

EFFECTIVITY
MODEL: ALL 707 AND 720 WITH 7079 ALUMINUM NLG
REFERENCES: SERVICE BULLETIN NUMBERS: 1729, 3218 SERVICE LETTER: 707-SL-32-10

NONDESTRUCTIVE TEST

PART 6 - EDDY CURRENT

LANDING GEAR - NOSE GEAR

1. Purpose

- A. The purpose of this procedure is to detect stress corrosion cracks at the quench holes (heat-treat-gas-escape holes) in the nose-landing-gear-outer cylinder with high-frequency-eddy current. Refer to Detail I.
- B. This procedure gives details to inspect "Area G" identified in Part 4, 32-20-07, Fig. 2.
- C. This procedure gives instructions for a bolthole-type-eddy-current-procedure and if required, a surface-probe-eddy-current procedure. The surface-probe-eddy-current procedure is only necessary if the quench holes are not square to the top of the cylinder bore. Refer to Detail II.

2. Equipment

Any eddy current instrument and probe combination that satisfies the requirements of this procedure is suitable for this inspection.

- A. Instruments - Refer to Part 6, 51-00-00, Fig. 1, or Part 6, 51-00-00, Fig. 4 if a surface probe is necessary, for suitable instruments.
- B. Probes -
 - (1) Bolthole probe with a 0.75 inch diameter head, 0.60 to 0.65 inch diameter shaft, and 4.0 to 6.0 inch length. Refer to Part 6, 51-00-00, Fig. 1.

P/N BPF-48/07 NG, NDT Engineering Corp., Seattle, Washington, was used to develop this procedure.

NOTE: Probes with a 0.60 to 0.65 inch shaft diameter are recommended to minimize signal noise due to probe wobble. A probe collar cannot be used due to clearance problems.

Nose Landing Gear Quench Hole
Figure 1 (Sheet 1)

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- (2) If a surface probe is necessary, use a 0.125-inch-diameter-right-angle probe with a maximum drop of 0.50 inches and 3.0 to 5.0 inches long. Refer to Part 6, 51-00-00, Fig. 4.

C. Reference Standards

- (1) An aluminum reference standard with a 0.75 inch diameter hole is required. Refer to Part 6, 51-00-00, Fig. 1.

P/N HRS-48A, NDT Engineering Corp., Seattle, Washington, was used to develop this procedure.

- (2) If a surface probe is necessary, use either the above described reference standard or the reference standard number 126 shown in Part 6, 51-00-00, Fig. 4.

D. Equipment Manufacturers - Refer to Part 1, 51-01-00.

3. Preparation for Inspection

- A. Remove the quench-hole-plug buttons and any sealant from the quench holes.
- B. Clean the area to be inspected of any old grease, dirt, grit or other foreign material.
- C. Examine the base of the quench holes with the aid of a flashlight, to determine if the holes are square to the top of the cylinder bore. Refer to Detail III.

4. Instrument Calibration

- A. Refer to Part 6, 51-00-00, Fig. 1 for calibration procedures for the bolthole probe inspection.
- B. Refer to Part 6, 51-00-00, Fig. 4 for calibration procedures for the surface probe inspection.
- C. Adjust the instrument sensitivity to obtain a minimum 20% meter response change from the reference standard notch.

Nose Landing Gear Quench Hole
Figure 1 (Sheet 2)

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5. Inspection Procedure

- A. Follow the bolthole inspection procedures in Part 6, 51-00-00, Fig. 1 to inspect the bore of the quench holes (Area G). Refer to Details I, II and III.

NOTE: Be careful of false crack indications when the quench holes are inspected if the bottom of the hole is not square to the inside bore of the cylinder. False crack indications can be found due to the edge effect as the probe approaches the bottom of the hole. Limit probe spacing to the inner edge of the hole and to the minimum distance where no significant edge interference is found.

