



737 NON-DESTRUCTIVE TEST MANUAL

PART 4 - ULTRASONIC

NOSE LANDING GEAR - UPPER AND LOWER TORSION LINKS APEX

1. Purpose

- A. To detect cracks which originate in the bore of the hole, at or near the flash plane as shown in Detail III in Figure 2. See Figure 1 for the inspection area.
- B. 737 Maintenance Planning Document (D6-17594, D6-38278) Reference:
 - (1) Item: 4-32-04D
 - (2) Item: B32-00-00-A

2. Equipment

- A. Any equipment that satisfies the requirements of this procedure is suitable for this inspection. The following equipment has been used and found suitable:
 - (1) Ultrasonic instrument
 - (a) Reflectoscope, Sperry Model UM 700.
 - (b) Reflectoscope, Sperry Model UCD
 - (c) Sonoray, Branson Model 301
 - (2) Transducer
 - (a) 5.0 MHz, 0.25-inch diameter active element in 0.375-inch diameter case.
 - (3) Transducer positioning fixture 350P
 - (a) Fabricate transducer positioning fixture as shown in Detail I in Figure 2.
 - (4) Reference Standard 350
 - (a) Fabricate reference standard as shown in Detail II in Figure 2. Make reference standard from a spare part if possible.
 - (5) Couplant
 - (a) Light grease or oil

3. Prepare for the Inspection

- A. Remove any loose paint and smooth out any surface nicks or rough areas by polishing lightly with fine grit abrasive cloth.
- B. Clean area to be inspected to remove old grease, dirt, grit or other foreign material.
- C. Coat inspection area with couplant.

4. Instrument Calibration

- A. Coat the surface of the reference standard with couplant.
- B. Calibrate instrument for the two separate inspections shown in Detail III and Detail IV in Figure 2.
- C. For inspecting the apex end of the torsion link, use the transducer positioning fixture and calibrate the instrument as shown in Detail III in Figure 2. For inspecting the opposite side of the bore do not use the transducer positioning fixture. Calibrate the instrument as shown in Detail IV in Figure 2.
- D. Locate the ultrasonic response from the 0.030-inch deep notch and note its position and characteristic movement.

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- E. Position the defect signal in the center of the instrument scope and adjust sensitivity to give a 100 percent response from the notch. Suppression may be used to clarify signal response if desired.

5. Inspection Procedure

- A. Inspect both upper and lower torsion links.
- B. Use an ample amount of couplant.

ALL

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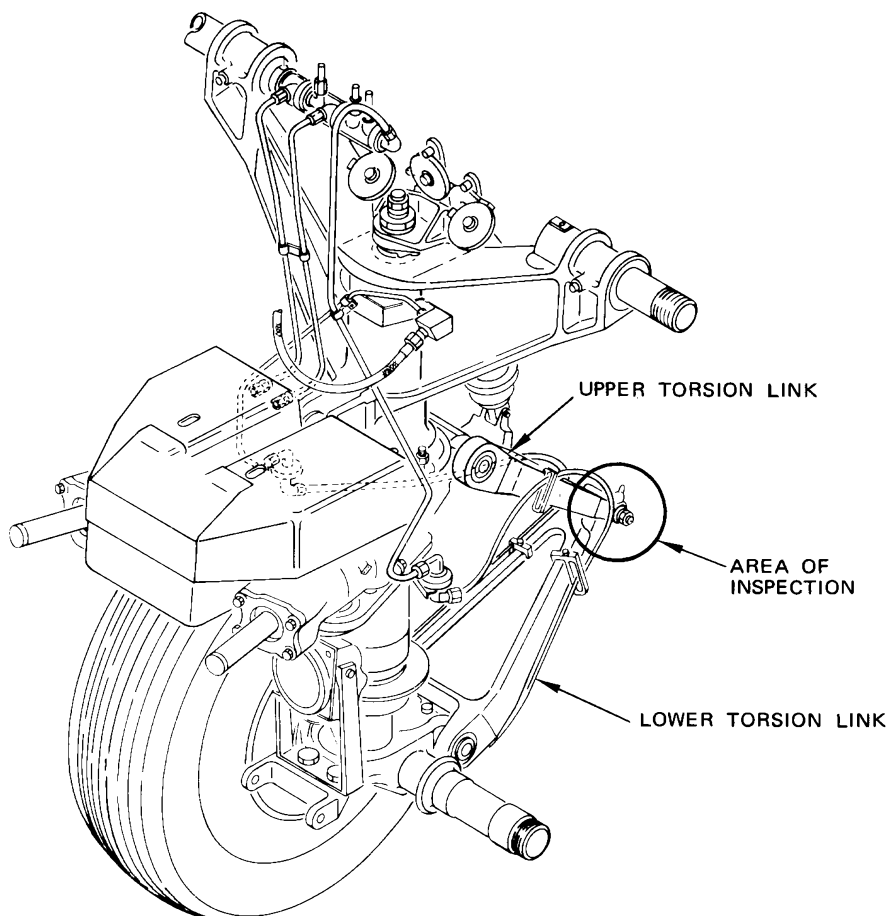
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Nose Landing Gear
Figure 1

