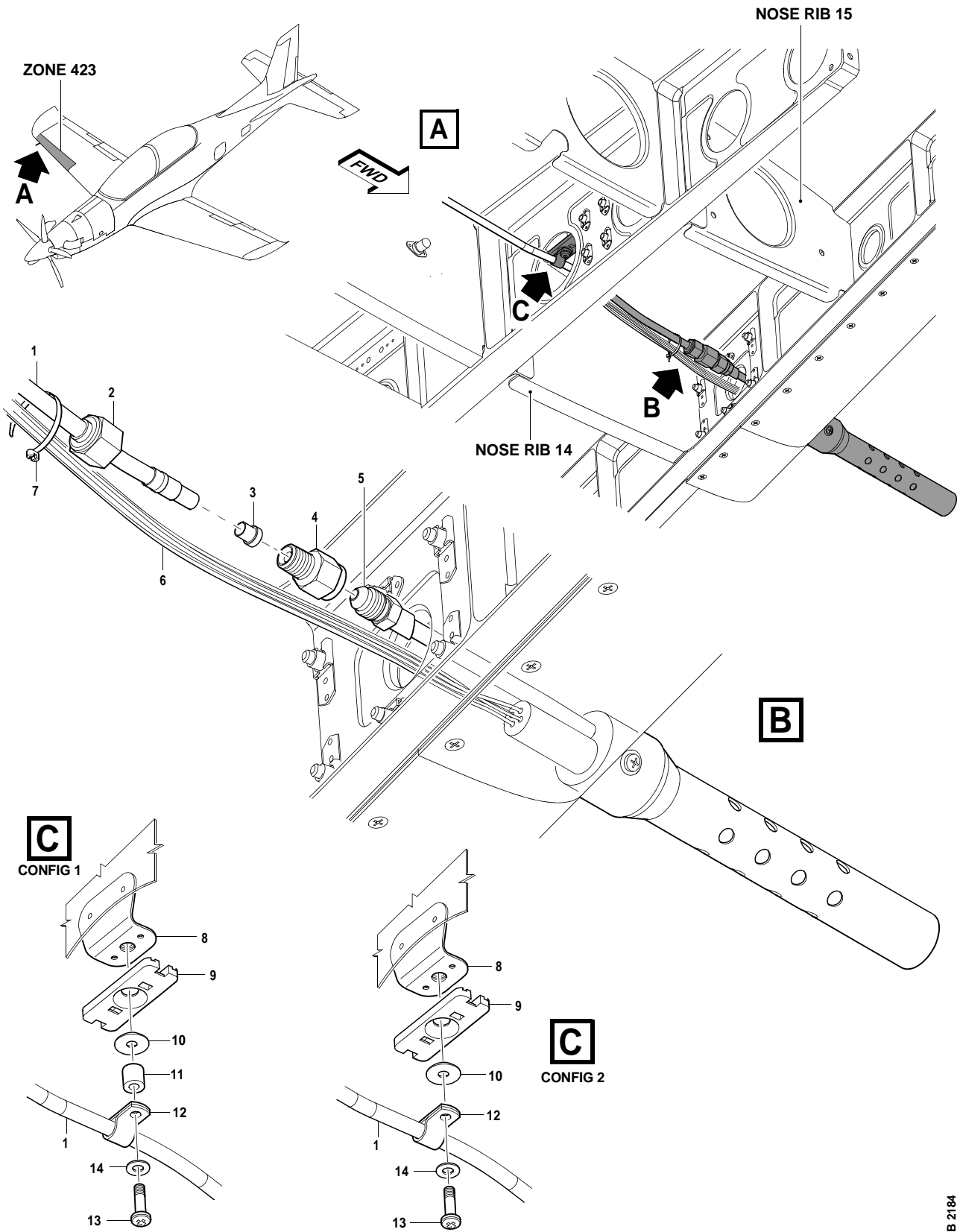
- (1) Remove the screw (18) (P/N 935.63.11.062) and the washer (19) (P/N 938.77.11.111).
- (2) Make sure the clamp (20) (P/N 946.31.05.703) stays in position around the electrical wires.
- (3) Discard the screw (18) (P/N 935.63.11.062) and the washer (19) (P/N 938.77.11.111).
- (4) Put the clamp (20) (P/N 946.31.05.703) against the water container (24) (P/N 534.11.21.021) and install the new screw (18) (P/N 935.63.12.064) and the new washer (19) (P/N 938.77.11.112).

**C. Close-Up**

- (1) Remove all equipment, tools and materials from the work area. Make sure that the work area is clean.
- (2) Install the access panels RB38.