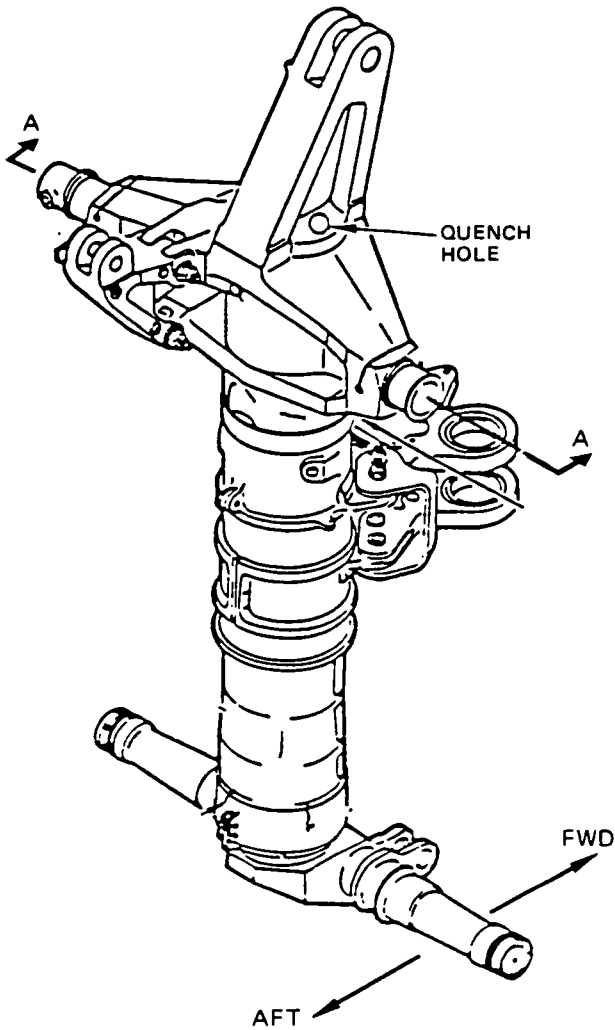
- B. If the quench holes are not square to the top of the cylinder bore, use the procedure in Part 6, 51-00-00, Fig. 4 to inspect the area missed by the bolthole inspection. Scan the lower edge of the quench hole as shown in Detail III.

6. Inspection Results

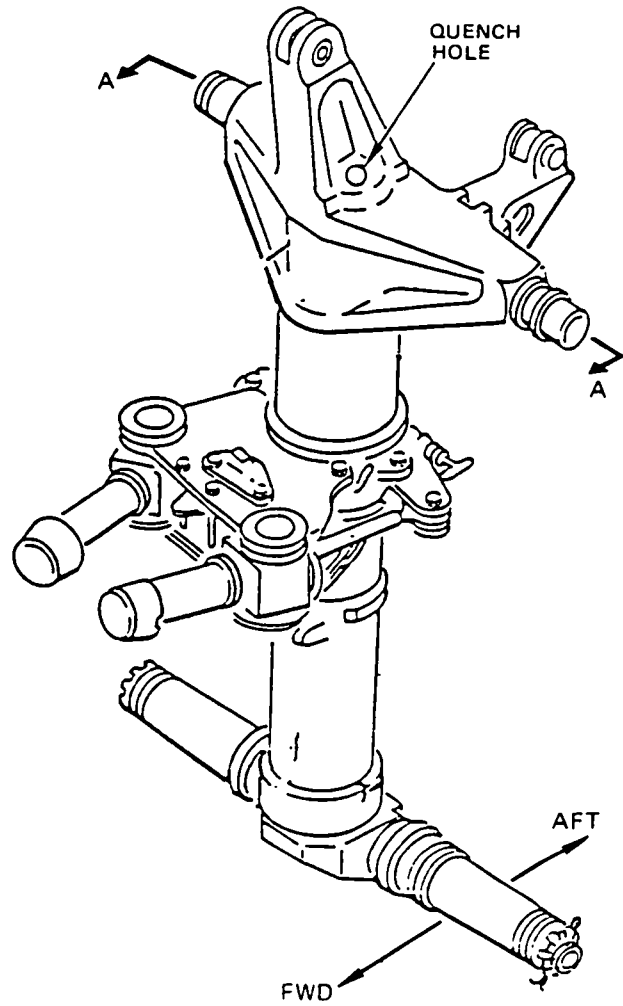
- A. Any rapid meter movement which occurs as the probe is scanned over a short distance is a possible crack indication. Any indication which equals or exceeds the reference-standard-notch indication is to be considered a crack unless shown differently.
- B. If no indications are detected, the inspection of this area is complete. Reinstall the quench hole plug buttons and reseal.

