

Service Bulletin No: 32-010
Modification No: INSPECTION

Ref No: 105
ATA Chapter: 32

**LANDING GEAR - MAIN GEAR AND DOORS
INSPECTION OF THE MAIN-GEAR SUPPORT STRUT**

1. Planning Information

A. Effectivity

All PC-9 aircraft up to and including MSN 248.

All main-gear support struts P/N 532.10.09.039 held as spare or in stock.

B. Concurrent Requirements

None.

C. Reason

(1) Problem

Cracks have occurred in the main-gear support struts on some aircraft. All the main-gear support struts that had cracks were made from material AA2024-T351. This material has a lower resistance to stress corrosion cracking.

(2) Cause

The cause of the cracks is stress corrosion.

(3) Solution

- (a) Do a visual inspection of the main-gear support struts to check if they are made from AA2024-T351.
- (b) Do a Non-Destructive Inspection (NDI) procedure on the main-gear support struts which are made from AA2024-T351.

D. Description

This Service Bulletin gives the instructions and data necessary to:

- Identify the main-gear support struts that must be examined for cracks with an NDI procedure.
- If necessary, do the NDI procedure.
- If necessary, report the findings to Pilatus.

NOTE: When Pilatus gets all the findings, they will decide if repeat inspections will be included in the Chapter 5.

Revision No. 1 is issued to update the Approval statement, to issue an address for reporting the findings of any cracks and to update the Service Bulletin to the latest standard.

E. Compliance

Mandatory.

This Service bulletin must be done not later than 200 flight hours or 6 months, whichever comes first, after the effective date of this Service Bulletin. Pilatus recommends that this Service Bulletin is done at the next scheduled servicing to prevent unnecessary aircraft downtime.

F. Approval

The technical content of this Service Bulletin is approved under FOCA accepted procedures.

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	1.00
Inspection	2.00
Close up	1.00
TOTAL MAN-HOURS	4.00

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

Not affected.

(2) Moment Change

Not affected.

I. Electrical Load Data

Not affected.

J. Software

Not affected.

K. References

Aircraft Maintenance Manual (AMM),

L. Publications Affected

None.

M. Interchangeability of Parts

Not applicable.

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

Operators who require more information should contact:

PILATUS AIRCRAFT LTD,
CUSTOMER LIAISON MANAGER,
CH 6371 STANS, Tel: +41 41 619 62 26 (Government)
SWITZERLAND Fax: +41 41 619 61 70

(1) Operator Supplied Parts:

NOTE: These parts are necessary if you do the NDI on the left side or the right side. If you must do the NDI on both sides, it is necessary to have two nuts.

PART NO	DESCRIPTION	QTY	REMARKS
938.07.68.506	NUT, SELF LOCKING	1	IPC REF 32-30-03, Fig 3

(2) Operator Supplied Materials (Ref. AMM 20-31-00):

MATERIAL NO	DESCRIPTION	QTY	REMARKS
P01-010	SOLVENT	A/R	PIL P/N 910.21.61.015
P02-001	LOCKWIRE	A/R	PIL P/N 919.01.11.104
P02-031	ABSORBENT PAPER	A/R	PIL P/N 904.49.73.004

B. Material Necessary for Each Spare

Not applicable.

C. Re-identified Parts

Not applicable.

D. Tooling**(1) Operator Supplied Tools**

PART NO:	DESCRIPTION	REMARKS
N/A	Eddy Current NDT Equipment	Nortec 2000 Eddy Current Instrument or equivalent
N/A	Rotating Scanner	Staveley RA-2000 Rotating Scanner or equivalent
N/A	Fixed or Expanding Rotating Scanner Probe	
N/A	Shielded Probe and Lead Combination	3 mm Diameter, 500 Khz, 90-degree
N/A	Shielded Probe Guide	Locally manufactured
N/A	Calibration Standard	2024/7075-T6 alloy with an EDM surface notch 0,5 mm (0.0197 in.) deep
N/A	Universal Reference Standard for Holes	2024/7075-T6 alloy with an EDM corner or through notch 0,5 mm (0.0197 in.) deep

3. Accomplishment Instructions**A. Identification (Ref. Fig. 1)**

- (1) Do a visual examination of the left and right main-gear support struts installed on the aircraft:
 - If the main-gear support struts has rounded clevis lugs, they are made of material with an increased resistance to stress corrosion cracking. Continue the Service Bulletin from Step 3.E.
 - If the main-gear support struts has chamfered clevis lugs, they are made of material which has a lower resistance to stress corrosion cracking. Continue the Service Bulletin from Step 3.B.

