CHAPTER 32 — LANDING GEAR

CONTENTS — MAINTENANCE PROCEDURES

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LANDING GEAR

32-1. LOW AND HIGH SKID LANDING GEAR SYSTEMS.

The low (standard) and high skid landing gear consists of two tubular aluminum alloy main skid tubes and two curved tubular aluminum crosstubes.

Airflow type fairings are provided on the forward and aft crosstubes. The landing gear is attached to the fuselage structure with four strap assemblies.

Provisions are made on skid tubes for installing ground handling wheels and tow rings for towing. Each skid tube is equipped with replaceable skid shoes. The skid shoes absorb the wear caused by normal ground contact of the landing gear.

WARNING

NO COMPONENTS SHALL BE ATTACHED TO LANDING GEAR ASSEMBLY EXCEPT AS DESIGNATED BY MANUFACTURER. TO DO OTHERWISE MAY RESULT IN PREMATURE FAILURE OF THE CROSSTUBE.

32-2. LANDING GEAR ASSEMBLY.

32-3. INSPECTION.

1. Do the steps that follow to determine the condition and security of the landing gear assembly.

NOTE

This inspection determines if any of the components of the landing gear assembly are damaged to the extent that replacement or repair is necessary. This inspection is with landing gear assembly installed on the helicopter.

a. Inspect attachment of the landing gear crosstubes to fuselage fittings and straps; ensure all bolts are secure.

b. Inspect attachment of crosstubes to skid saddles and ensure screws are secure.

c. Inspect skid tubes for damage.

d. Inspect exposed portion of crosstubes for damage.

e. If installed, inspect skid gear fairings for condition.

f. Inspect sealant and paint for condition. Touch up damaged sealant and paint.

2. Do the following steps to determine condition and security of the landing gear assembly after a hard landing.

a. Inspect landing gear assembly for condition and security.

b. Inspect landing gear assembly for excessive crosstube deflection.

c. If installed, remove the landing gear fairing and examine the crosstube transition area near skid saddles for cracks.

3. After a lightning strike do the steps that follow:

a. Inspect landing gear assembly condition and security.

b. Inspect attachment of landing gear crosstubes to fuselage fittings and straps. Examine for signs of electrical arcing.

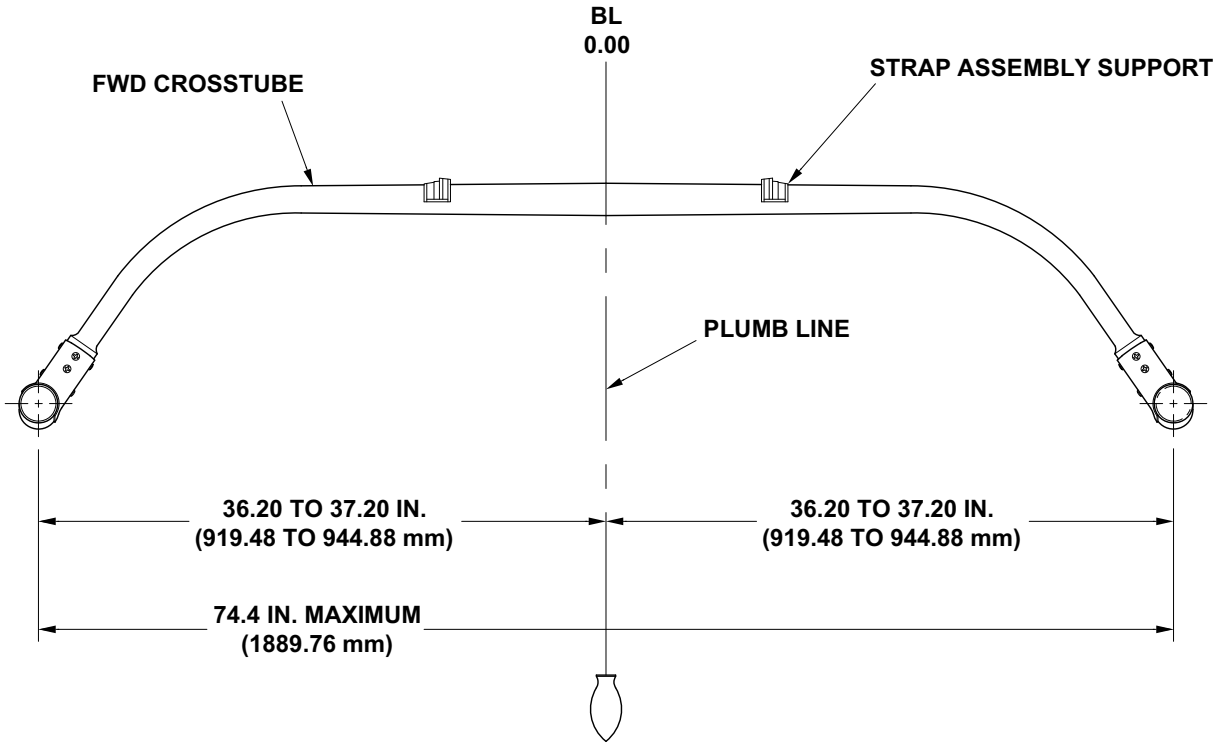
c. Inspect attachment of crosstubes to skid saddles. Examine for signs of electrical arcing.