Nose Landing Gear Quench Hole
Figure 1 (Sheet 3)

NONDESTRUCTIVE TEST



NOSE GEAR CYLINDER
LOOKING FORWARD
SHIMMY DAMPERS
NOT SHOWN

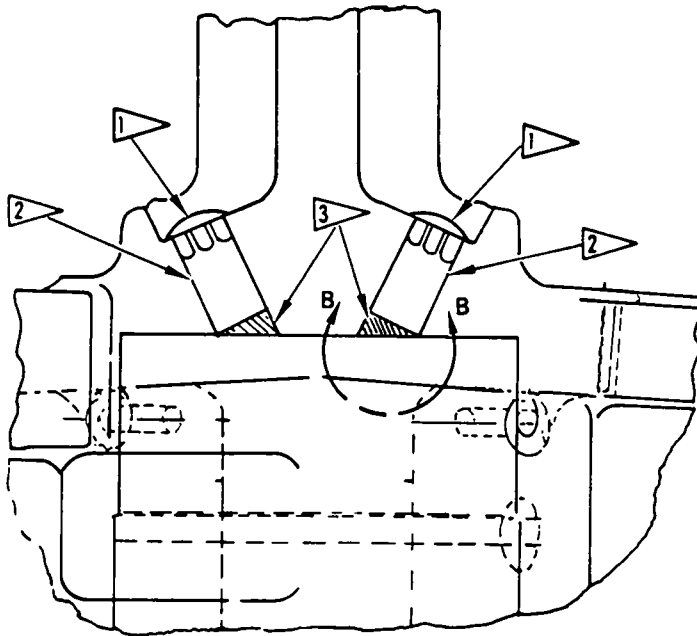


NOSE GEAR CYLINDER
LOOKING AFT
SHIMMY DAMPERS SHOWN

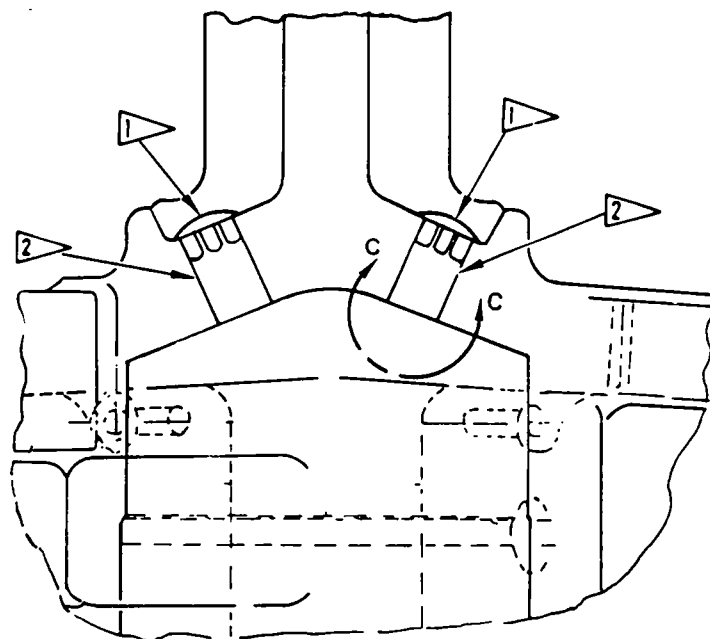
**NOSE LANDING GEAR OUTER CYLINDER
INSPECTION AREAS**

