

Service Bulletin No: 32-029

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ATA Chapter: 32

**LANDING GEAR - NOSE LANDING GEAR
FORK ASSEMBLY - INSPECTION, REPAIR AND REPLACEMENT****1. Planning Information****A. Effectivity**

All PC-12 Nose Landing Gear (NLG) cylinder pipe P/N 532.20.12.145 with Serial Numbers SI-0871 thru 0894 and SI-0897 thru 0899 installed as part of the nose-wheel fork assembly P/N 532.20.12.112 and/or NLG strut assembly P/N 532.20.12.044 on PC-12, PC-12/45, PC-12/47 and PC-12/47E Series aircraft and/or held as spares.

The cylinder pipe with the above listed P/N and Serial Numbers were installed on new production NLG strut assemblies P/N 532.20.12.044 with Serial Numbers SI-1211 thru SI-1238 and SI-1243 thru SI-1252 on some of the new production PC-12/47E MSN 1852, 1853, 1859, 1861, 1862, 1865 thru 1871, 1879, 1884, 1889 thru 1893, 1898, 1899, 1903, 1904, 1907 thru 1910, 1919, 1934 and 1935 or were delivered as spares within P/N 532.20.12.112 or 532.20.12.044.

This Service Bulletin has been incorporated during production on MSN 1890, 1898, 1904, 1908, 1919, 1934, 1935 thru 1942 and 2001 and up. In-service MSN 1764, 1868 and 1869 were corrected based on aircraft malfunction reports.

All PC-12, PC-12/45, PC-12/47 and PC-12/47E Series aircraft which have replaced the nose-wheel fork assembly P/N 532.20.12.112 or NLG strut assembly P/N 532.20.12.044 between 13 March 2019 and the issue date of this Service Bulletin may also be affected by the use of spares.

B. Concurrent Requirements

None.

C. Reason**(1) Problem**

Reports have been received of corrosion found on the cylinder pipe (P/N 532.20.12.145) at the nose wheel fork interface.

(2) Cause

The corrosion is a result of a manufacturing deviation in the cadmium plating of a batch of cylinder pipes resulting in exposed unprotected raw material. The affected area is cadmium or hard chrome plated or has primer and top coat applied to the surface.

(3) Solution

Inspect the NLG strut assemblies and repair or replace the nose-wheel fork assembly as necessary. The cylinder pipe Serial Numbers are visible after disassembly of the nose-wheel fork assembly P/N 532.20.12.112. The exposed raw material and corrosion are visible without disassembly of the NLG.

D. Description

This Service Bulletin gives the data and instructions to inspect the nose-wheel fork assembly and to repair or replace it as necessary.

The serial number of the NLG strut assembly is shown on the identification label which is installed on the forward surface of the main fitting integral-assembly.

The initial issue of this Service Bulletin was issued to identify and remove from service one batch of cylinder pipes which were manufactured with no cadmium plating at a specific location. Service feedback revealed cadmium plating corrosion at this location resulting in exposed raw material after some service time as well. The risk for cylinder pipe failure due to stress corrosion and embrittlement was reassessed as not present.

Revision 1 of this Service Bulletin:

- Introduces a new repair procedure for the cylinder pipes which were manufactured with no cadmium plating at the specific location
- Updates the material section for the scraper ring (P/N 946.97.16.342/344)
- Updates the nose-wheel fork assembly procedures for replacement.

The cylinder pipe repair procedure contains the identification of the type of corrosion to determine the difference between cylinder pipes with or without cadmium plating at the specific location. Cylinder pipes with cadmium plating at the specific location are not affected by this Service Bulletin, refer to AMM 32-20-01-02A-313A-A.

No further work is necessary for operators who have accomplished this Service Bulletin at initial issue.

E. Compliance

Mandatory, not for safety aspects, but from a reliability point of view to treat the exposed and unprotected raw material.

To be incorporated not later than the next 660 flying hours or 13 months, whichever comes first after the release date of Revision 1 of this Service Bulletin.

NLG held as spares shall be checked before their installation on an aircraft or within 13 months, whichever comes first after the release date of Revision 1 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 designated Airworthiness Authority for any changes, local regulations or sanctions that may affect the embodiment of this Service Bulletin.

G. Copyright and Legal Statement

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H. Manpower

Description	Man hours - Aircraft		Man hours - Spare NLG Strut Assemblies	
	Repair	Replacement	Repair	Replacement
Preparation	0.25	0.25	-	-
Inspection - Aircraft	0.5	0.5	-	-
Inspection - Spare NLG Strut Assy	-	-	0.25	0.25
Repair of the Cylinder Pipe	4.0	-	4.0	-
Replacement of the Nose-wheel Fork Assembly	-	6.0	-	6.0
Close up	0.25	0.25	0.25	0.25
TOTAL MAN-HOURS	5.0	7.0	4.5	6.5

NOTE: Man hours do not include the drying time for primer, sealant or paints.

I. Weight and Balance

Not changed.

J. Electrical Load Change Data

Not changed.

K. Software

Not changed.

L. References

NOTE: When references are given without the model identifier:

- For PC-12, PC-12/45 and PC-12/47 aircraft use the prefix 12-A
- For PC-12/47E aircraft use the prefix 12-B or 12-C as necessary.

Aircraft Maintenance Manual (AMM):

07-10-00-00A-901A-A	12-20-04-00A-902A-A
20-31-00-00A-070A-A	20-40-10-00A-901A-A
32-00-00-00A-901A-A	32-00-00-00A-901B-A
32-20-00-00A-902A-A	32-20-01-02A-313A-A
32-30-00-00A-903A-A	32-30-00-00A-903B-A
32-40-02-00A-920A-A	

Tool and Equipment Manual (TEM):

00-00-00-00A-060A-A

Component Maintenance Manual (CMM):

Document No. 02100 32-20-05

M. Publications Affected

Not applicable.

N. Interchangeability of Parts

Not applicable.

2. Material Information
A. Material - Price and Availability

Operators that require additional information and/or Service Bulletin Material should contact their authorized Pilatus Service Center, or Pilatus Customer Support on www.pilatus-aircraft.com → contact us.

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

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 authorized Service Center within the compliance time given in Para 1.E. of this Service Bulletin
- The affected nose-wheel fork assembly and the feedback sheet have been returned to Pilatus Aircraft Ltd., CH-6371 Stans, Switzerland.

C. Material Necessary for Each Aircraft
(1) Material to Order From Pilatus

All of the parts listed below are necessary for the replacement of the nose-wheel fork assembly during Steps 3.D., 3.E. and 3.F.

NOTE: <1> One cotter pin only is necessary for the repair of the nose-wheel fork assembly during Step 3.C.

