

SERVICE BULLETIN

SERVICE BULLETIN NO: 53-002

REF NO: 190

MODIFICATION NO: EC-05-0248

ATA CHAPTER: 53

FUSELAGE STOP NUTS - REPLACEMENT

1. Planning Information

A. Effectivity

PC-6 aircraft MSN 101 thru MSN 949 and MSN 2001 thru MSN 2092.

B. Concurrent Requirements

None

C. Reason

(1) Problem

Operators have reported loose (all steel type) self-locking stop nuts (nuts) (938.07.65.105) in the fastener assemblies of the tail landing gear in some PC-6 aircraft. This problem could also occur in equivalent fastener assemblies at other locations in the aircraft.

(2) Solution

Identify, and if necessary, replace nuts (and other applicable parts) as specified in the table (FASTENER ASSEMBLY - REPLACEMENT DATA).

The new nuts (938.07.31.108) are Nyloc type nuts and they are similar to the initially installed nuts (938.07.34.104) therefore:

- It is not necessary to replace the initially installed nuts (938.07.34.104) with new nuts (938.07.31.108) if you find them installed at the given locations in the aircraft
- You can also replace nuts (938.07.65.105) with nuts (938.07.34.104) if held as spares

LOCATION	REMOVE	INSTALL
TAIL LANDING GEAR	SELF LOCKING NUTS (938.07.65.105)	SELF LOCKING NUTS (938.07.31.124)
PARACHUTE CABLE ASSEMBLY	SELF LOCKING NUT (938.07.65.105)	SELF LOCKING NUT (938.07.31.108) OR (938.07.34.104)
WATER TANK ASSEMBLY	SELF LOCKING NUTS (938.07.65.105)	SELF LOCKING NUTS (938.07.31.124)
CABLE TENSIONER ASSEMBLY	SELF LOCKING NUT (938.07.65.105)	SELF LOCKING NUT (938.07.31.108) OR (938.07.34.104)

FASTENER ASSEMBLY - REPLACEMENT DATA

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LOCATION	REMOVE	INSTALL
FUEL FILTER ASSEMBLY	SELF LOCKING NUTS (938.07.65.105)	SELF LOCKING NUT (938.07.31.108) OR (938.07.34.104)
HYDRAULIC PUMP ASSEMBLY	SELF LOCKING NUTS (938.07.65.105)	SELF LOCKING NUTS (938.07.31.124)
ENGINE MOUNTINGS	SELF LOCKING NUTS (938.07.65.105), (938.07.34.104) OR (938.07.31.108), WASHERS (938.81.11.507) AND BOLTS (932.53.47.213)	CASTELLATED NUTS (938.08.47.105) WASHERS (938.71.51.108) BOLTS (932.53.47.214) AND COTTER PINS (940.17.03.226)

FASTENER ASSEMBLY - REPLACEMENT DATA (CONTINUED)

D. Description

This Service Bulletin gives the data and instructions necessary to identify and if necessary replace the specified nuts and/or fastener assemblies.

Revision 1 to this Service Bulletin incorporates part number changes to the engine mounting bolts in the tables: Fastener Assembly - Replacement Data and Material to be Purchased. Other minor changes are also included.

Revision 2 to this Service Bulletin corrects an error to a component part number in Accomplishment Instructions, Para. 3.H.(1). It also updates the Service Bulletin to the latest standard.

E. Compliance

Mandatory.

Required within the next 12 calendar months after the effective date of this Service Bulletin, unless already accomplished.


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
Preparation	1.0
Nut Replacement - Tail Landing Gear	0.5
Nut Replacement - Parachute Cable Assembly	0.5
Nut Replacement - Water Tank Assembly	0.5
Nut Replacement - Cable Tensioner Assembly	0.5
Nut Replacement - Fuel Filter Assembly	0.5


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	Total
Nut Replacement - Hydraulic Pump Assembly	0.5
Fastener Assembly Replacement - Engine Mountings	2.0
Close-up	1.5
TOTAL MAN-HOURS	7.5

H. Weight and Balance

(1) Weight Change

Not affected.

(2) Moment Change

Not affected.

I. Electrical Load Data

Not changed.

J. Software

Not changed.

K. References

Aircraft Maintenance Manual (AMM): 06-40-00, 07-10-00 and 20-10-01.

Illustrated Parts Catalog (IPC): 25-25-02, 25-28-01, 27-45-11, 28-21-01, 32-71-01, 32-77-01 and 71-21-01.

L. Publications Affected

IPC: 25-25-02, 25-28-01, 27-45-11, 28-21-01, 32-71-01, 32-77-01 and 71-21-01

M. Interchangeability of Parts

Pre and Post-Service Bulletin 53-002 items are not interchangeable.

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2. Material Information

A. Material - Price and Availability

Not applicable. Modification kit not necessary for this Service Bulletin.