32-4. CROSSTUBE DEFLECTION.

Inspect forward and aft crosstube assemblies (figure 32-1) for excessive deflection and/or permanent set as follows:

1. Place helicopter on jacks and raise a sufficient amount to remove all weight from the skid tubes (Chapter 7).

2. Level helicopter (Chapter 8).



FORWARD AND AFT LOW SKID CROSSTUBES

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Figure 32-1. Crosstube Deflection

3. Measure lateral distance between left and right strap assemblies on forward or aft crosstube assemblies and divide by 2 to determine helicopter centerline (butt line (BL) 0.0).

NOTE

The allowable permanent set of crosstube assemblies with weight of helicopter removed for standard (low) skid gear is 1.0 inch (25.40 mm) per side.

4. Measure the dimension between the centerline of the helicopter to the centerline of the crosstube and ensure the defection limits are within the limits of figure 32-1.

Table 32-1. Low skid crosstube deflection limits

TYPE	NORMAL	MAXIMUM
Low skid gear with tubular skid tubes	36.20 in. (919.48 mm)	37.20 in. (944.88 mm)

32-5. INSPECTION AND REPAIR (INSTALLED).

32-6. Skid Tubes.

1. Inspect skid tubes for damage in excess of reparable damage limits as follows:

a. Scratches, scuffs, and nicks exceeding 0.015 inch (0.38 mm) deep in skid tube may be repaired by patching (figure 32-2).

b. Smooth or sharp dents exceeding 1.0 inch (25.40 mm) diameter and/or 0.025 inch (0.64 mm) depth but not exceeding 2.0 inches (50.80 mm) in diameter in skid tube (20, figure 32-1) may be repaired by patching.

c. Holes in one surface of skid tube only up to a diameter of 2.0 inches (50.80 mm) may be repaired by patching.

d. Scratches, dents, and holes in excess of the 2.0 inches (50.80 mm) limit in skid tube may be repaired by splicing in a new section of tubing.

2. Inspect for damage to skid tube within 4.5 inches (114.30 mm) of crosstube saddles. Damage in excess of negligible damage limits necessitates replacement of skid tube.

a. Circumferential scratches and nicks which do not exceed a depth of 0.015 inch (0.38 mm) and an arc length of 90 degrees.

b. Scratches, scuffs, and nicks running longitudinally in skid tube (20) may be of any length but shall not exceed a depth of 0.015 inch (0.38 mm).

c. Smooth dents in skid tubes that do not exceed 0.025 inch (0.64 mm) in depth and 1.0 inch (25.40 mm) in diameter are acceptable.

d. Corrosion damage not exceeding 0.015 inch (0.38 mm) deep is allowed over an area not exceeding 1/4 circumference by 3.0 inches (76.20 mm) in length after cleanup.

e. When removing corrosion, check pockets and hidden areas for scratches, dents, and nicks of any depth and length aft of saddle.

f. Scratches, dents, and nicks of any depth and length in curved portion only of skid tube forward of forward saddle.

3. Inspect tow ring (37, figure 32-3) for serviceability and security.

4. Inspect forward and aft saddles (38, 39, and 40), and retainer (36) for cracks, damage, loose rivets (34 and 35), and loose screws.