New Part No.	Description	Old Part No.	Qty	Disp. Code	Fig	Item
511.23.12.026	PLACARD, A/C GROUND	-	2	N	-	-
511.23.12.027	PLACARD, JACK POINT	-	1	N	-	-
532.20.12.240 OR 532.20.12.267	NOSE-WHEEL FORK ASSEMBLY	532.20.12.112	1	R	2	11
940.17.02.502	COTTER PIN (MS24665-191) <1>	-	1 1	N	2 2	5 14
946.91.26.893	O-RING SEAL (MIL-R-8791/1-233)	-	1	N	2	28

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

New Part No.	Description	Old Part No.	Qty	Disp. Code	Fig	Item
946.97.02.233	RETAINER, SEAL PTFE (MIL-R-8791/1-233)	-	1	N	2	29
946.97.11.224	PISTON-SEAL (7224-MS-160-P4)	-	1	N	2	13
946.97.16.342	RING SCRAPER (351-33100-369G) (USE UNTIL STOCKS ARE EXHAUSTED)	-	1	N	2	32
OR						
946.97.16.344	RING SCRAPER (WE710B331AT05NE) (SUPERSEDES 946.97.16.342)	-	1	N	2	32
946.97.10.331	ROD-SEAL (7331-FT-160-P4)	-	1	N	2	27

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

(2) Operator Supplied Materials, AMM 20-31-00-00A-070A-A

Material No.	Description	Qty	Remarks
-	TAPE, MASKING	AR	
P01-016	ACETONE	AR	OR EQUIVALENT
P02-001	LOCKWIRE (STANDARD)	AR	8mm (0.32 in) DIAMETER
P02-009	ABRASIVE CLOTH, GRADE 120	AR	OR EQUIVALENT
P02-011	ABRASIVE CLOTH, GRADE 240	AR	OR EQUIVALENT
P02-031	ABSORBENT PAPER	AR	OR EQUIVALENT
P02-041	LINT-FREE CLEANING CLOTH	AR	OR EQUIVALENT
P04-028	GREASE	AR	OR EQUIVALENT
P04-030	GREASE	AR	ALTERNATIVE FOR P04-041 WHERE INSTRUCTED ONLY
P04-041	GREASE	AR	ALTERNATIVE FOR P04-030 WHERE INSTRUCTED ONLY
P07-001	CCC SOLUTION	AR	OR EQUIVALENT
P07-007	PRIMER	AR	OR EQUIVALENT
P08-018	SEALANT	AR	USA ONLY
P08-071	SEALANT	AR	OR EQUIVALENT
P09-040	MASKING PAPER	AR	OR EQUIVALENT
P10-013	CPC	AR	OR EQUIVALENT
P10-017	HYDRAULIC FLUID	AR	OR EQUIVALENT

(3) Tooling - Cost and Availability

Tool No.	Description	Qty	Remarks
T07-040	NWS LOCKING SCREW	AR	
T12-030	SAFETY CLIP, CIRCUIT BREAKER HOLD OPEN	AR	OR EQUIVALENT
513.32.12.061	PIN EXTRACTOR	AR	PART OF TOOLKIT T32-036
513.32.12.063	RUBBER GUIDE	AR	PART OF TOOLKIT T32-036
513.32.12.064	87 mm SPANNER	AR	PART OF TOOLKIT T32-036
513.32.12.074	EXTRACTING-TOOL	AR	PART OF TOOLKIT T32-036
-	METAL SCRAPER	AR	LOCAL SUPPLY
-	NON-METALLIC SCRAPER	AR	LOCAL SUPPLY

Tool No.	Description	Qty	Remarks
-	NON-METALLIC BRISTLE BRUSH	AR	LOCAL SUPPLY
-	MAGNIFYING GLASS X10	AR	OR EQUIVALENT. LOCAL SUPPLY
-	BRIGHT LIGHT SOURCE	AR	LOCAL SUPPLY
-	HOT AIR BLOWER	AR	LOCAL SUPPLY
-	DIAMOND RIFFLER FILES	AR	LOCAL SUPPLY
-	EXTERNAL CALIPERS	AR	LOCAL SUPPLY
-	VACUUM CLEANER	AR	OR EQUIVALENT. LOCAL SUPPLY

3. Accomplishment Instructions - Aircraft

WARNING: BE CAREFUL WHEN YOU USE THE CONSUMABLE MATERIALS. OBEY THE MANUFACTURER'S HEALTH AND SAFETY INSTRUCTIONS AND ALL APPLICABLE LOCAL INSTRUCTIONS. THE CONSUMABLE MATERIALS CAN BE DANGEROUS AND CAUSE DEATH OR INJURY TO PERSONNEL AND/OR DAMAGE TO EQUIPMENT.

CAUTION: BE CAREFUL WHEN YOU USE THE CLEANING MATERIALS. SOLVENTS CAN CAUSE DAMAGE TO RUBBER MATERIAL AND OTHER NON METAL PARTS.

NOTE: To identify the consumables used in this procedure refer to the Consumable Materials List, refer to AMM 20-31-00-00A-070A-A.

NOTE: To identify the AGE and tools used in this procedure refer to the List of AGE and Tools, TEM 00-00-00-00A-060A-A.

A. Preparation

- (1) Obey the safety instructions given in Landing Gear Maintenance Practices, refer to AMM 32-00-00-00A-901A-A or 32-00-00-00A-901B-A.
- (2) If the aircraft is on jacks and/or trestles:
 - (a) Put a warning sign (DO NOT OPERATE THE LANDING GEAR) in the flight compartment.
 - (b) Open and install a safety clip, circuit breaker hold open (Tool No. T12-030) on the circuit breaker:

HYDR CTL (NON ESSENTIAL BUS) (MSN 101 thru 544 and 546 thru 888)
HYDR CTL (ESSENTIAL BUS) (MSN 545 and MSN 1001 thru 1719 and 1721 thru 1944)
or
LDG GEAR PWR (RH POWER JUNCTION BOX).

B. Inspection

Refer to Figure 1.

NOTE: The serial number of the NLG strut assembly is shown on the identification label which is installed on the forward surface of the main fitting integral-assembly.

- (1) Make a lint-free cloth (Material No. P02-041) moist with acetone (Material No. P01-016) and clean the cylinder pipe at the nose wheel fork interface in the inspection area.
- (2) Do a visual inspection of the cadmium plating of the cylinder pipe at the nose wheel fork interface. Use a bright light source and magnifying glass if necessary:
 - Cadmium plating is applied to protect the cylinder pipe
 - Corrosion of the cadmium is shown by a white, brown or black color on the surface
 - Corrosion of the cylinder pipe is shown by a red color on the surface.
- (3) Do the instructions for repair of the cylinder pipe in Step 3.C. when you find untreated material (no cadmium plating) with or without corrosion.

- (4) No repair is necessary when sealant or primer and top coat fully covers the cadmium plating between the nose wheel fork interface and the hard chrome plating on the cylinder pipe. Continue with the close up instructions in Step 3.G.
- (5) When you find corrosion of the cadmium plating the cylinder pipe is not affected by this SB:
 - (a) Do the check/inspection procedures, refer to AMM 32-20-01-02A-313A-A.
 - (b) Continue with the close up instructions in Step 3.G.

C. Repair

WARNING: WHEN YOU DRILL, CUT OR ABRABE MATERIALS YOU MUST WEAR THE CORRECT PROTECTIVE EQUIPMENT (GLOVES, FILTER MASKS AND FACE-SHIELDS/ SAFETYGLASSES/GOGGLES). ABRASIVE DUST CAN GET IN YOUR LUNGS OR ON YOUR SKIN AND CAUSE INJURY OR SKIN IRRITATION. DO NOT INHALE DUST. WHEN AUTHORIZED:

- MAKE THE AREA MOIST BEFORE YOU MANUALLY ABRABE TO PREVENT AIRBORNE DUST PARTICLES.
- USE A HAND-HELD ABRASION/GRINDER/SANDER TOOL THAT IS EXPLOSION PROOF WITH A SUCTION SYSTEM TO REMOVE DUST PARTICLES.