B. Material Necessary for Each Aircraft

(1) Material to be Purchased

Operators must order the following parts from PILATUS as necessary for their aircraft:

NEW PART NO.	DESCRIPTION	OLD PART NO.	QTY	DISP. CODE	FIG	ITEM
932.53.47.214	BOLT - HEX HD (VN534/M8*28/14)	932.53.47.213	2	D	7	1
938.07.31.108	NUT - HEX SLF LKG (8PA106). ALTERNATIVE TO 938.07.34.104	938.07.65.105	A/R	D	2-6	1
938.07.31.124	NUT - HEX SLF LKG THIN (8TA10BE)	938.07.65.105	2	D	1	1
938.08.47.105	NUT - HEX CSTLTD (NFL22451BC080L)	938.07.34.104 938.07.65.105 938.07.31.108	2	D	7	3
938.71.51.108	WASHER (NFL23111CA080)	938.81.11.507	2	D	7	2
940.17.02.226	PIN - COTTER STEEL (MS24665-134)	N/A	2	D	7	4

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

(2) Operator Supplied Materials

Not applicable.

C. Reidentified Parts

Not applicable.

D. Tooling - Cost and Availability

Not applicable.

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3. Accomplishment Instructions - Aircraft

A. Preparation

- (1) Open the cabin doors.
- (2) Open or remove as necessary the door FR2, access panel PB2, cowlings PT1, PL1 and PR1 (Ref. AMM, 06-40-00, Page Block 1).

B. Nut Replacement - Tail Landing Gear (Ref. Fig. 1)

CAUTION: DO NOT DISASSEMBLE THE TWO FASTENER ASSEMBLIES AT THE SAME TIME TO REPLACE THE NUTS. THIS CAN CAUSE DAMAGE.

- (1) Do an inspection to identify the nut (1). You must replace nuts (938.07.65.105) with nuts (938.07.31.124).
- (2) Replace the left nut (Ref. IPC, 32-71-01, Fig. 01). This step is only necessary if you found nuts (938.07.65.105) in Step (1).
 - (a) Lift the rear of the aircraft and put the tail stand in position (Ref. AMM, 07-10-00, Page Block 201).
 - (b) Disassemble and remove the nut (1) washer (2) and the bolt (3). Discard the nut.
 - (c) Install the bolt (3), washer (2) and new nut (1).
- (3) Do Step (2), (b) and (c) again to replace the right nut.
- (4) Remove the tail stand (Ref. AMM, 07-10-00, Page Block 201).

C. Nut Replacement - Parachute Cable Installation (if Installed) (Ref. Fig. 2)

- (1) In the cabin, do an inspection to identify the nut (1). You must replace a nut (938.07.65.105) with a nut (938.07.31.108) or (938.07.34.104).
- (2) Replace the nut (Ref. IPC, 25-25-02, Fig. 01). This step is only necessary if you found a nut (938.07.65.105) in Step (1).
 - (a) Remove the nut (1) from the clevis (2). Discard the nut.
 - (b) Install the new nut (1) on the clevis (2).

D. Nut Replacement - Water Tank Assembly (if Installed) (Ref. Fig. 3)

- (1) In the cabin, do an inspection to identify the nut (1). You must replace a nut (938.07.65.105) with a nut (938.07.31.124).
- (2) Replace the nut (Ref. IPC, 25-28-01, Fig. 01). This step is only necessary if you found a nut (938.07.65.105) in Step (1).
 - (a) Remove the nut (1) from the sliding carriage and lever assembly (2). Discard the nut.
 - (b) Install the new nut (1) on the sliding carriage and lever assembly (2).

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E. Nut Replacement - Cable Tensioner Assembly (Ref. Fig. 4)

- (1) In the rear fuselage, do an inspection to identify the nut (1). You must replace a nut (938.07.65.105) with a nut (938.07.31.108).
- (2) Replace the nut (Ref. IPC, 27-45-11, Fig. 01). This step is only necessary if you found a nut (938.07.65.105) in Step (1).
 - (a) Remove the nut (1) and washer (2) from the bolt (3). Do not remove the bolt when you do this. Discard the nut.
 - (b) Install the washer (2) and new nut (1) on the bolt (3).

F. Nut Replacement - Fuel Filter Assembly (Ref. Fig. 5)

- (1) In the engine compartment, do an inspection to identify the nuts (1). You must replace nuts (938.07.65.105) with nuts (938.07.31.108) or (938.07.34.104).
- (2) Replace the nuts (Ref. IPC, 28-21-01, Fig 01). This step is only necessary if you found nuts (938.07.65.105) in Step (1).
 - (a) In the nose section forward of the auxiliary bulkhead (4), remove the nuts (1) and washers (2) from the studs of the fuel filter assembly (3). Discard the nuts.
 - (b) Install the washers (2) and new nuts (1) on the studs of the fuel filter assembly (3).

G. Nut Replacement - Hydraulic Pump Assembly (if Installed) (Ref. Fig. 6)

- (1) Do an inspection to identify the nuts (3). You must replace nuts (938.07.65.105) with nuts (938.07.31.124).
- (2) Replace the nuts (Ref. IPC, 32-77-01, Fig 01) This step is only necessary if you found nuts (938.07.65.105) in Step (1).
 - (a) Remove the nuts (3) and washers (2) from the screws (1). Discard the nuts.
 - (b) Install the washers (2) and new nuts (3) on the screws (1).