5. Inspect forward and aft straps (46 and 49) for security, and that abrasion strips (52) are installed and bonded in place.

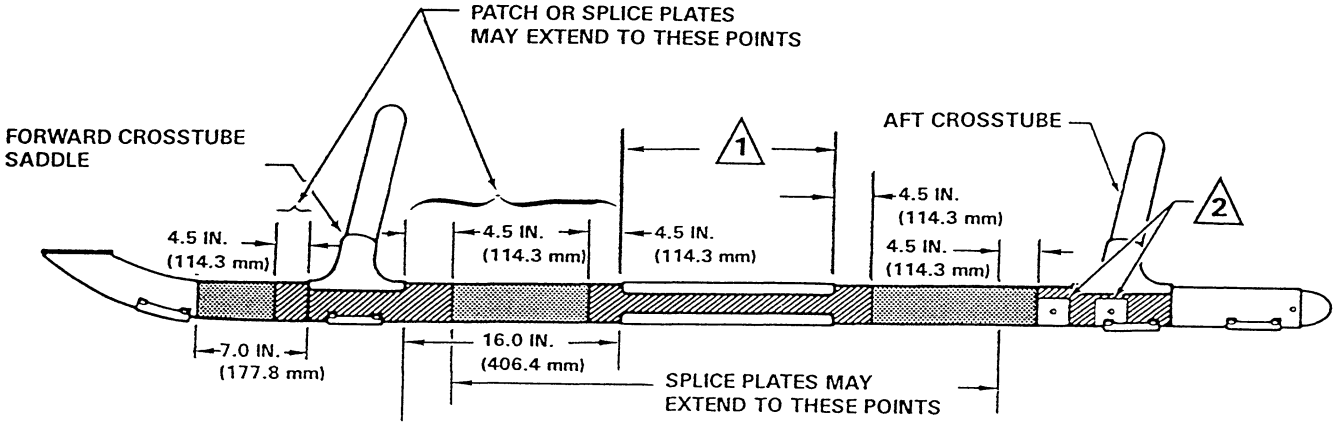
6. Inspect bolts (30 and 31), spacers (29 and 33), washers (28 and 32), and nut (27) for serviceability and security.

7. Inspect doublers (55), for cracks and loose or missing rivets and plug assembly (44) for serviceability and security.

8. Inspect plug assemblies (43) for security. Repairs are not required in this area except holes should be plugged to prevent moisture entrapment.

9. Inspect skid shoe for wear or damage. Repair or replace as required (paragraph 32-11).

10. Remove paint finish and dirt from any damaged surfaces using paint remover (C-436), methyl-ethyl-ketone (MEK) (C-309) or abrasive pads.



REPAIRS BY PATCHING OR INSERTION NOT PERMITTED

REPAIRS BY PATCHING OR INSERTION PERMITTED

REPAIR NOT REQUIRED IN THIS AREA — HOLES SHOULD BE PLUGGED TO PREVENT MOISTURE ENTRAPMENT.

NOTES

1. **No patches allowed under doublers on 206-050-118 skid tube. Damage in this area exceeding negligible limits requires repair by splicing entire doubler length using the required length of skid tube and doublers which are undamaged.**

2. **Doublers required on all standard skid tubes.**

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Figure 32-2. Standard (low) skid tube damage limits