B. Preparation (Ref. Fig. 2)

WARNING: BEFORE YOU GO INTO THE COCKPIT, MAKE SURE THAT BOTH EJECTION SEATS HAVE THE SAFETY PINS INSTALLED IN THE SAFE FOR SERVICING LOCATIONS (REF. AMM 25-10-00, PAGE BLOCK 201).

WARNING: BE CAREFUL WHEN YOU USE THE CONSUMABLE MATERIALS. OBEY THE MANUFACTURERS HEALTH AND SAFETY INSTRUCTIONS.

- (1) Put the aircraft on jacks (Ref. AMM 07-10-00, Page Block 201).
- (2) Connect the hydraulic servicing rig to the aircraft (Ref. AMM 29-00-01, Page Block 201).
- (3) Energize the aircraft electrical system (Ref. AMM 24-00-00. Page Block 201).
- (4) Set the hydraulic rig on and set the delivery pressure to 207 bar (3000 psi).

WARNING: MAKE SURE THAT PERSONNEL AND EQUIPMENT ARE CLEAR OF THE AREA BEFORE THE LANDING GEAR IS OPERATED.

- (5) Set the landing gear handle to LG UP. Retract the landing gear until you can get access to the actuator connection for the folding strut, then open the circuit breaker:

HYDR SYS (front cockpit BATTERY BUS CB panel).

- (6) Set the hydraulic rig off.
- (7) De-energize the aircraft electrical system (Ref. AMM 24-00-00. Page Block 201).
- (8) Install a safety clip to the circuit breaker:

HYDR SYS (front cockpit BATTERY BUS CB panel).

- (9) Put a block of wood in position to give support to the landing gear.
- (10) Set the landing gear handle to the LG DOWN position.

WARNING: MAKE SURE THE MAIN GEAR LEG IS SUPPORTED AS IT WILL MOVE WHEN THE BOLT IS REMOVED.

- (11) Remove the nut (6), the washer (5) the bolt (4) and the bush (2) and disconnect the actuator (3) from the left folding strut (1). Discard the nut (6).
- (12) Remove the lockwire between the bolt (7) and the main-gear support strut (8).
- (13) Use absorbent paper (Mat. No. P02-031) made moist with the solvent (Mat. No. P01-010) and clean the hole for the bolt (4), the hole for the lockwire and the adjacent area.

C. Non-Destructive Inspection (Ref. Fig 3)

CAUTION: ONLY PERSONNEL THAT ARE TRAINED AND APPROVED (BY THE LOCAL AIRWORTHINESS AUTHORITIES) CAN DO THIS PROCEDURE.

- (1) Calibrate the eddy-current rotating-scanner instrument utilising the manufacturers handbook to represent a 50% of full screen height (FSH) response (null point represents 0% FSH) from the calibration standard. Set the null point with the non-rotating probe into the correct hole in the universal reference standard for holes.
- (2) Examine both bolt holes of the left main-gear support strut for cracks with the rotating scanner probe.
- (3) Calibrate the eddy current 90° shielded probe instrument utilising the manufacturers handbook to represent a 75% of full screen height (FSH) response (null point represents 0% FSH) from the calibration standard.
- (4) Examine the area around the hole, for the bolt (4), on the aft surface with a 90° shielded probe.
- (5) Examine the area around the hole, for the bolt (4), on the forward surface with a 90° shielded probe.
- (6) Examine the area adjacent to the lockwire holes with the 90° shielded probe.
- (7) Do steps 3.C.(1) to 3.C.(6) for the right main-gear support strut.
- (8) If you find cracks (Ref. Fig. 4):
 - (a) Use the report and record the length and position of the crack(s). Send the report to:

PILATUS AIRCRAFT LTD,
CUSTOMER LIAISON MANAGER,
CH 6371 STANS
SWITZERLAND
Fax: +41 41 619 61 70
 - (b) Do Service Bulletin 32-011 to replace the main-gear support strut.
- (9) If you do not find cracks (Ref. Fig. 2):
 - (a) Put the bush (2) in position in the actuator (3).
 - (b) Put the actuator (3) in the correct position between the lugs of the left and/or right folding strut lever (1).

- (c) Install the bolt (4), the washer (5) and the new nut (6) (P/N 938.07.68.506).
- (d) Safety the bolt (7) to the main-gear support strut (8) with the lockwire (Mat. No. P02-001).