H. Nut Replacement - Engine Mountings (Ref. Fig. 7)

- (1) Do an inspection to identify the nuts (in the fasteners assemblies) which attach the strut assemblies (5) and (6) to the engine mount assembly (10) (Ref. IPC, 71-21-01, Fig 01). Self locking nuts (938.07.65.105), (938.07.31.108) or (938.07.34.104) are not permitted.

Self locking nuts must be replaced with castellated nuts (938.08.47.105). It is recommended (but not necessary) that you also replace the related bolts (932.53.47.213) and washers (938.81.11.507) at the same time.

Steps (2) thru (5) are only applicable if you found self locking nuts (7) in this step.

CAUTION: YOU MUST SUPPORT THE ENGINE WITH A TRESTLE (OR EQUIVALENT EQUIPMENT) BEFORE YOU DISCONNECT THE LEFT OR RIGHT STRUT. UNWANTED MOVEMENT OF THE ENGINE CAN CAUSE DAMAGE TO THE ENGINE MOUNTING ASSEMBLIES.

- (2) Install a trestle (or equivalent) to support the engine.

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CAUTION: DO NOT DISCONNECT THE LEFT AND RIGHT STRUT ASSEMBLIES AT THE SAME TIME. UNWANTED MOVEMENT OF THE ENGINE CAN CAUSE DAMAGE TO THE ENGINE MOUNTING ASSEMBLIES.


- (3) Replace the fastener assembly of the left strut assembly.
 - (a) Remove and discard the nut (7).
 - (b) Remove and discard the washer (8) and bolt (9) if you are going to replace them.
 - (c) Temporarily install the new nut (3) on the bolt (9) or assemble the new nut with the new washer (2) and new bolt (1).
 - (d) Torque the nut (3) to between 10,5 and 12,5 Nm (95 and 110 lb in.).
 - (e) Make a mark on the threaded part of the bolt (1) or (9) to show the location of the cotter pin hole. Do this between two of the castellation tangs on the nut (3).
 - (f) Remove the nut (3), washer (2) or (8) and bolt (1) or (9).
 - (g) Make the cotter pin hole in the bolt (1) or (9) with a 1,7 mm (0.07 in.) diameter drill. Do this with a pillar drill (or equivalent) to make sure the cotter pin hole goes through the middle of the bolt shank. Make sure there are no sharp edges.
 - (h) Install the bolt (1) or (9), washer (2) or (8) and nut (3).
 - (i) Torque the nut (3) to between 10,5 and 12,5 Nm (95 and 110 lb in.).
 - (j) Install the cotter pin (4) (Ref. AMM, 20-10-01, Page Block 201).
- (4) Do Step (3) again to replace fastener assembly of the right strut assembly.
- (5) Remove the engine support.

I. Close up

- (1) Remove all tools and materials. Make sure the work areas are clean.
- (2) Close or install as necessary the door FR2, access panel PB2, cowlings PT1, PL1 and PR1 (Ref. AMM, 06-40-00, Page Block 1).

J. Documentation

Make an entry in the Aircraft Logbook that the applicable procedures in this Service Bulletin have been incorporated.


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4. Accomplishment Instructions - Spares

A. Nut Replacement - Water Tank Assembly (Ref. Fig. 3)

This procedure is applicable to all water tank assemblies held as spare.

- (1) Do an inspection to identify the nut (1). You must replace a nut (938.07.65.105) with a nut (938.07.31.124).
- (2) Replace the nut (Ref. IPC, 25-28-01, Fig. 01). This step is only necessary if you found a nut (938.07.65.105) in Step (1)
 - (a) Remove the nut (1) from the sliding carriage and lever assembly (2). Discard the nut.
 - (b) Install the new nut (1) on the sliding carriage and lever assembly (2).