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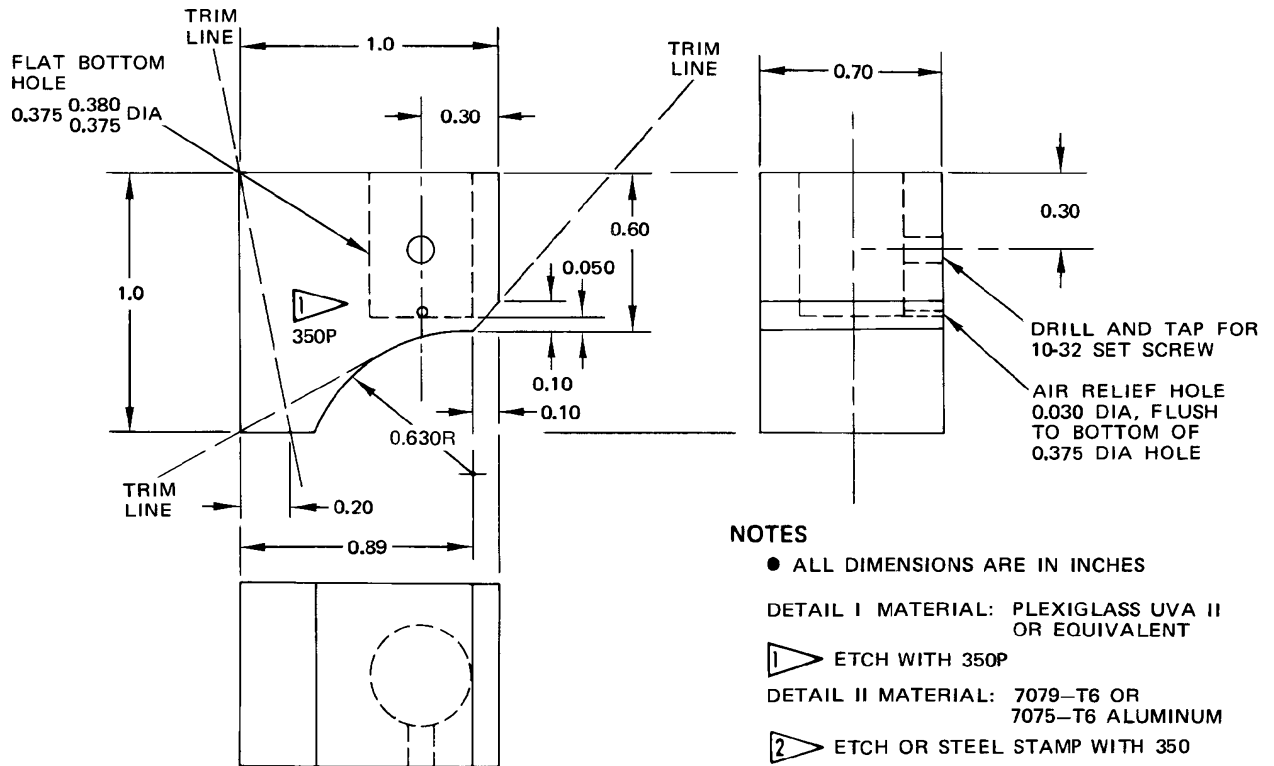
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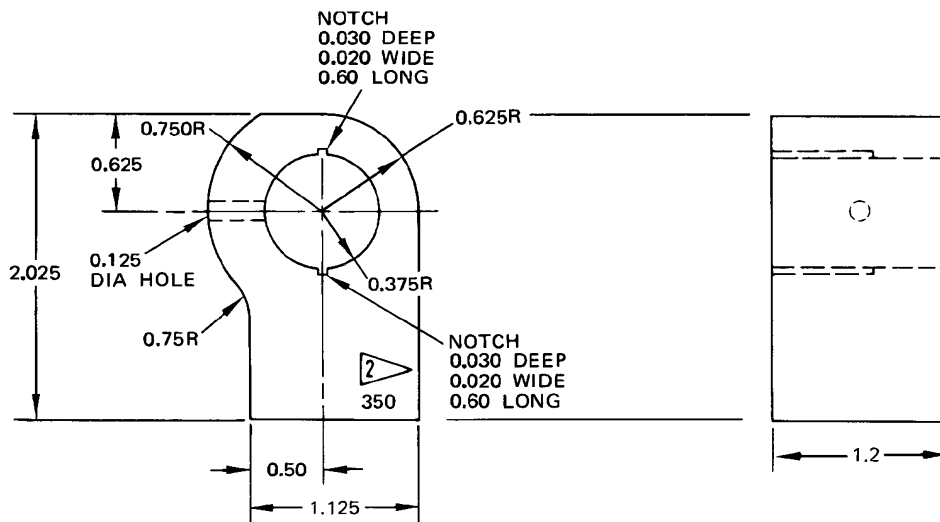
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TRANSDUCER POSITIONING FIXTURE 350P
DETAIL I