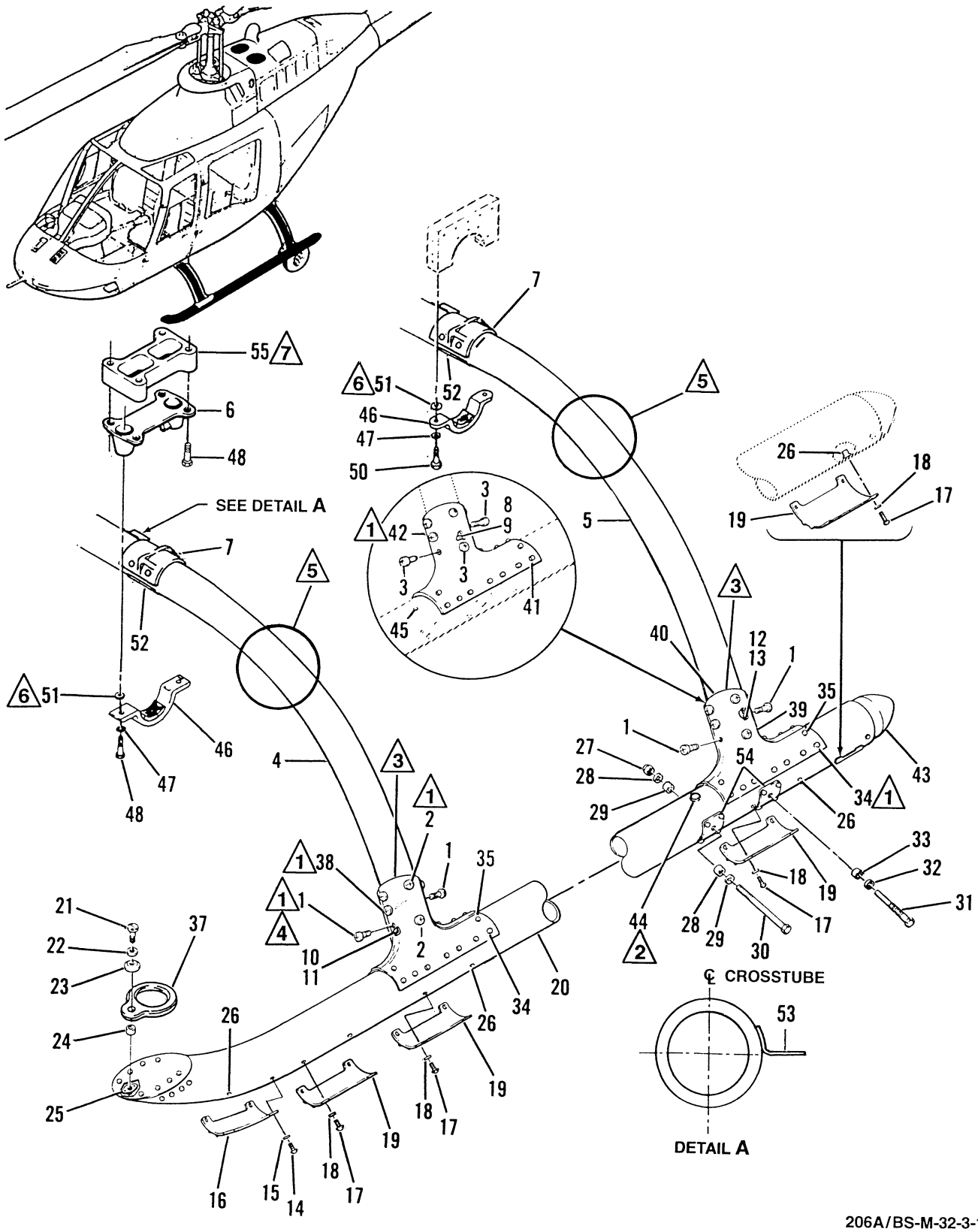


Figure 32-3. Standard (low) skid landing gear (Sheet 1 of 2)

1. Screw
2. Screw
3. Screw
4. Crosstube assembly (FWD)
5. Crosstube assembly (AFT)
6. Fuselage fitting
7. Strap assembly
8. Plate assembly
9. Nutplate
10. Plate assembly
11. Nutplate
12. Plate assembly
13. Nutplate
14. Screw
15. Washer
16. Shoe assembly
17. Screw
18. Washer
19. Shoe assembly
20. Skid tube
21. Screw
22. Washer
23. Washer
24. Spacer
25. Nutplate
26. Nut assembly
27. Nut
28. Washer
29. Spacer
30. Bolt
31. Bolt
32. Washer
33. Spacer
34. Rivet
35. Rivet
36. Retainer
37. Tow ring
38. Saddle (FWD)
39. Saddle (AFT)
40. Saddle (AFT)
41. Rivet
42. Saddle (AFT)
43. Plug assembly
44. Plug assembly
45. Plug assembly
46. Strap assembly (FWD)
47. Washer
48. Bolt
49. Strap assembly (AFT)
50. Bolt
51. 140-009C16S48 washer
52. Abrasion strip
53. Clip
54. Doubler
55. Spacer

NOTES

1. See figure 32-9 for proper screw length.
2. Usable with 206-050-118-049, -050, -053, and -054 skid tube assemblies.
3. Apply fillet of sealant (C-392) around top edge of saddle.
4. Install screws with wet sealant (C-392) under heads.
5. Wrap two turns (minimum) of pretrimmed Teflon tape (C-460) around crosstube to accommodate fairing installation.
6. Install washers wet with epoxy polyamide primer (C-204).
7. Usable on helicopters S/N 154 and subsequent.