B. Nut Replacement - Hydraulic Pump Assembly (if Installed) (Ref. Fig. 6)

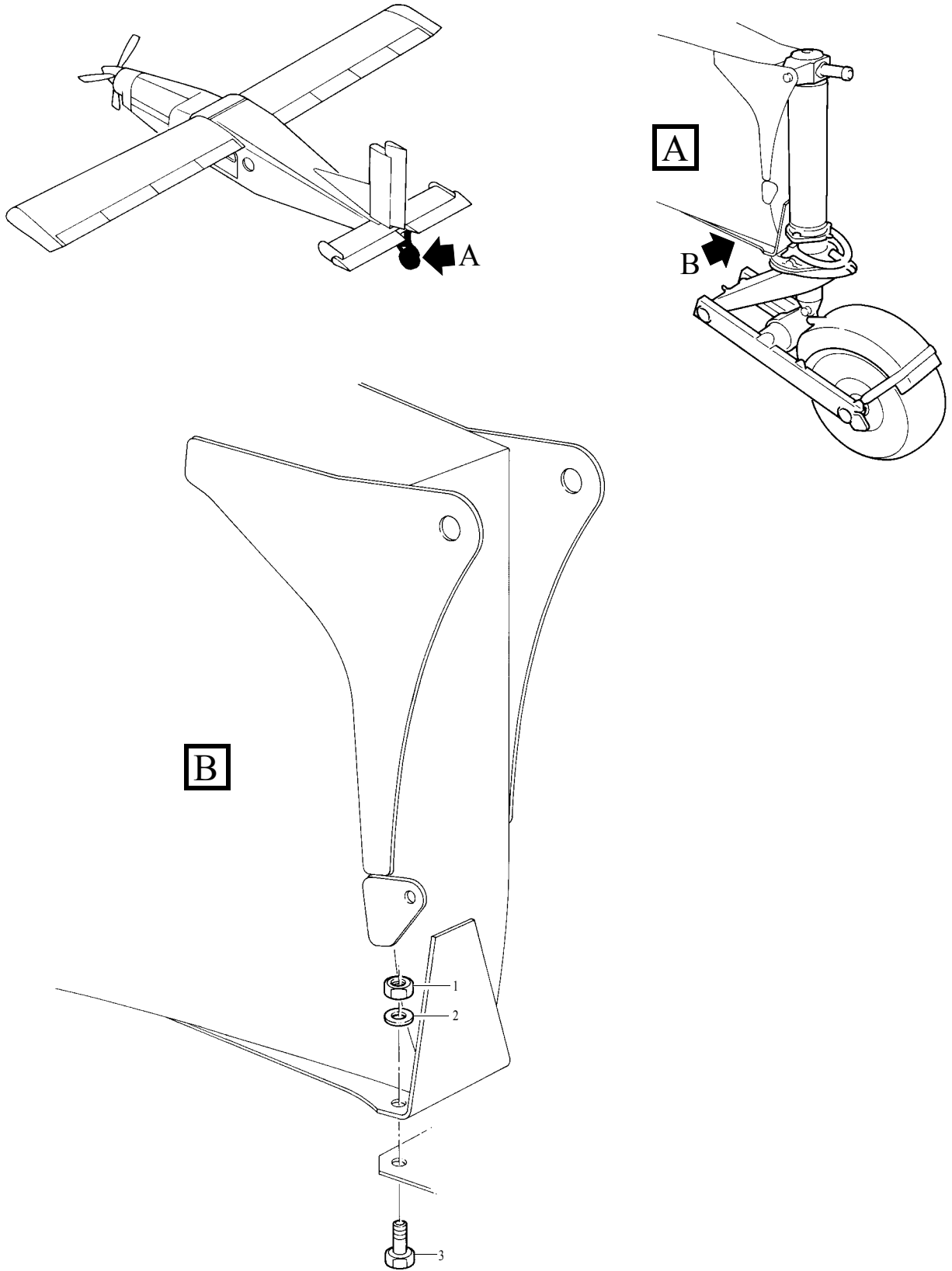
This procedure is applicable to all hydraulic pump assemblies held as spare.

- (1) Do an inspection to identify the nuts (3). You must replace nuts (938.07.65.105) with nuts (938.07.31.124).
- (2) Replace the nuts (Ref. IPC, 32-77-01, Fig 01) This step is only necessary if you found nuts (938.07.65.105) in Step (1).
 - (a) Remove the nuts (3) and washers (2) from the screws (1). Discard the nuts.
 - (b) Install the washers (2) and new nuts (3) on the screws (1).