DETAIL I

NONDESTRUCTIVE TEST



SECTION A-A
QUENCH HOLE AT AN ANGLE
TO CYLINDER BORE



SECTION A-A (OPTIONAL)
QUENCH HOLE SQUARE TO CYLINDER BORE

NOTES

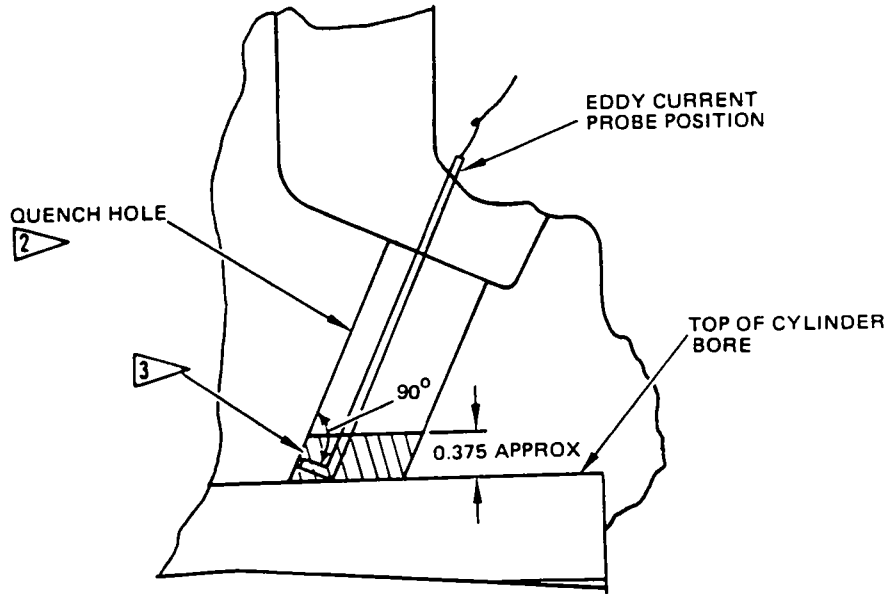
- 1** REMOVE THE TWO DUSTCAPS AND ALL SEALANT FROM THE BORE OF THE QUENCH HOLES
- 2** INSPECT PER PART 6, 51-00-00, FIG. 1, USING A 0.75 INCH DIAMETER BOLTHOLE PROBE
- 3** INSPECT PER PART 6, 51-00-00, FIG. 4, USING A 0.125 INCH DIAMETER SHIELDED RIGHT ANGLE PROBE.

THIS INSPECTION PROCEDURE IS NOT NECESSARY IF THE BOTTOMS OF THE QUENCH HOLES ARE SQUARE TO THE INSIDE BORE OF THE CYLINDER AS SHOWN IN DETAIL III SECTION C - C.

NOSE LANDING GEAR OUTER CYLINDER
DETAIL II

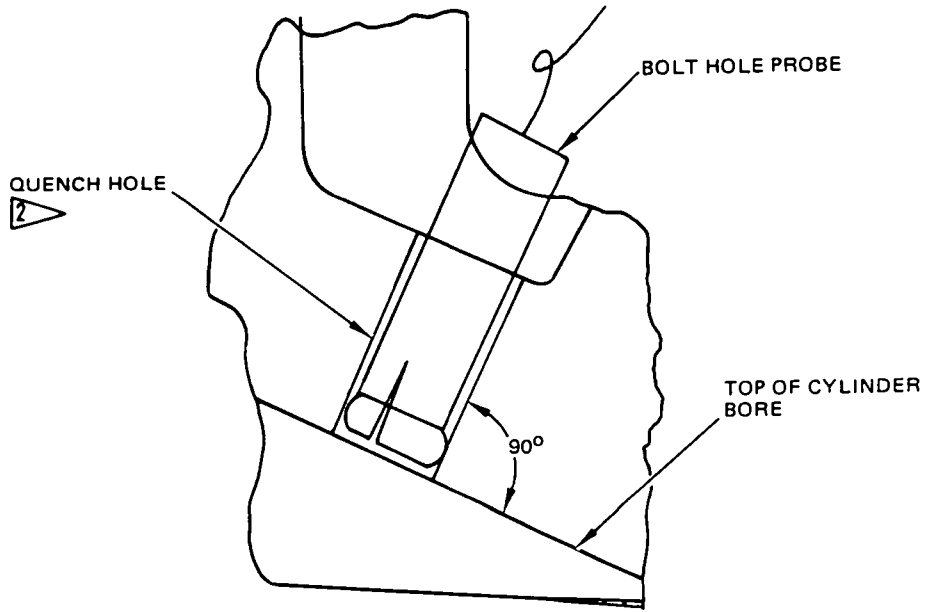
Nose Landing Gear Quench Hole
 Figure 1 (Sheet 5)

NONDESTRUCTIVE TEST



SECTION B-B

SURFACE PROBE POSITION FOR INSPECTION OF BOTTOM OF QUENCH HOLE SQUARE TO CYLINDER BORE



SECTION C-C

BOLTHOLE PROBE POSITION TYPICAL FOR QUENCH HOLE INSPECTION

**NOSE LANDING GEAR OUTER CYLINDER
DETAIL III**

Nose Landing Gear Quench Hole
Figure 1 (Sheet 6)