206A/BS-M-32-3-2

Figure 32-3. Standard (low) skid landing gear (Sheet 2)

11. Remove all corrosion utilizing corrosion treatment (C-114). When removing corrosion, check pockets and hidden areas for corrosion indications. Refer to CSSD-PSE-87-001, Corrosion Control Guide.

12. Repair skid tube in accordance with figures 32-2 and 32-4.

NOTE

Patch repairs are limited to top of skid tube (20, figure 32-3) and in area shown in figure 32-2 and 32-4.

13. Repair nicks and scratches (paragraph 32-9) that do not exceed inspection limits.

NOTE

Inspection interval should be determined considering helicopter gross weight, landing cycles, and ground handling conditions and frequency.

32-7. Crosstubes.

1. Inspect crosstube assemblies (4 and 5, figure 32-3), for cracks using fluorescent penetrant or dye penetrant inspection method (BHT-ALL-SPM). Remove paint from crosstubes with MEK (C-309). A nonmetallic bristle brush will aid in removal of paint and cleanup. If no cracks are found, paint crosstubes with epoxy polyamide primer (C-204), and refinish as required.

2. Remove skid tubes (paragraph 32-8).

3. Inspect strap assemblies (7) for loose, damaged, or missing rivets (paragraph 32-9).

NOTE

For removal of solid film lubricant, refer to BHT-ALL-SPM.

4. Inspect forward and aft crosstube assemblies (4 and 5) for damage as follows:

NOTE

See figure 32-4 for crosstube inspection limits.

a. Scratches, nicks, and dents of less than 0.005 inch (0.13 mm) depth that do not exceed a 90 degree arc are considered negligible.

b. Circumferential scratches and nicks that exceed 0.005 inch (0.13 mm) depth and do not exceed a 45 degree arc may be polished out to the limits shown in figure 32-4.

c. Longitudinal scratches and nicks of any length that exceed 0.005 inch (0.13 mm) depth may be polished out to the limits shown in figure 32-4.

d. Only one damage rework may occur per a specific length of tube.

e. If damage exceeds the above limits, replace crosstube.

5. Repair nicks and scratches that do not exceed inspection limits (paragraph 32-10).

6. Install skid tubes (20, figure 32-3) (paragraph 32-14).

32-8. REMOVAL.

CAUTION

IF HOIST MUST BE USED TO RAISE HELICOPTER WHEN REMOVING LANDING GEAR OR COMPONENTS. SECURE HELICOPTER TO STABILIZE IT WHILE IT IS SUPPORTED BY HOIST. HOIST RATING 5000 POUNDS (2268 KILOGRAMS).