MAKE SURE THAT THE WORK AREA IS FULLY VENTILATED. OBEY YOUR LOCAL REGULATIONS WHEN:

- YOU DRILL OR ABRABE PAINTS, FILLERS, OR ANY OTHER MATERIALS.
- YOU COLLECT AND DISCARD THE DUST AND OTHER UNWANTED MATERIALS.

WARNING: DO NOT USE PRESSURE AIR SUPPLY TO CLEAN PARTICLES OF CADMIUM DUST. USE A VACUUM CLEANER.

CAUTION: USE ONLY THE TOOLS AND MATERIALS GIVEN IN THIS PROCEDURE TO REMOVE MATERIAL. USE OF THE INCORRECT ABRASIVE MATERIALS CAN CAUSE CROSS-CONTAMINATION WITH EMBEDDED PARTICLES. THIS CAN CAUSE CORROSION.

Refer to Figure 2 Sheet 1.

- (1) Disconnect the lower torque link (17) from the nose-wheel fork assembly (11).
 - (a) Remove and discard the cotter pin (14).
 - (b) Remove the nut (15), the washer (16) and the bolt (18).
 - (c) Remove the lubrication pin (19).

Refer to Figure 3 and Figure 4.

- (2) Apply masking paper (Material No. P09-040) to protect the nose wheel and axle.
- (3) Use non-metallic scrapers to fully remove the sealant between the cylinder pipe and nose wheel fork.

- (4) Make a lint-free cloth (Material No. P02-041) moist with acetone (Material No. P01-016) and clean the interface area between cylinder pipe and nose wheel fork. Let the acetone dry.
- (5) Apply the masking tape and masking paper (Material No. P09-040) to protect the cylinder pipe and nose wheel fork:
 - (a) Apply it to the hard chrome plate on the cylinder pipe approximately 1 mm (0.04 in) from its bottom edge.
 - (b) Apply it around the area of removed sealant on the nose wheel fork.
- (6) Use external callipers to measure and record the cylinder pipe outside diameter 'X' in the untreated material area. Make sure that the outside diameter 'X' is between 56,910 and 57,120 mm (2.240 and 2.249 in).

CAUTION: WHEN YOU BLEND OUT THE CORROSION:

- MAKE SURE THAT YOU REMOVE THE MINIMUM QUANTITY OF MATERIAL NECESSARY TO REMOVE ALL THE CORROSION
 - MAKE SURE THAT THE REPAIR AREA IS SMOOTH WITH NO SCRATCHES OR SHARP EDGES
 - MAKE SURE THAT YOU DO NOT REMOVE MATERIAL FROM THE NOSE WHEEL FORK.
- (7) Blend out the corrosion as follows:
 - (a) Use abrasive cloth, grade 120 (Material No. P02-009) and abrasive cloth, grade 240 (P02-011) to remove the corrosion from the cylinder pipe in the non-masked area shown in Figure 4:
 - 1 Cut the abrasive cloth into thin strips with the same width as the corrosion on the cylinder pipe.
 - 2 Twist the strips of abrasive paper to remove corrosion below the fork level.
 - (b) Use diamond riffler files to remove corrosion spots at the hard chrome transition.
 - (8) Use abrasive cloth (Material No. P02-011) to roughen all of the non-masked area.
 - (9) Use a vacuum cleaner to remove unwanted particles from the work area.
 - (10) Make a lint-free cloth (Material No. P02-041) moist with acetone (Material No. P01-016) to clean the non-masked area.
 - (11) Let the acetone to dry.
 - (12) Use a bright light source and magnifying glass to examine the blended area surface for corrosion spots. None are permitted.
 - (13) Use the external calipers to measure and record the cylinder pipe minimum outside diameter 'X' of the blended area.
 - (14) Do the instructions to replace the cylinder pipe in Steps 3.D., 3.E. and 3.F. when the outside diameter 'X' is less than 55,8 mm (2.197 in).

- (15) Apply the masking tape and masking paper (Material No. P09-040) again to protect the cylinder pipe and nose wheel fork.
- (16) Do a check of the surfaces of the nose wheel fork for bare aluminum.
- (17) Apply a layer of CCC solution (Material No. P07-001) to the bare aluminum of the nose wheel fork if necessary, refer to AMM 20-40-10-00A-901A-A.
- (18) Apply a layer of primer (Material No. P07-007) to all unprotected areas.
- (19) Allow the primer to fully cure for 72 hours:
 - You can use a hot air blower to reduce the curing time
 - Apply a maximum temperature of 50 °C (122 °F) in accordance with the manufacturer's instructions.
- (20) Obey the manufacturer's instructions and apply a fillet of sealant (Material No. P08-018 or P08-071) between the cylinder pipe and nose wheel fork masked area.

Refer to Figure 2 Sheet 1.

- (21) Carefully remove the masking tape and masking paper and allow the sealant to fully cure for 30 hours:
 - After 2 hours at standard conditions (21°C (71°F) with 50% humidity) you can use a hot air blower to reduce the curing time if necessary
 - Apply a maximum temperature of 50°C (122°F) in accordance with the manufacturer's instructions.
- (22) Connect the lower torque link (17) to the nose-wheel fork assembly (11):
 - (a) Put the lower torque link (17) in position on the nose-wheel fork assembly (11) and install the lubrication pin (19). Make sure that the cut-out in the lubrication pin (19) aligns with the position of the bolt (18).
 - (b) Make sure that the lubrication fitting in the lubrication pin (19) is on the right side of the NLG strut assembly.
 - (c) Install the bolt (18), washers (16) and nut (15).
 - (d) Safety the nut (15) with a new cotter pin (14) (P/N 940.17.02.502).
 - (e) Apply CPC (Material No. P10-013) around the nut (15) and the bolt (18).

D. Disassembly

WARNING: SLOWLY RELEASE COMPRESSED GAS PRESSURE. IF YOU RELEASE THE PRESSURE TOO FAST, YOU CAN CAUSE INJURY TO PERSONNEL AND/OR DAMAGE TO EQUIPMENT.

Refer to Figure 2 Sheet 1 and Figure 2 Sheet 2.

NOTE: Two persons are necessary to do the steps that follow.

- (1) Make a record of the installed positions of NLG parts during these disassembly procedures to help you when you assemble the NLG parts.
- (2) Make a note of the application of lockwire to parts and fasteners before you remove it. This helps you to safety the parts with lockwire during assembly
- (3) Raise the aircraft on jacks, refer to AMM 07-10-00-00A-901A-A.
- (4) Put spillage containers below the NLG strut assembly.
- (5) Clean the area around the two charging valves (1 and 3) with absorbent paper (Material No. P02-031).
- (6) Remove the caps (2 and 4) from the two charging valves (1 and 3).
- (7) Connect a drain hose and slowly open the STAGE 1 charging valve (3) (to release the nitrogen pressure from the shock absorber). Do not close the STAGE 1 charging valve but remove the drain hose.
- (8) Adjust the STAGE 2 pressure to 4 bar (60 psi).