D. Close up

- (1) Remove the wooden blocks which give support to the main landing gear.
- (2) Remove the safety clip and close the circuit breaker:
HYDR SYS (front cockpit BATTERY BUS CB panel).
- (3) Do an operational test of the landing gear (Ref. AMM 32-30-01, Page Block 501).
- (4) Make sure the work area is clean and clear of tools and other items.

E. Documentation

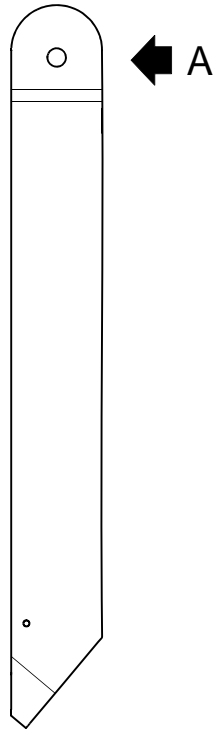
- (1) Make an entry in the Aircraft Logbook that this Service Bulletin has been incorporated.

4. Accomplishment Instructions - Parts Held as Spare or in Stock**A. Identification (Ref. Fig 1)**

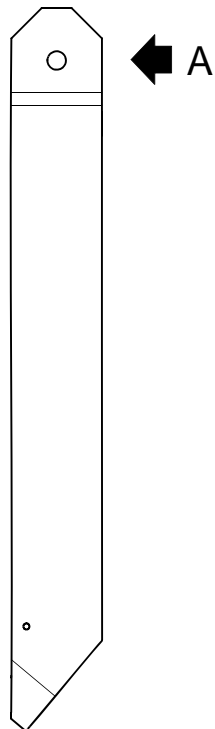
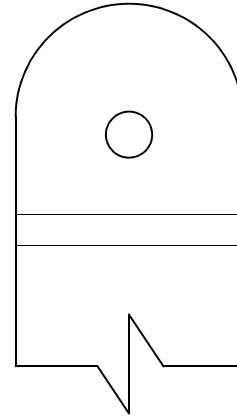
- (1) Do a visual examination of the main-gear support struts (P/N 532.10.09.039) held as spare or in stock:
- If the main-gear support struts has rounded clevis lugs, they are made of material with an increased resistance to stress corrosion cracking, and no further action is required.
 - If the main-gear support struts has chamfered clevis lugs, they are made of material which has a lower resistance to stress corrosion cracking. Return the main-gear support struts (with chamfered clevis lugs) to Pilatus for replacement with a new part (P/N 532.10.09.128).

B. Documentation

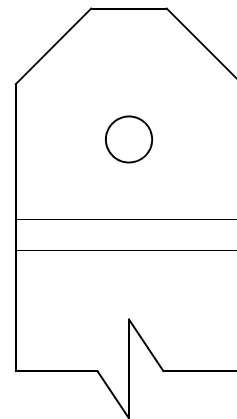
None.