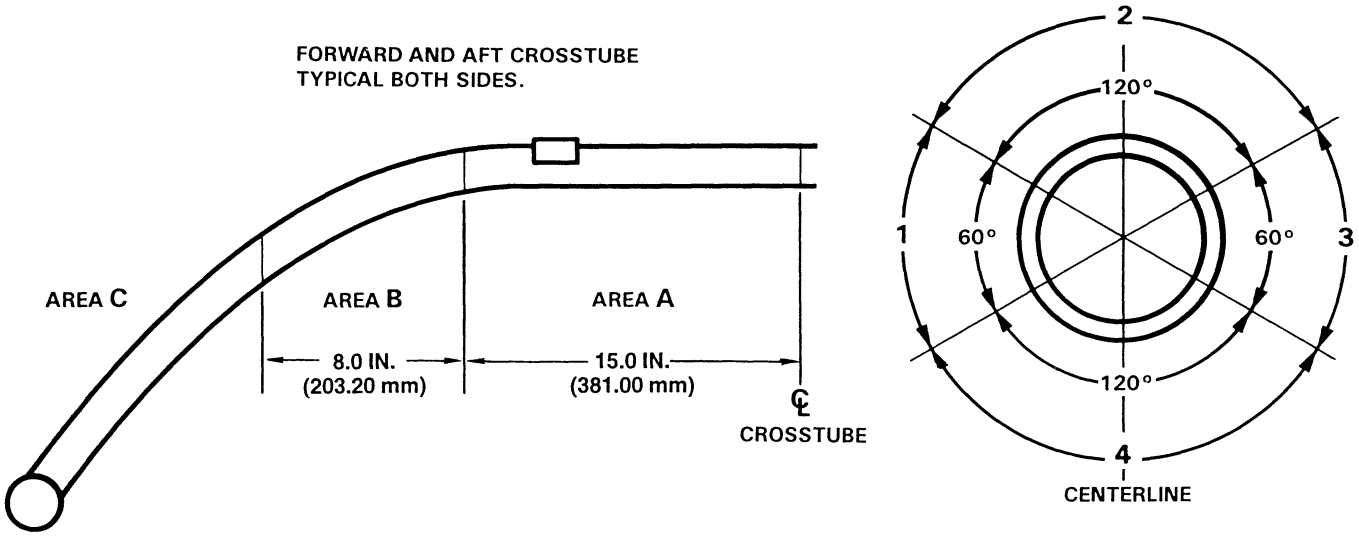
NOTE

The landing gear may be removed as a complete assembly or individual components may be removed separately.

1. Remove screws and washers attaching crosstube fairings (paragraph 32-17).

2. Hoist or jack helicopter clear of ground (Chapter 7).

3. Support landing gear and remove bolts (48 and 50, figure 32-3), washers (47), washers (51), and strap assemblies (46). Lower landing gear assembly to ground.



AREA	FORWARD CROSSTUBE				AFT CROSSTUBE			
	REFERENCE THICKNESS		ALLOWABLE LIMITS		REFERENCE THICKNESS		ALLOWABLE LIMITS	
	IN.	mm	IN.	mm	IN.	mm	IN.	mm
A1 ⚠2	0.160	4.06	0.015	0.38	0.295	7.49	0.015	0.38
A2	0.160	4.06	0.005	0.13	0.295	7.49	0.005	0.13
A3 ⚠2	0.160	4.06	0.015	0.38	0.295	7.49	0.015	0.38
A4	0.160	4.06	0.005	0.13	0.295	7.49	0.005	0.13
B1 ⚠2	0.160	4.06	0.015	0.38	0.212	5.38	0.015	0.38
B2	0.160	4.06	0.005	0.13	0.212	5.38	0.005	0.13
B3 ⚠2	0.160	4.06	0.015	0.38	0.212	5.38	0.015	0.38
B4	0.160	4.06	0.005	0.13	0.212	5.38	0.005	0.13
C1 ⚠2	0.160	4.06	0.015	0.38	0.130	3.30	0.013	0.33
C2 ⚠2	0.160	4.06	0.015	0.38	0.130	3.30	0.013	0.33
C3 ⚠2	0.160	4.06	0.015	0.38	0.130	3.30	0.013	0.33
C4	0.160	4.06	0.005	0.13	0.130	3.30	0.005	0.13

206-050-286 (TYPICAL) STANDARD GEAR

NOTES

1. Forward crosstube is not chem-milled.

⚠2 Based on 10 percent of wall thickness up to a maximum of 0.015 inch (0.38 mm).