NOTE: The pressure in STAGE 2 is needed to keep the seals seated and the STAGE 2 piston in the correct position.

- (9) Remove the nose wheel, refer to AMM 32-40-02-00A-920A-A.
- (10) Disconnect the lower torque link (17) from the nose-wheel fork assembly (11):
 - (a) Remove and discard the cotter pin (14).
 - (b) Remove the nut (15), the washer (16) and the bolt (18).
 - (c) Remove the lubrication pin (19).
- (11) Remove the sleeve (12):
 - (a) Remove and discard the cotter pin (5).
 - (b) If necessary, remove the sealant from around the nut (10).
 - (c) Remove the nut (10), the bolt (8), the safety washers (9), the pins (6) and the stop plate (7).
 - (d) Use the extracting-tool (P/N 513.32.12.074) and remove the sleeve (12) from the nose-wheel fork assembly (11).
 - (e) Remove and discard the piston seal (13) from the sleeve (12).
- (12) Release the barrel nut (30):
 - (a) Remove and discard the lockwire from the two screws in the barrel nut (30).
 - (b) Loosen the two screws in the barrel nut (30).
 - (c) Use the 87 mm spanner (P/N 513.32.12.064) to loosen the barrel nut (30).

- (13) Carefully remove the nose-wheel fork assembly (33) together with the barrel nut (30) and guide pipe (25) attached from the steering tube assembly (22).
- (14) Remove the guide pipe (25):
 - (a) Remove the guide ring (23) from the guide pipe (25).
 - (b) Use the pin extractor (P/N 513.32.12.061) to remove the three driving pins (26).
 - (c) Remove the guide pipe (25) from the nose-wheel fork assembly (33).
- (15) Remove the barrel nut (30) from the nose-wheel fork assembly (33).
- (16) Disassemble the barrel nut (30):
 - (a) Remove and discard the O-ring seal (28) and PTFE seal retainer (29) from the barrel nut (30).
 - (b) Remove and discard the scraper ring (32) from the barrel nut (30).
 - (c) Remove and discard the three parts of the rod seal (27) from the barrel nut (30).

E. Cleaning

Do the applicable steps in CMM 32-20-05, Page Block 4001 - Cleaning.

F. Assembly

CAUTION: DISCARD ALL SEALS AND RUBBER BASED PARTS. YOU MUST USE NEW SEALS AND RUBBER BASED PARTS DURING THE ASSEMBLY PROCEDURE. THE INSTALLATION OF USED SEALS AND RUBBER BASED PARTS CAN CAUSE DAMAGE WHEN THE NLG ASSEMBLY IS PRESSURIZED.

CAUTION: MAKE SURE THAT YOU IDENTIFY THE CORRECT INSTALLED POSITION OF ALL THE SEALS BEFORE YOU REMOVE THEM FROM THEIR TRANSIT PACKING.

Refer to Figure 2 Sheet 1 and Figure 2 Sheet 2.

- (1) Lubricate all of the seals, O-ring seals, seal retainers, and other rubber based components with grease (Material No. P04-041 or P04-030).
- (2) Assemble the barrel nut (30):
 - (a) Put the scraper ring (32) in position in the bottom of the barrel nut (30):
 - For scraper ring (32) P/N 946.97.16.342 only, make sure that the O-ring seal installed on the scraper ring (32) faces out
 - For scraper ring (32) P/N 946.97.16.344 only, make sure that the O-ring seal installed on the scraper ring (32) faces in.

- (b) Put the sealing ring (27) in position in the top of the barrel nut (30):
 - The sealing ring (27) is a three part seal
 - Make sure that the rounded edges of the two outer seals mate with the rounded corners of the inner T-seal.
- (c) Install the seal retainer (29) and O-ring seal (28) in position in the external groove of the barrel nut (30).
- (d) Lubricate the inner side of the barrel nut (30) with the hydraulic fluid (Material No. P10-017).
- (e) Obey the manufacturer's instructions and apply a layer of corrosion preventative (Material No. P04-039) on the outer surface of the barrel nut (30) where the O-ring seal (28) is in position.
- (f) Apply a layer of grease (Material No. P04-028) to the threads of the barrel nut (30).
- (g) Put the barrel nut (30) in position on the cylinder pipe of the nose-wheel fork assembly (33). Make sure that it can move freely on the cylinder pipe of the nose-wheel fork assembly (33).

- (3) Attach the guide pipe (25) to the nose-wheel fork assembly (33):

- (a) Put the guide pipe (25) in position on the cylinder pipe of the nose-wheel fork assembly (33). Make sure the holes for the three driving pins (26) are correctly aligned with the holes in the nose-wheel fork assembly (33).

CAUTION: INSTALL THE DRIVING PINS WITH THE PIN EXTRACTOR AND YOUR HAND. DO NOT USE FORCE. TOO MUCH FORCE CAN DAMAGE THE PARTS.

- (b) Use the pin extractor (P/N 513.32.12.061) to install the three driving pins (26) the guide pipe (25) and fork assembly (33). Make sure that the heads of the driving pins (26) are below the adjacent surfaces of the guide pipe (25).

- (c) Put the guide ring (23) in position on the driving pins (26):

- Carefully compress the guide ring (23) with your fingers before you install it
- This is to make sure that it is a tight fit when installed.

- (4) Put the rubber guide (P/N 513.32.12.063) in position in the bottom of the steering tube assembly (22). Push the nose-wheel fork assembly (33) into the steering tube then remove the rubber guide.

- (5) Tighten and safety the barrel nut (30):

- (a) Install the barrel nut (30) in the steering tube assembly (22) and tighten it with your hand. Be careful you do no damage to the seal retainer (29).

- (b) Measure the run-down torque of the barrel nut (30) in the steering tube assembly (22).

- (c) Use the 87 mm spanner (P/N 513.32.12.064) and torque tighten the barrel nut (30) to between 10,2 and 11,3 Nm (90 and 100 lbf in) plus the run-down torque.

- (d) Tighten the two screws in the barrel nut (30).
 - (e) Safety the two screws in the barrel nut (30) to the taxi light bracket bolts with lockwire (Material No. P02-007).
 - (f) Put the lower torque link (17) in position on the nose-wheel fork assembly (33) and install the lubrication pin (19). Make sure that the cut-out in the lubrication pin (19) aligns with the position of the bolt (18).
 - (g) Make sure that the lubrication fitting in the lubrication pin (19) is on the right side of the NLG strut assembly.
 - (h) Install the bolt (18), washers (16) and nut (15).
 - (i) Safety the nut (15) with a new cotter pin (14) (P/N 940.17.02.502).
 - (j) Apply CPC (Material No. P10-013) around the nut (15), the bolt (18) and the barrel nut (30).
- (6) Install the sleeve (12):
- (a) Lubricate the piston seal (13) with grease (Material No. P04-041 or P04-030).
 - (b) Install the piston seal (13) on the sleeve (12).
 - (c) Lubricate the sleeve (12) with hydraulic fluid (Material No. P10-017).
 - (d) Put the sleeve (12) in position in the nose-wheel fork assembly (11) and align the holes for the bolt (8).
 - (e) Put the stop plate (7) in position and align the holes for the two pins (6).
 - (f) Install the pins (6), bolt (8), the safety washers (9) and the nut (10).
 - (g) Safety the nut (10) with a new cotter pin (5) (P/N 940.17.02.502).
 - (h) Apply CPC (Material No. P10-013) around the nut (10) and the bolt (8).
- (7) Remove the NWS locking screw (T07-040).
- (8) Install the nosewheel, refer to AMM 32-40-02-00A-920A-A.
- (9) Install the new placards (P/N 511.23.12.027 and 511.23.12.026) on the nose-wheel fork assembly as follows:
- (a) Use the old nose-wheel fork assembly to identify the correct positions on the left and right sides.
 - (b) Remove the backing strip from the new placards.
 - (c) Carefully install the placards. Make sure that there are no air bubbles between the placard and the surface of the part.
- (10) Service the NLG shock absorber, refer to AMM 32-20-00-00A-902A-A:
- (a) Pressurize STAGE 2 with nitrogen.