C. Documentation

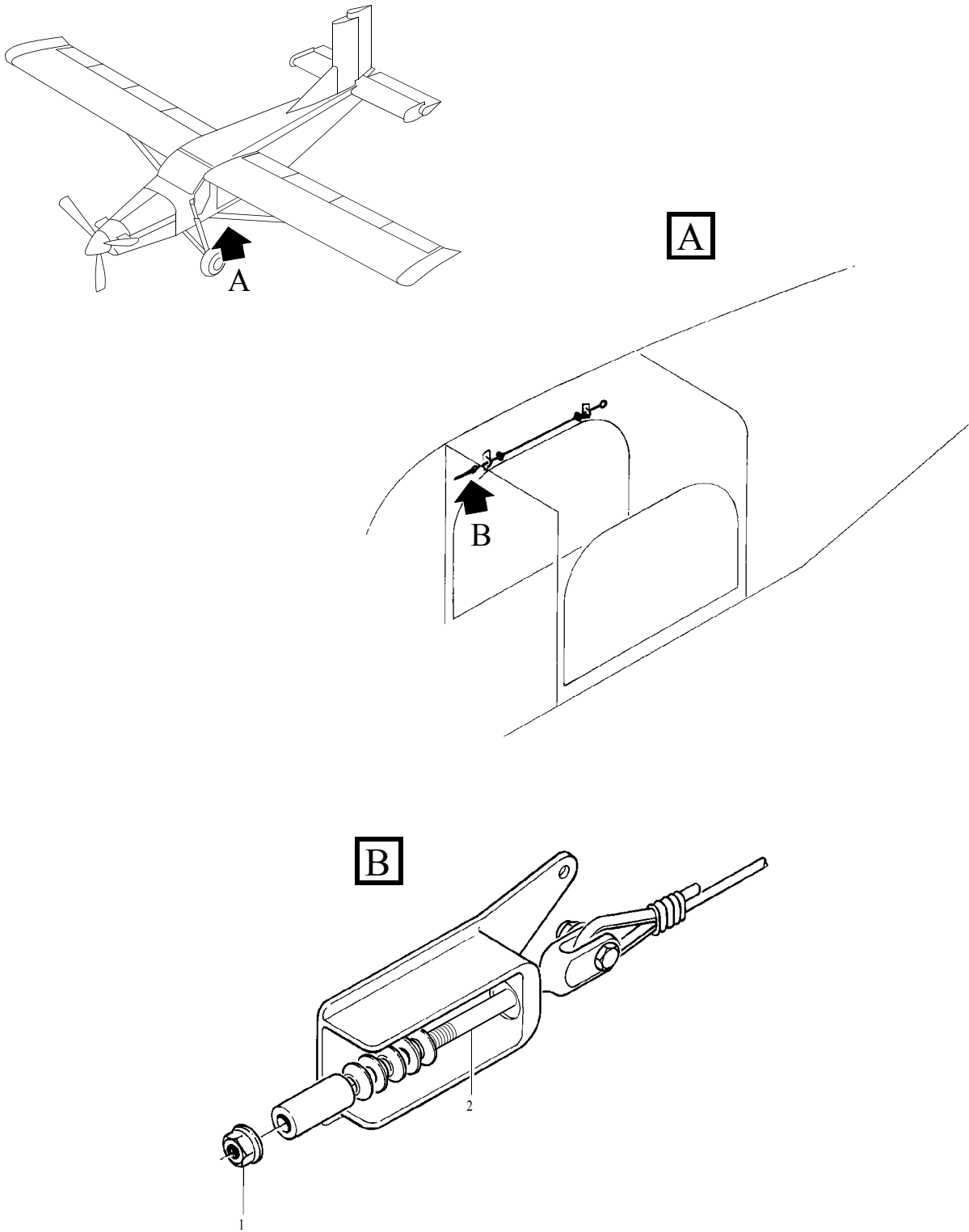
Make an entry in the Equipment Logbook that the applicable procedures in this Service Bulletin have been incorporated.

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Tail Landing Gear - Nut Replacement
Figure 1

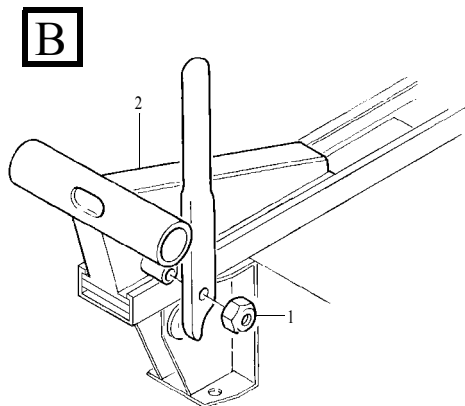
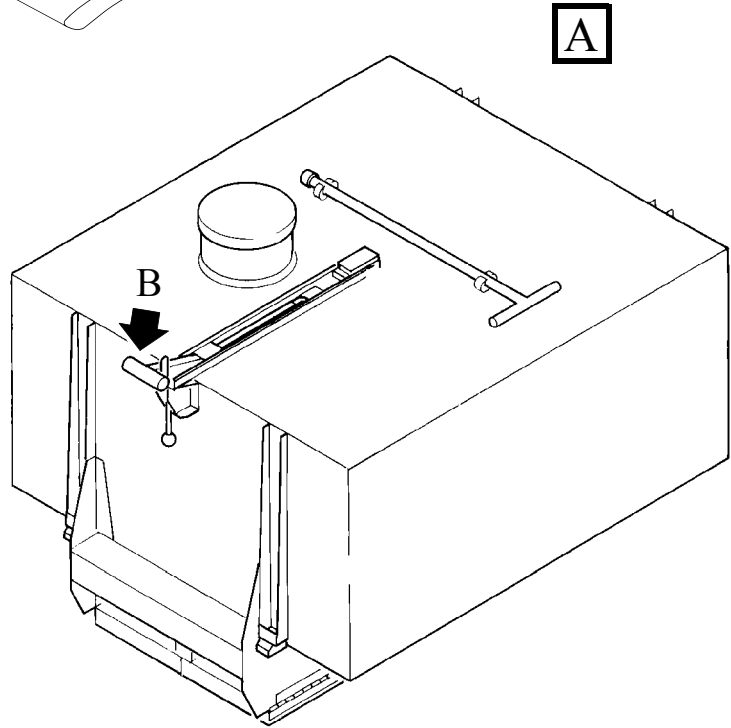
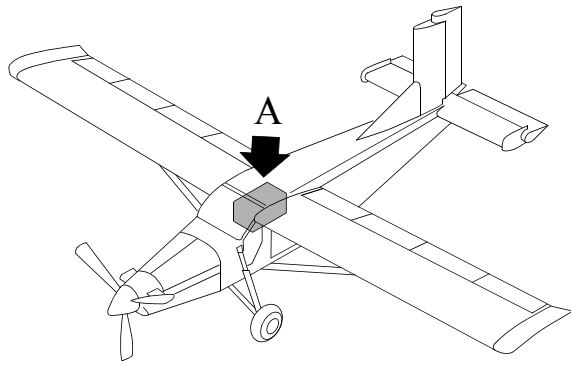
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Parachute Cable Assembly - Nut Replacement
Figure 2