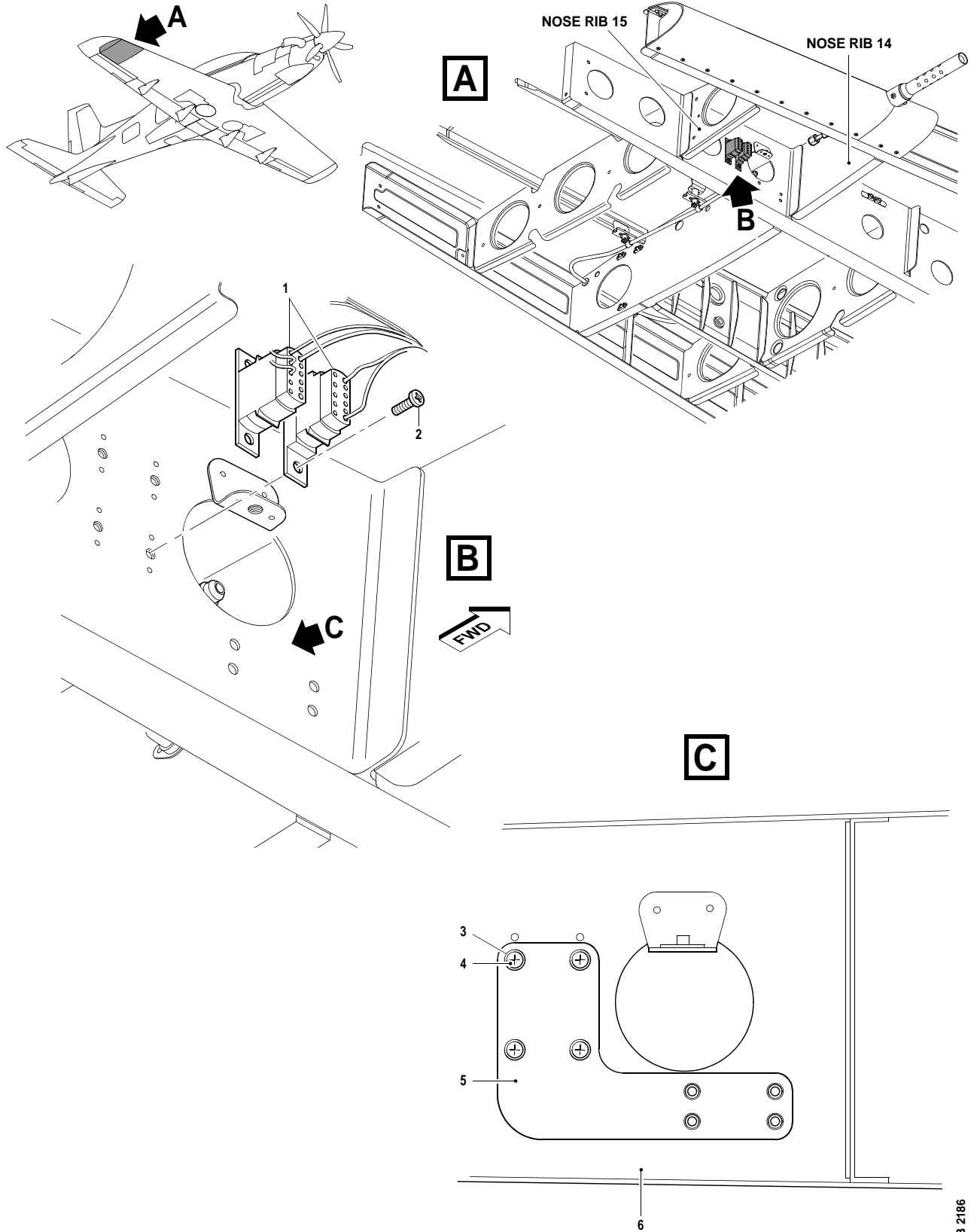
**D. Documentation**

- (1) Make an entry in the Aircraft Logbook that Para. 4 of this Service Bulletin has been accomplished.
- (2) Use the Service Bulletin Evaluation Sheet and report your results and the serial number of the aircraft to PILATUS.