(b) Fill STAGE 1 with hydraulic fluid (Material No. P10-017).

(c) Pressurize STAGE 1 with nitrogen.

(11) Do the servicing procedures to lubricate the NLG with grease, refer to AMM 12-20-04-00A-902A-A.

G. Close-up

(1) Remove all the equipment, tools and materials from the work area. Make sure that the work area is clean.

(2) Remove the safety clip and close the circuit breaker:

HYDR CTL (NON ESSENTIAL BUS) (MSN 101 thru 544 and 546 thru 888)
HYDR CTL (ESSENTIAL BUS) (MSN 545 and MSN 1001 thru 1719 and 1721 thru 1944)
or
LDG GEAR PWR (RH POWER JUNCTION BOX).

(3) Remove the warning sign (DO NOT OPERATE THE LANDING GEAR) from the flight compartment.

(4) Do the functional test of the extension and retraction of the landing gear, refer to AMM 32-30-00-00A-903A-A or 32-30-00-00A-903B-A.

(5) Lower the aircraft off jacks, refer to AMM 07-10-00-00A-901A-A.

H. Documentation

(1) Make an entry in the Aircraft Logbook that this Service Bulletin is incorporated.

(2) Make sure that the Aircraft Logbook shows any new Pilatus Part Number(s) and/or Serial Number(s), as applicable.

(3) Make an entry in the Pilot's Operating Handbook, Document No. 01973, 02211, 02277 or 02406 to record the incorporation of this Service Bulletin.

(4) If the fork assembly was replaced, return the completed feedback sheet and the fork assembly to Pilatus Aircraft Ltd.

(5) Inform CAMP of the incorporation of this Service Bulletin and any new Pilatus Part Number(s) and/or Serial Number(s), as applicable. Send the completed feedback sheet to: fax@campsystems.com.

4. Accomplishment Instructions - NLG Strut Assemblies Held as Spare

WARNING: BE CAREFUL WHEN YOU USE THE CONSUMABLE MATERIALS. OBEY THE MANUFACTURER'S HEALTH AND SAFETY INSTRUCTIONS AND ALL APPLICABLE LOCAL INSTRUCTIONS. THE CONSUMABLE MATERIALS CAN BE DANGEROUS AND CAUSE DEATH OR INJURY TO PERSONNEL AND/OR DAMAGE TO EQUIPMENT.

CAUTION: BE CAREFUL WHEN YOU USE THE CLEANING MATERIALS. SOLVENTS CAN CAUSE DAMAGE TO RUBBER MATERIAL AND OTHER NON METAL PARTS.

NOTE: To identify the consumables used in this procedure refer to the Consumable Materials List, refer to AMM 20-31-00-00A-070A-A.

NOTE: To identify the AGE and tools used in this procedure refer to the List of AGE and Tools, TEM 00-00-00-00A-060A-A.

A. Preparation

Remove the NLG strut assembly from its storage packaging for the inspection and possible repair, Ref. Component Maintenance Manual (CMM) 32-20-05, Page Block 15001.

B. Inspection

Refer to Figure 1.

- (1) Make a lint-free cloth (Material No. P02-041) moist with acetone (Material No. P01-016) and clean the cylinder pipe at the nose-wheel fork interface (refer to Figure 1 for the area to be inspected).
- (2) Let the acetone dry.
- (3) Do a visual inspection of the cadmium plating of the cylinder pipe at the nose wheel fork interface. Use a bright light source and magnifying glass if necessary:
 - Cadmium plating is applied to protect the cylinder pipe
 - Corrosion of the cadmium is shown by a white, brown or black color on the surface
 - Corrosion of the cylinder pipe is shown by a red color on the surface.
- (4) Do the instructions for repair of the cylinder pipe in Step 4.C. when you find untreated material (no cadmium plating) with or without corrosion.
- (5) No repair is necessary when sealant or primer and top coat fully covers the cadmium plating between the nose wheel fork interface and the hard chrome plating on the cylinder pipe. Continue with the close up instructions in Step 4.E.

C. Repair

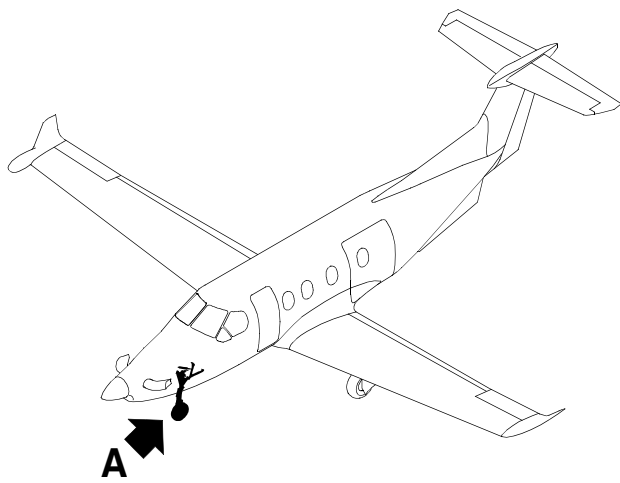
- (1) Do the repair procedures given in Step 3.C.
- (2) Replace the nose-wheel fork assembly in accordance with Step 4.D. when the outside diameter 'X' of the cylinder pipe is less than 55,8 mm (2.197 in) when measured during Step 3.D.(14).

D. Replacement

- (1) Replace the nose-wheel fork assembly with a new nose-wheel fork assembly (P/N 532.20.12.240).
- (2) Obey the instructions for disassembly, cleaning, check, repair (if necessary), assembly and test in CMM 32-20-05 as necessary.

E. Documentation

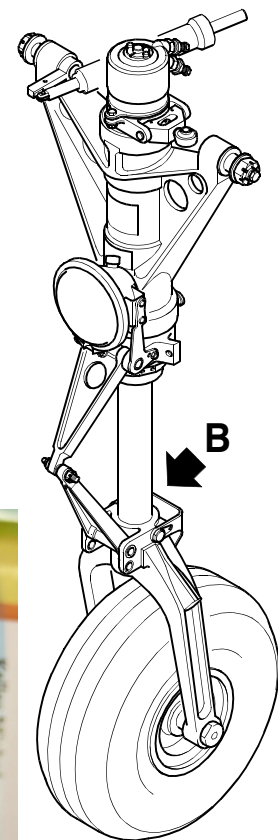
- (1) Make an entry on the two service labels for the NLG strut assembly that this Service Bulletin is incorporated.
- (2) Prepare the NLG strut assembly for storage, Ref. CMM 32-20-05, Page Block 15001.
- (3) If the fork assembly was replaced, return the completed feedback sheet and the fork assembly to Pilatus Aircraft Ltd., CH-6371 Stans, Switzerland.
- (4) Inform CAMP of the incorporation of this Service Bulletin and any new Pilatus Part Number(s) and/or Serial Number(s), as applicable. Send the completed feedback sheet to: fax@campsystems.com.