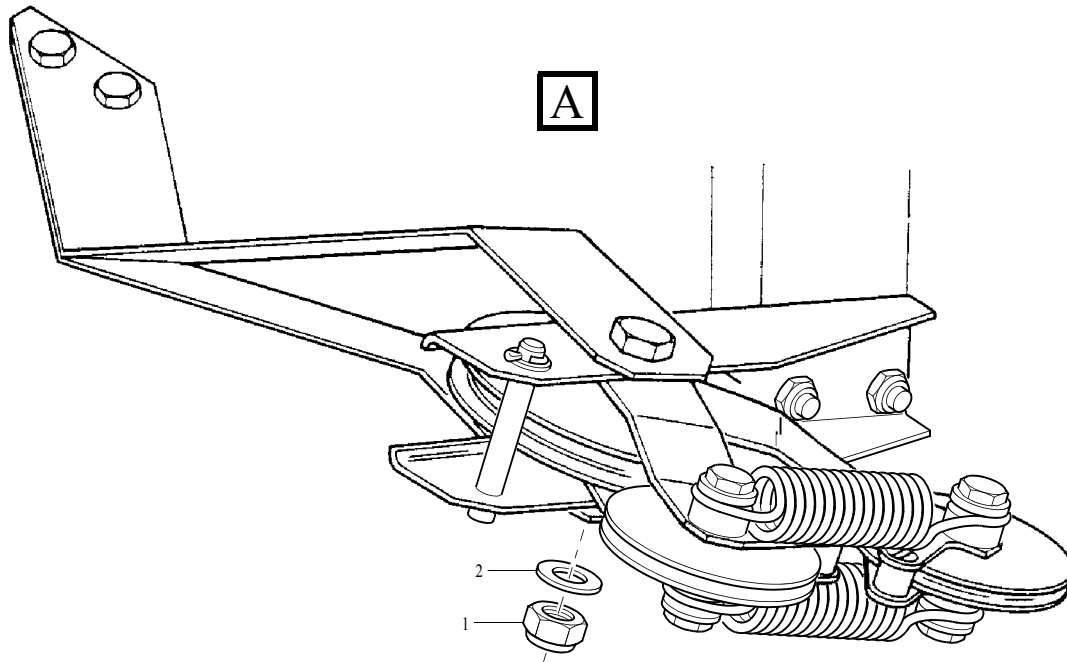
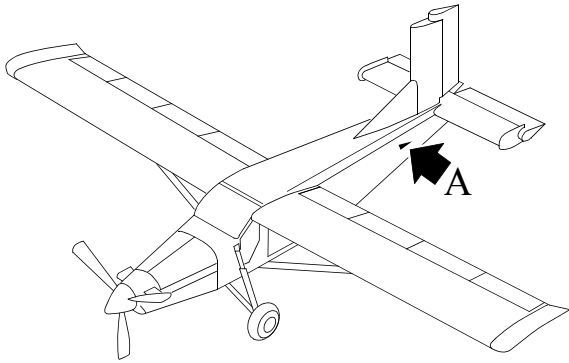
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Water Tank Assembly - Nut Replacement
Figure 3

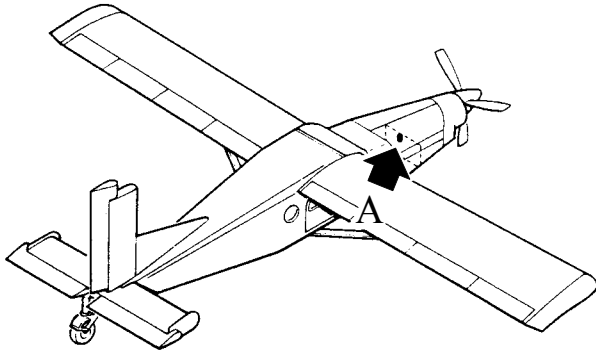
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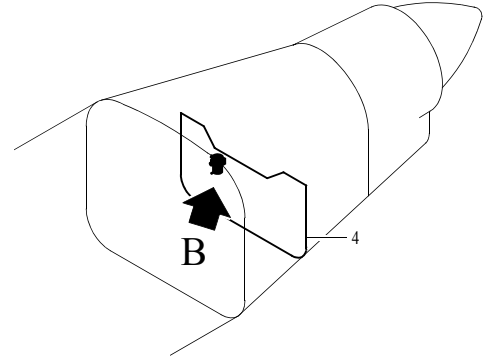
Cable Tensioner Assembly - Nut Replacement
Figure 4