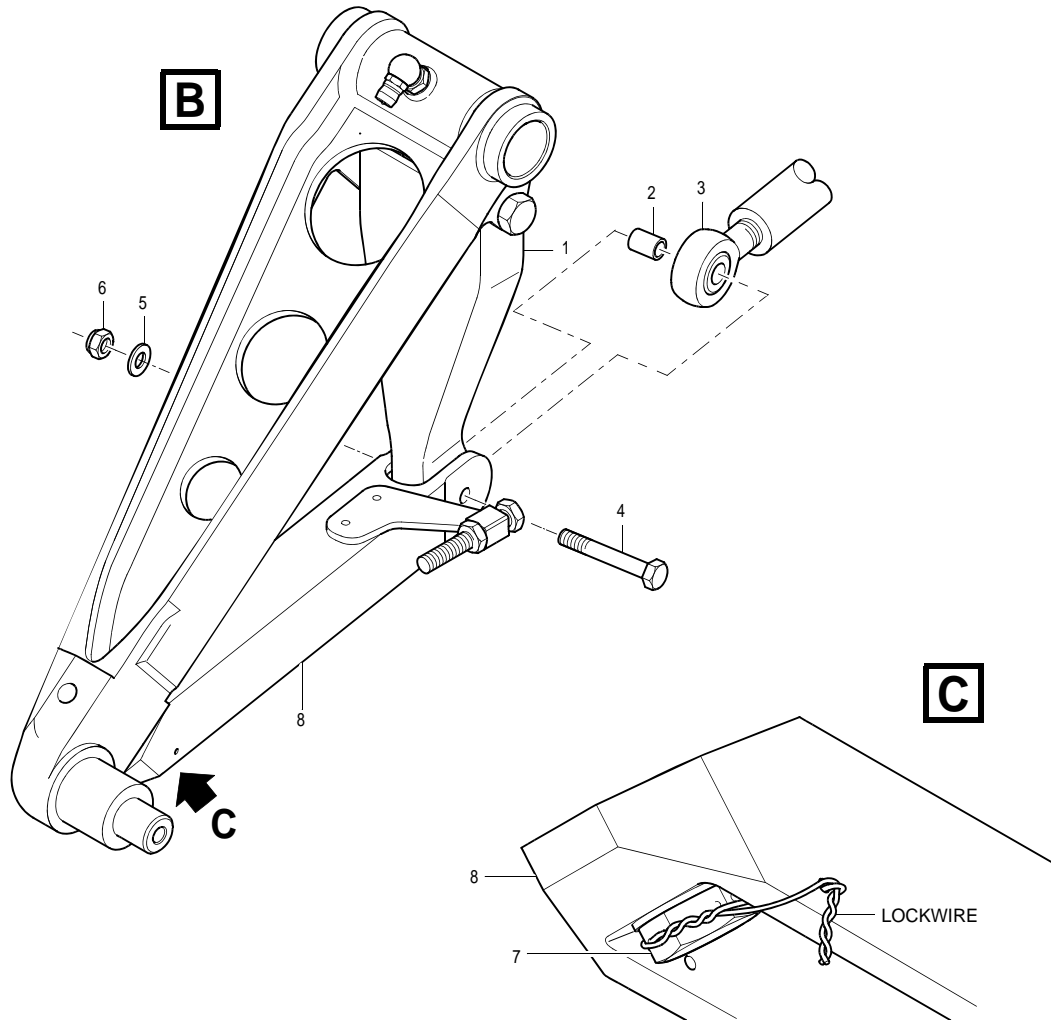
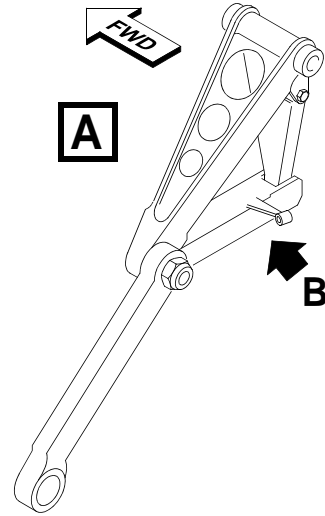
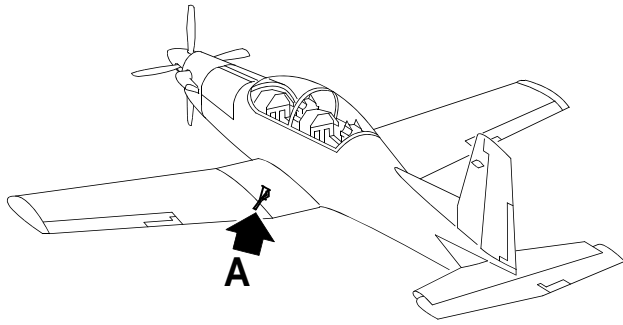
A
ROUNDED CLEVIS LUGS
NO NDI NECESSARY