A

B

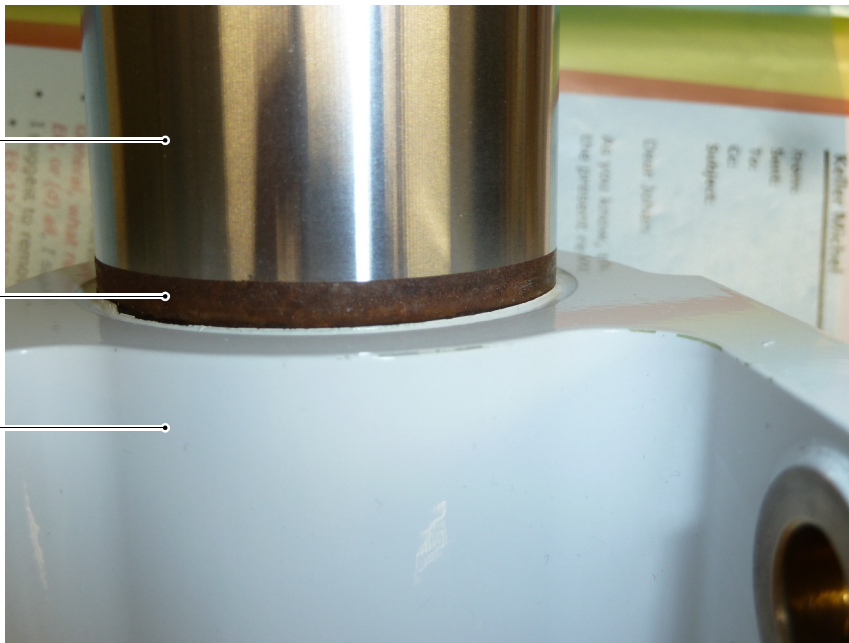
INSPECTION AREA



CYLINDER PIPE

CORROSION OF
CYLINDER PIPE

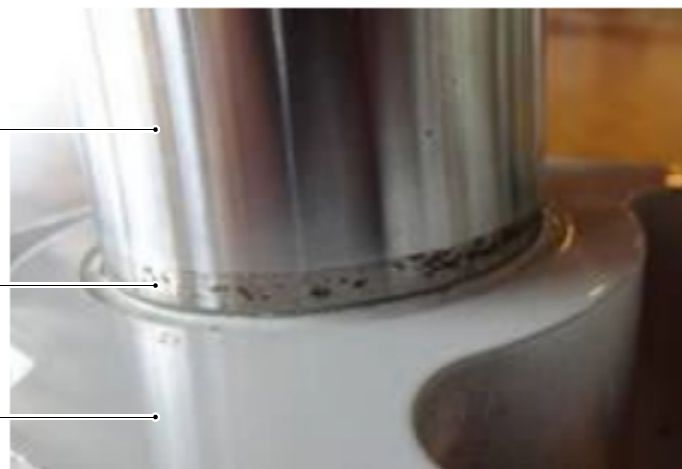
NOSE
WHEEL
FORK



CYLINDER PIPE

PARTIAL CORROSION
OF CYLINDER PIPE