SB 1563

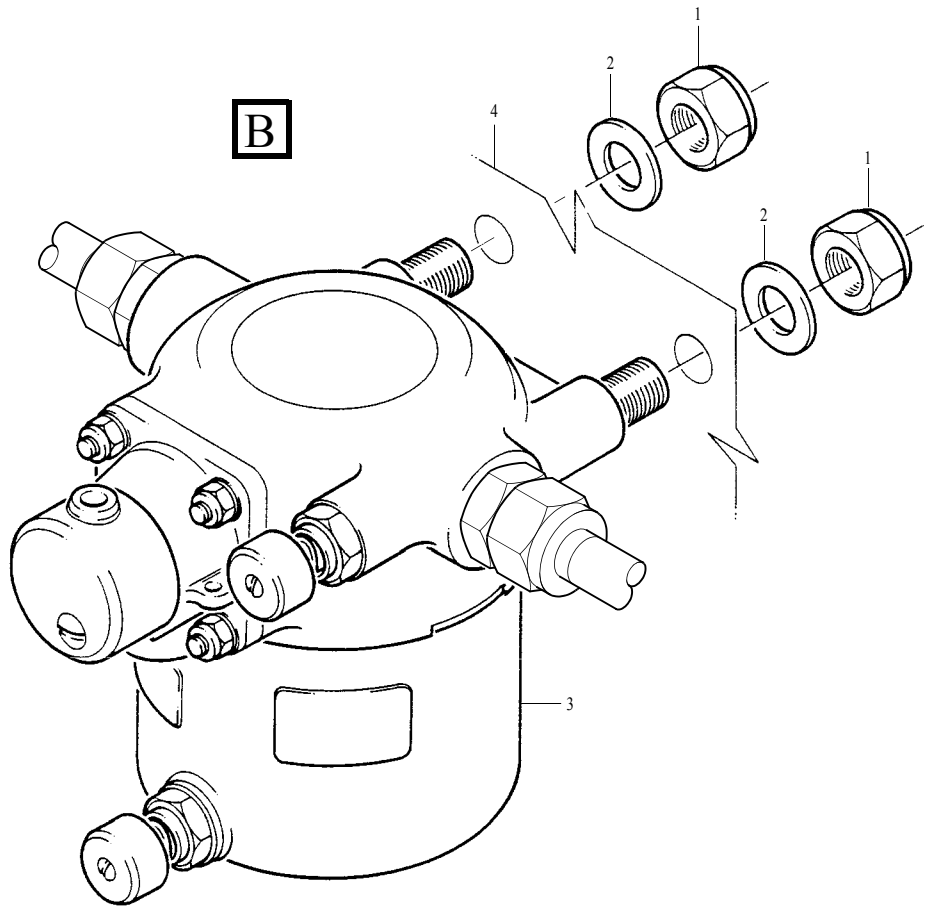
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A

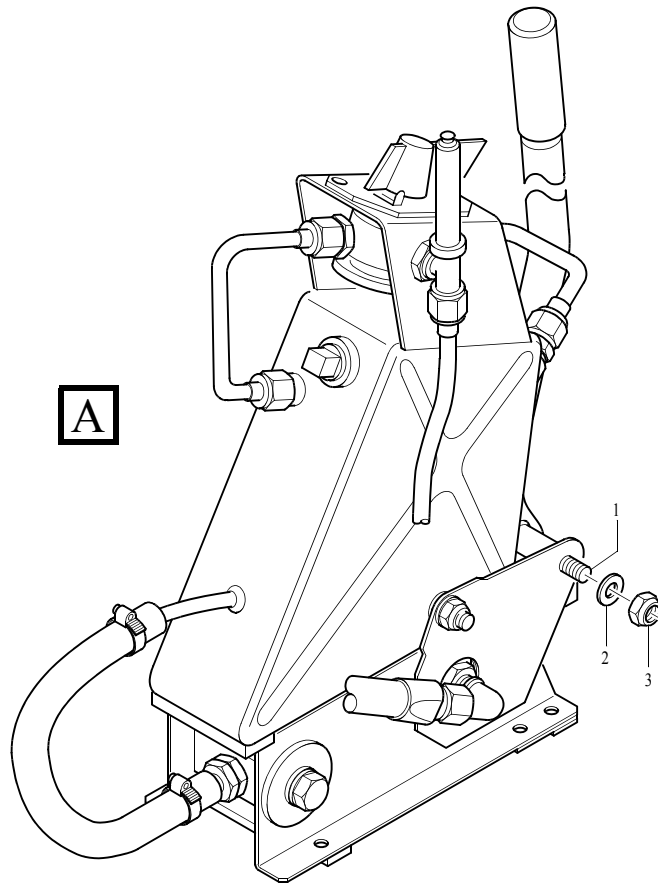
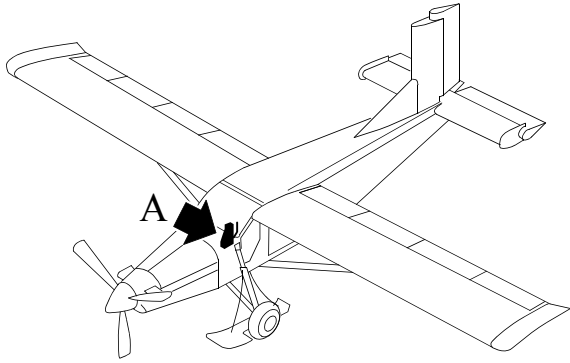