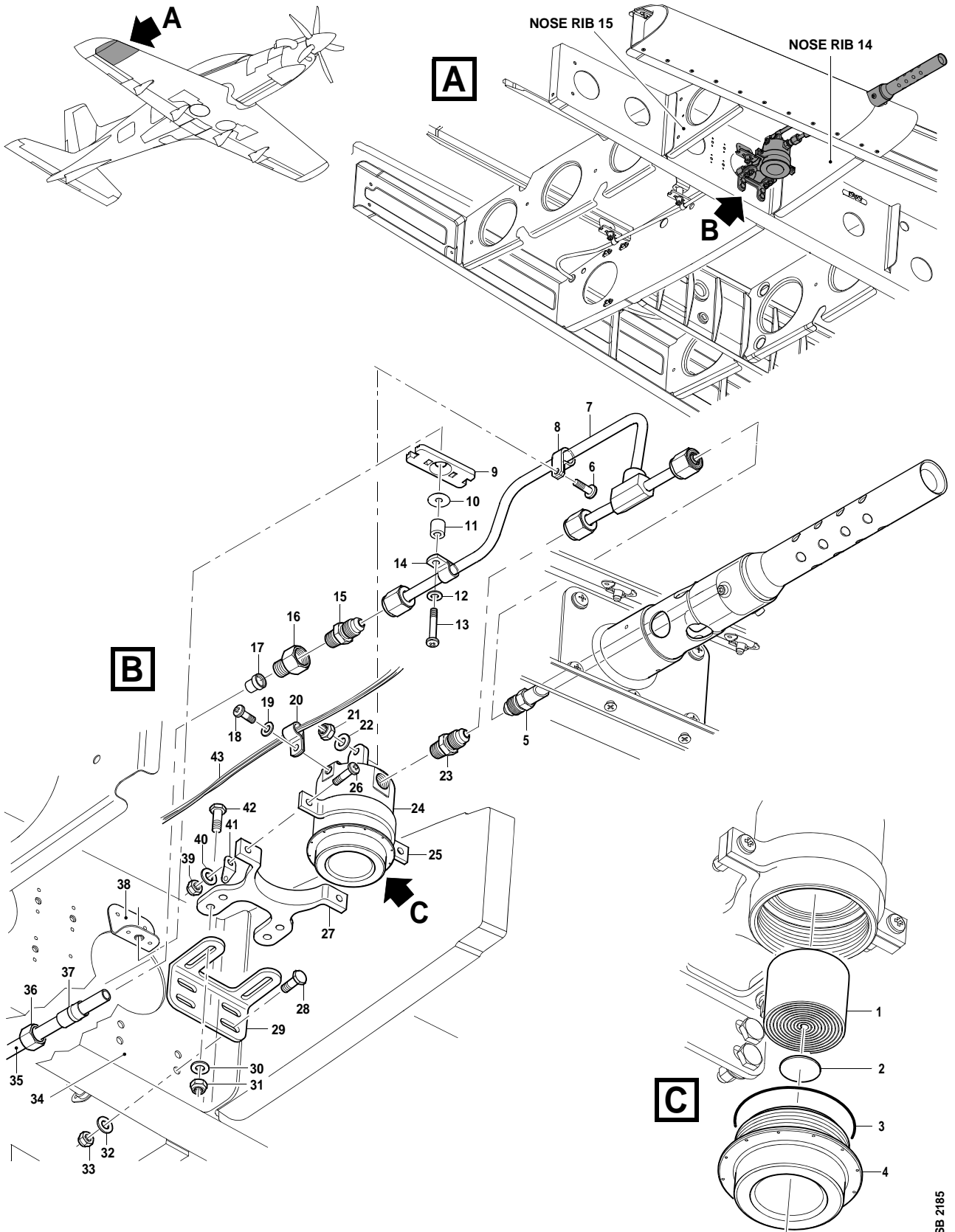
Disconnect the Plastic Tube Assembly  
Figure 1

SB 2184



Installation of the Template  
Figure 2

SB 2186



Install the Modified System Parts  
Figure 3

SB 2185



SERVICE BULLETIN EVALUATION SHEET FOR SB No. 34-005			
Title	Navigation - Flight Environment Data Modification to the Pitot System		
Customer			
Service Center			
EMBODIMENT REPORTING			
This SB has been embodied:		<input type="checkbox"/>	On the entire fleet
		<input type="checkbox"/>	Only partially
Provide embodiment details per aircraft (use additional copies of this table, if necessary)			
MSN	Flying Hours	MSN	Flying Hours
Additional embodiment comments/findings			
EDITORIAL COMMENTS (procedure, kit quality, suggested improvements, etc.)			
Name	Signature	Date	
Please complete and forward this form to: Pilatus Aircraft LTD, Customer Technical Support (MCC), P.O. BOX 992, 6371 Stans, Switzerland Fax: +41 (0)41 619 6773 Email: Techsupport@pilatus-aircraft.com			

**SERVICE BULLETIN EVALUATION SHEET**

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