A
CHAMFERED CLEVIS LUGS
NDI IS NECESSARY

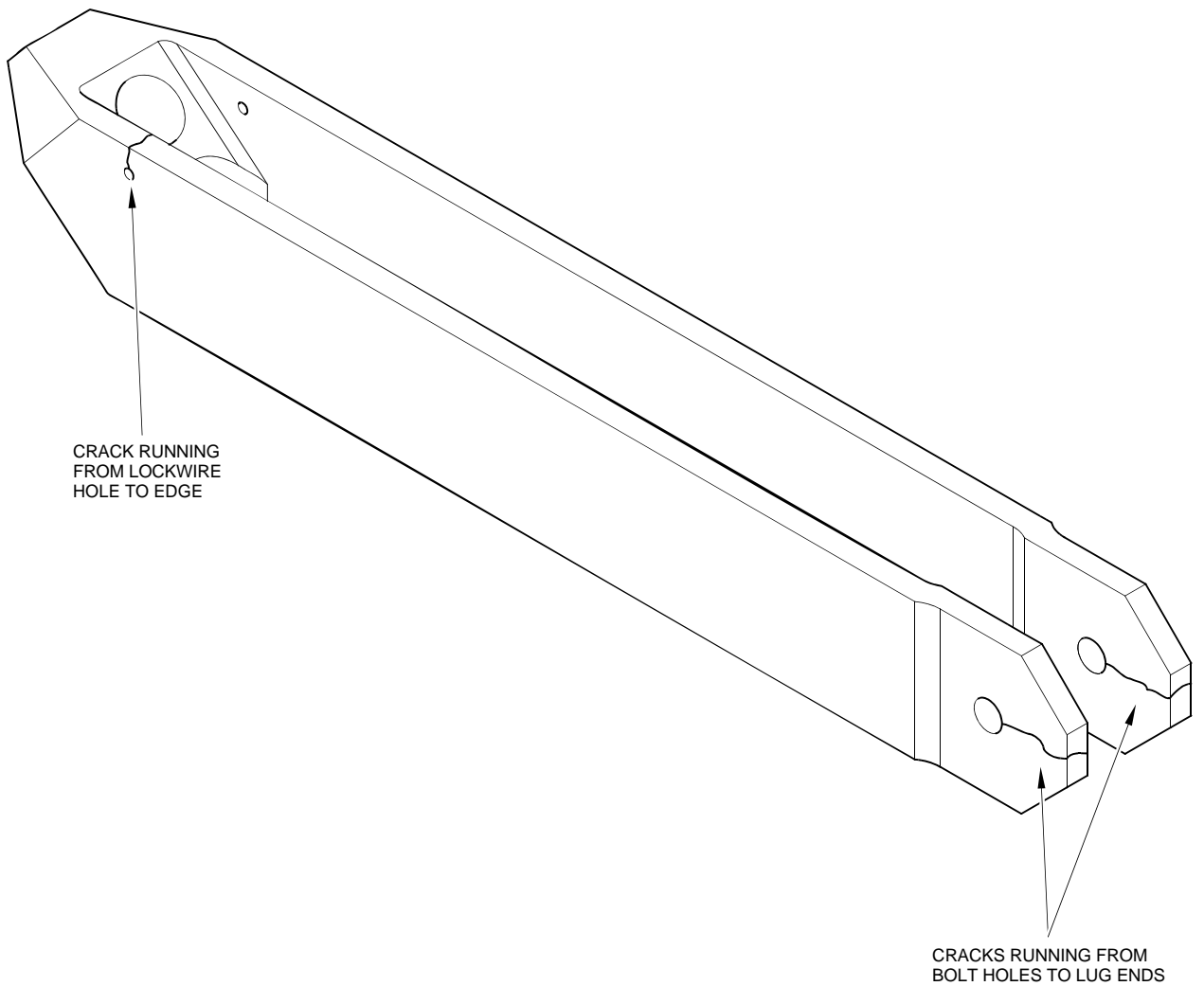


Type of Main-Gear Support Struts
Figure 1

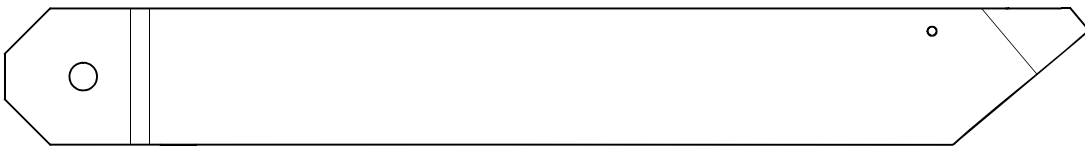
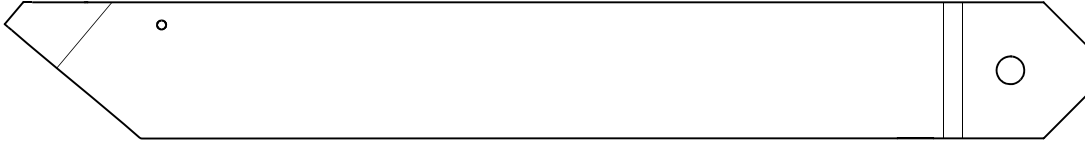


Support Strut Preparation
Figure 2

SB1788



Position of Possible Cracks
Figure 3



INDICATE CRACK POSITION

A/C MSN	
DATE	
LENGTH OF CRACK	
LENGTH OF CRACK	
LENGTH OF CRACK	

INDICATE CRACK LENGTH

Crack Report Form
Figure 4

SB1781