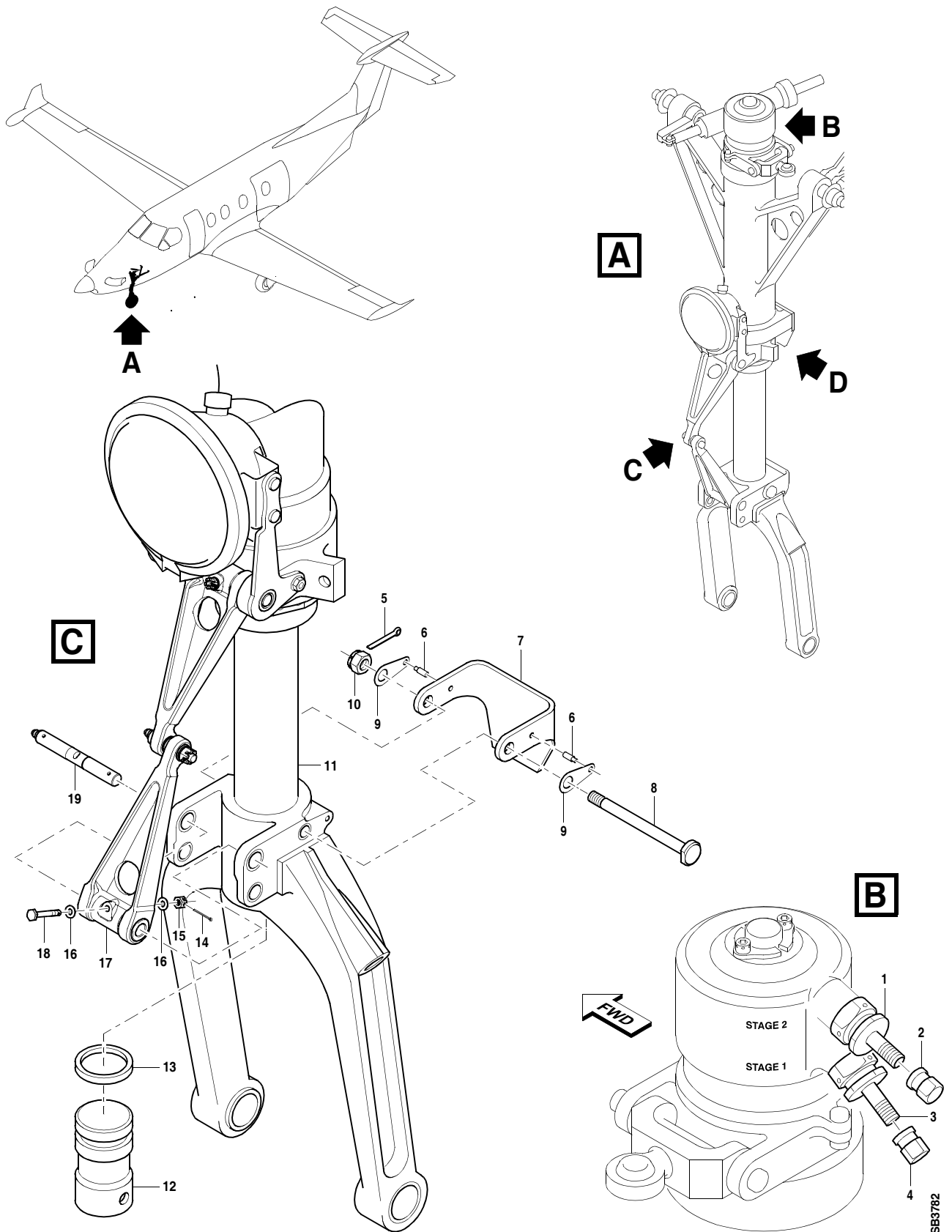
NOSE
WHEEL
FORK



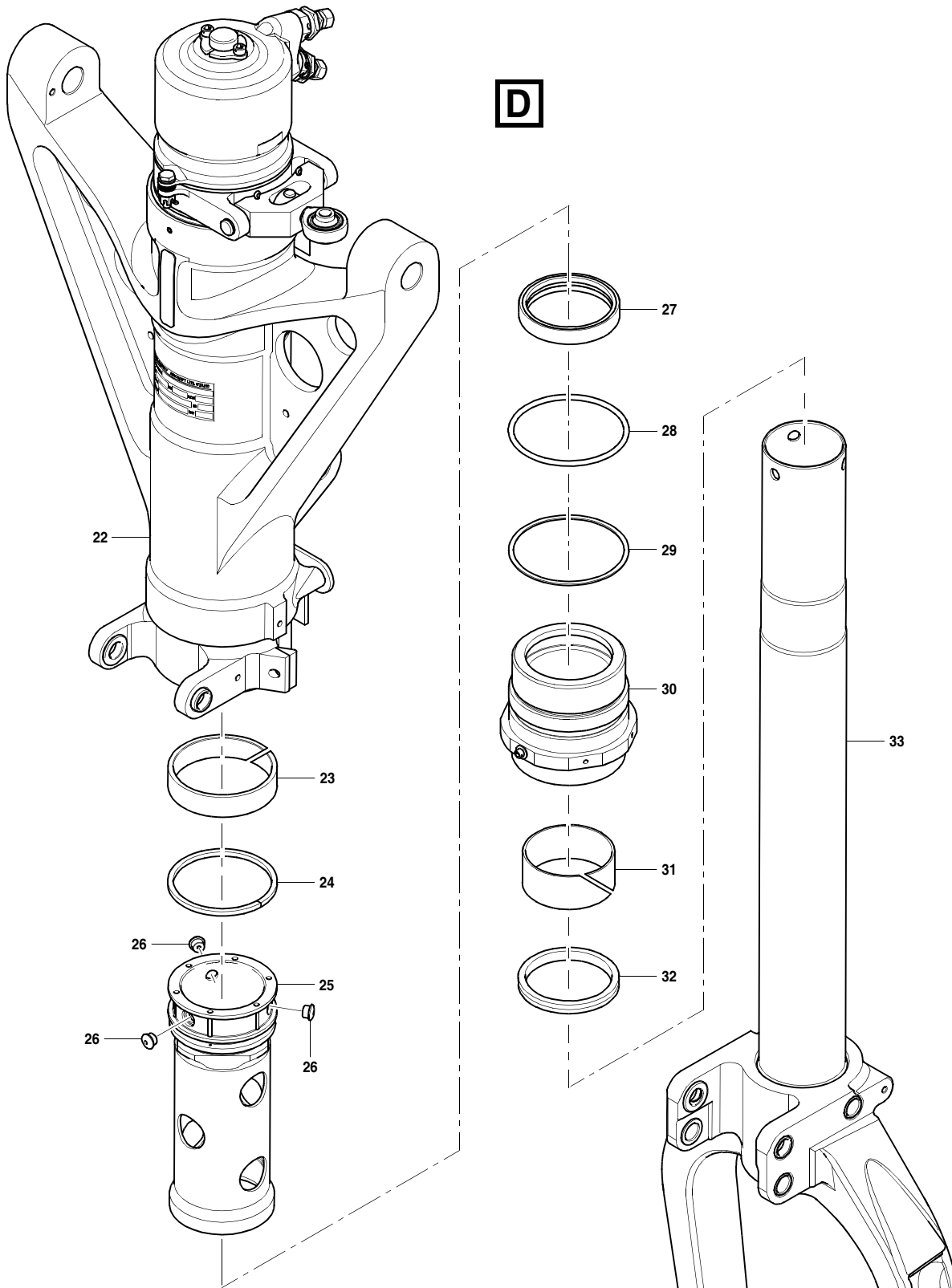
B

INSPECTION AREA

Nose Landing Gear Fork Assembly - Inspection
Figure 1

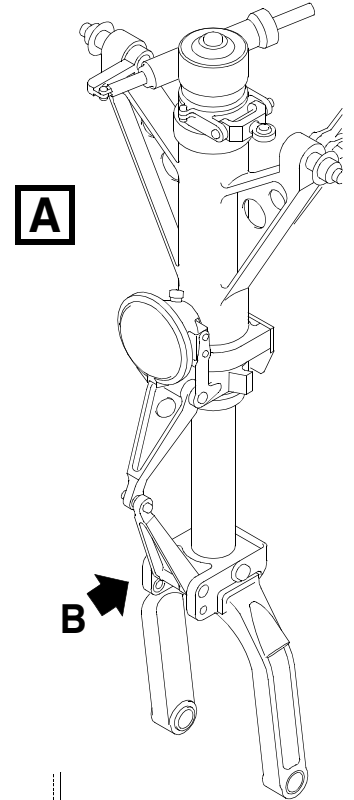
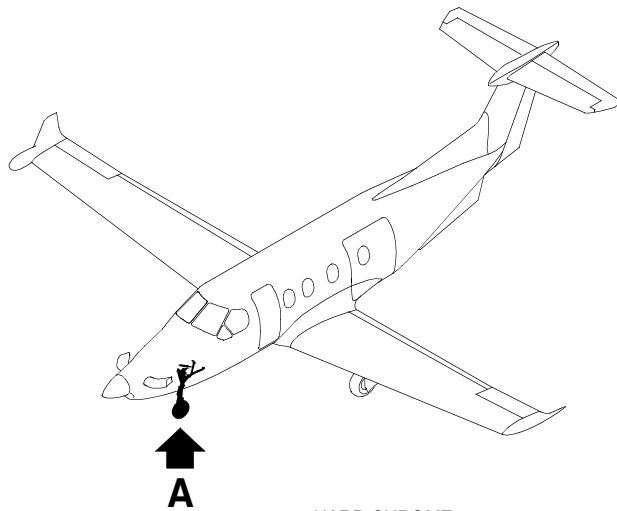