B



Fuel Filter Assembly - Nut Replacement
Figure 5

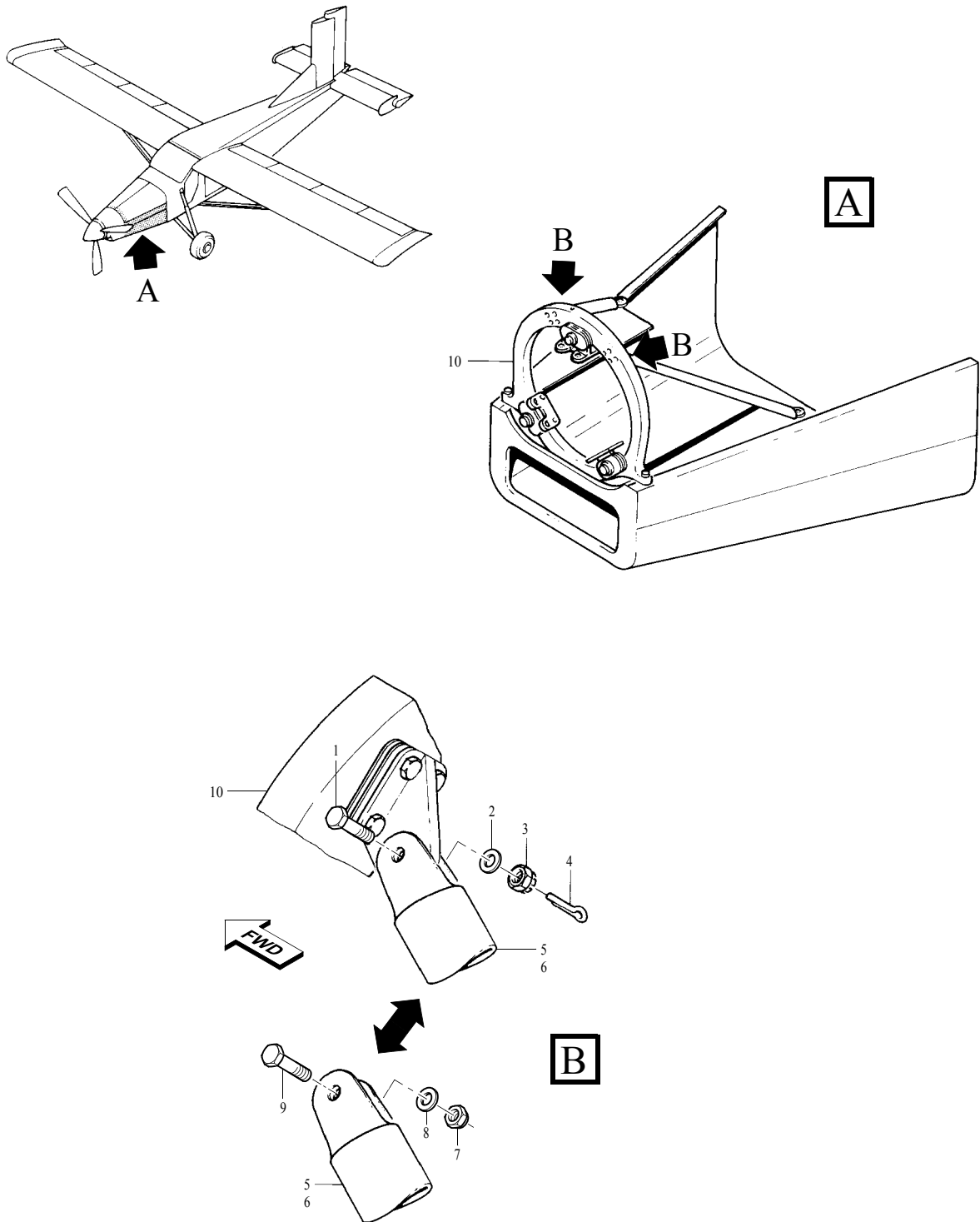
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Hydraulic Pump Assembly - Nut Replacement
Figure 6

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Engine Mountings - Fastener Assembly Replacement
Figure 7

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