REFERENCE STANDARD 350
DETAIL II

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Nose Landing Gear - Upper and Lower Torsion Links Apex Figure 2 (Sheet 1 of 2)

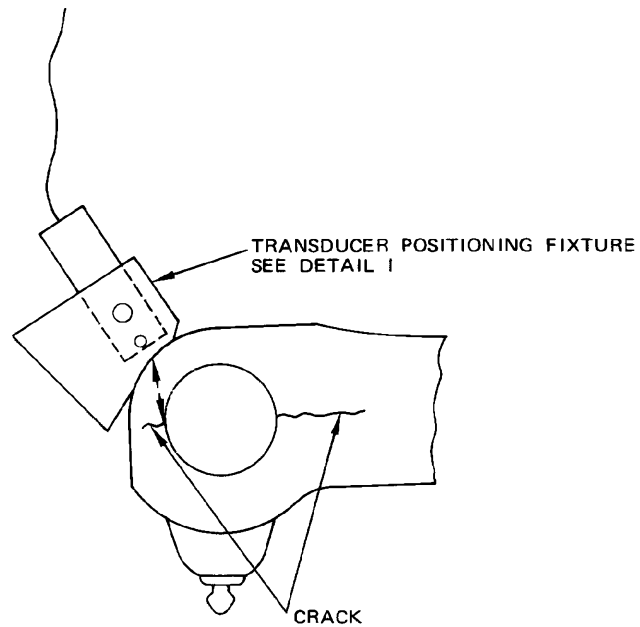
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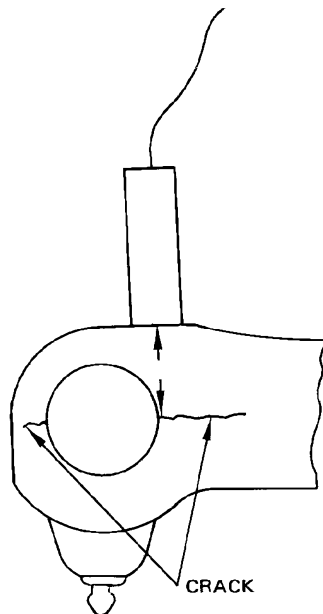
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CALIBRATION FOR INSPECTION OF APEX END
OF TORSION LINK (SHEAR WAVE)
DETAIL III



CALIBRATION FOR INSPECTION OF OPPOSITE SIDE
OF BORE OF TORSION LINK (LONGITUDINAL WAVE)
DETAIL IV

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Nose Landing Gear - Upper and Lower Torsion Links Apex
Figure 2 (Sheet 2 of 2)

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