Nose Landing Gear - Disassembly/Assembly
Figure 2 Sheet 1

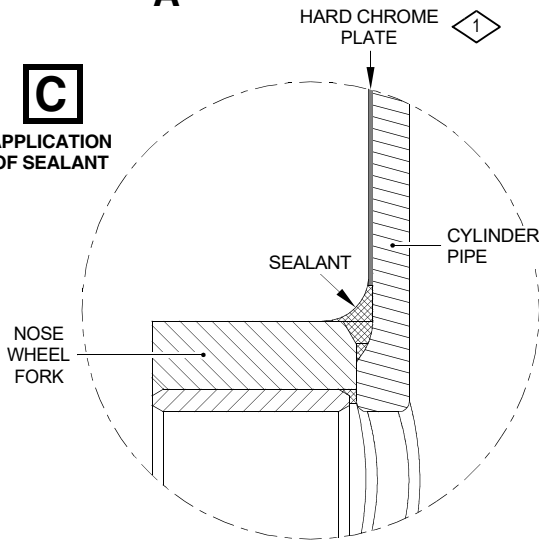


Nose Landing Gear - Disassembly/Assembly
Figure 2 Sheet 2

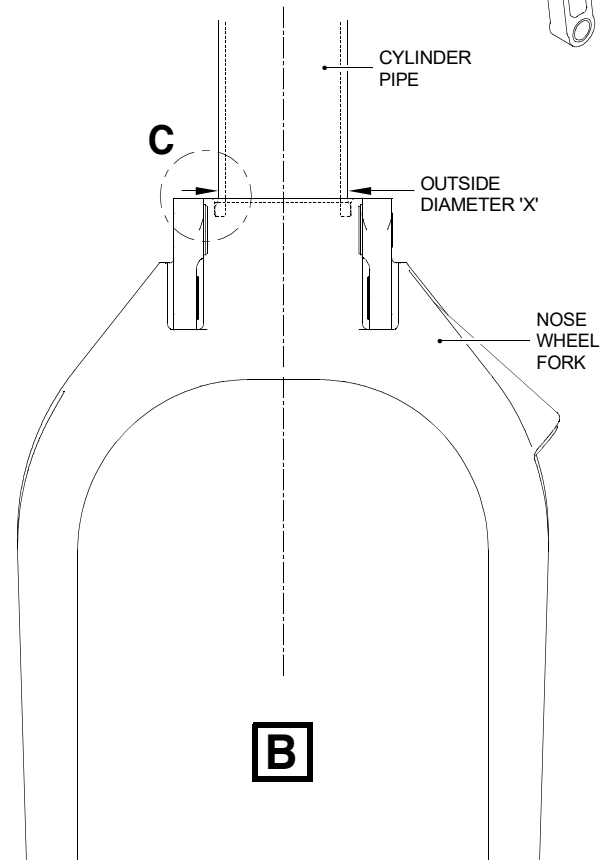
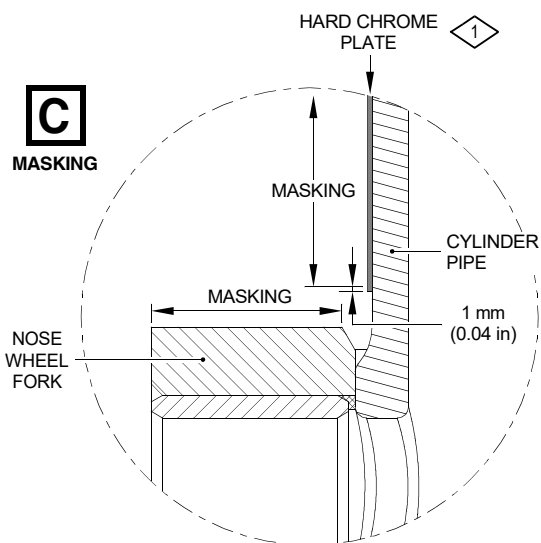
SB3783



C
APPLICATION
OF SEALANT



C
MASKING



NOTE:

① THE HARD CHROME PLATE CAN PROTRUDE OR BE FLUSH

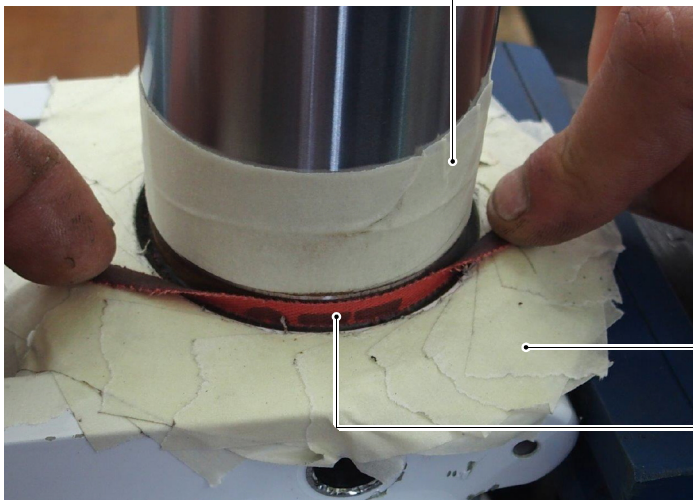
Nose Landing Gear - Cylinder Pipe - Repair
Figure 3

SB4103



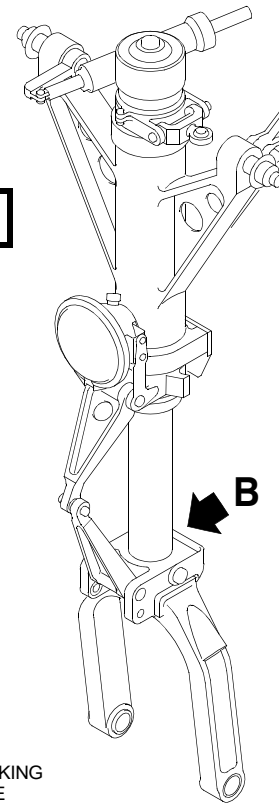
A

MASKING TAPE



B
USE OF
ABRASIVE
CLOTH

A

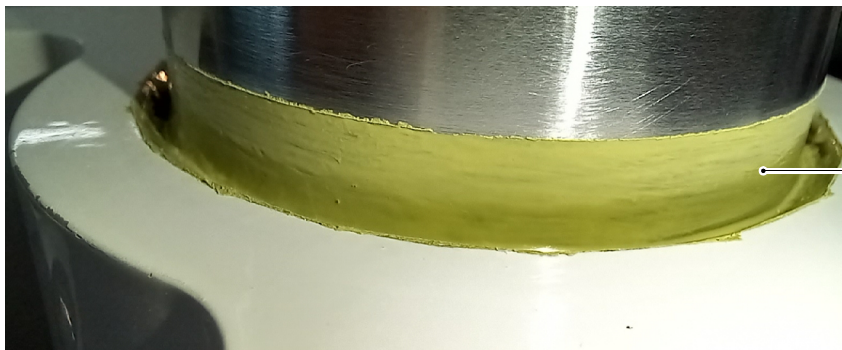


B

MASKING
TAPE

MATERIAL No.
P02-009 OR P02-011

B
PRIMED



MATERIAL No.
P07-001

B
SEALANT
APPLICATION



MATERIAL No.
P08-018 OR P08-071

Nose Landing Gear - Cylinder Pipe - Repair
Figure 4

SB4111

Feedback sheet for accomplishment of SB 32-029

The purpose of this feedback sheet is to provide CAMP with the current information on each individual PC-12/47E series aircraft. Please complete the grey cells as appropriate using black ink and block letters.

Print out and send the completed feedback sheet to: fax@campsystems.com

Information

Please identify your aircraft status by ticking the correct option

<input type="checkbox"/>	We have embodied/accomplished this SB	<input type="checkbox"/>	Fully
<input type="checkbox"/>	We will not embody/accomplish this SB	<input type="checkbox"/>	Partially
The undersigned confirms the accomplishment of this Service Bulletin			
Date of accomplishment	Name	Signature	
<p>Comments (procedure, kit quality, suggested improvements, etc.)</p>			

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