3. Repairs limited to one repair per area.

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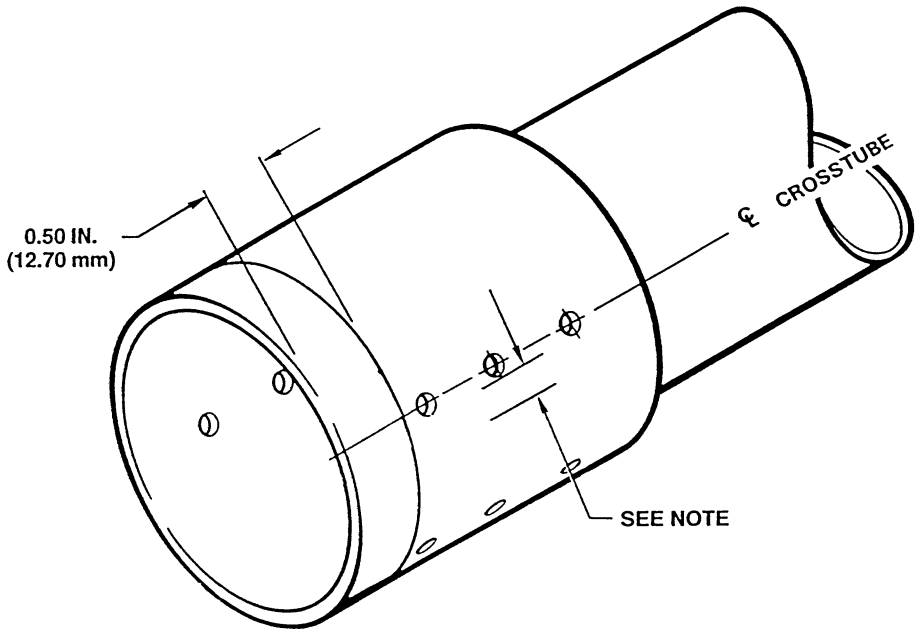
Figure 32-4. Standard (low) skid landing gear crosstube inspection limits (Sheets 1 of 2)



NOTE

0.050 inch (1.27 mm) maximum damage allowed on first 0.50 inch (12.70 mm) of crosstube except that no damage is allowed within 0.315 inch (8.00 mm) of any attachment hole.

206A/BS-M-32-4-2

Figure 32-4. Standard (low) skid landing gear crosstube inspection limits (Sheets 2)

32-9. DISASSEMBLY.

1. Remove skid tube (20, figure 32-3) from crosstube assemblies (4 and 5) as follows:

a. Remove screws (1 and 2) from forward saddle (38).

b. Remove screws (1 and 3) from aft saddles (39, 40, and 42).

c. Trim adhesive from top edge of forward and aft saddles (38, 39, 40, and 42).

d. Remove skid tubes (20) from forward and aft crosstube assemblies (4 and 5) by tapping with rawhide mallet.

2. Remove retainer (36) and saddle assemblies (38) as follows:

a. Remove screws (1) securing aft end of retainer (36) to skid tube (20).

b. Drill out rivets securing retainer (36) to forward end and sides of saddle (38). Deburr holes.

c. Remove retainer (36) and saddle (38) from skid tube. Clean sealant from saddle and skid tube using a plastic scraper and MEK (C-309).

3. Remove skid shoe assemblies (16 and 19) from skid tubes (20) as follows:

a. Remove screws (17 and 14) and washers (18 and 15) attaching skid shoe assembly (19) to skid tube.

b. Remove skid shoe assembly (19) from skid tube.

4. Remove strap assemblies (7) from forward and aft crosstube assemblies (4 and 5) as follows:

CAUTION

EXERCISE CARE NOT TO DAMAGE HOLES IN CROSSTUBES WHEN DRILLING RIVETS OUT.

a. Drill out rivets securing strap assemblies (7) to forward and aft crosstube assemblies (4 and 5).

b. Clean adhesive from forward and aft crosstube assemblies using a plastic scraper and MEK (C-309).

5. Remove 206-050-301-103 abrasion strips (52) from crosstube assemblies (4 and 5) as follows:

a. Remove abrasion strips (52) as required.

b. Clean adhesive from forward and aft crosstube assemblies (4 and 5) using a plastic scraper, abrasive pad and MEK (C-309).

6. Remove 206-050-303-101 electrical bonding clips (54) from forward and aft crosstube assemblies (4 and 5) as follows:

EXERCISE CARE NOT TO DAMAGE HOLES IN CROSSTUBES WHEN DRILLING RIVETS OUT.

a. Drill out rivets securing electrical bonding clips (54) to crosstube assemblies (4 and 5).

b. Clean adhesive from crosstube assemblies (4 and 5) using a plastic scraper and MEK (C-309).

32-10. REPAIR.

1. Negligible damage to landing gear components may be polished out with abrasive pad or 400 grit abrasive cloth or paper. Touch up paint as prescribed in BHT-ALL-SPM.

2. Clean and treat corroded areas on landing gear with chemical film material (C-100) (BHT-ALL-SPM).

3. Refinish repaired areas to match existing paint finish (BHT-ALL-SPM).

4. Install strap assemblies, (7, figure 32-3) on forward and aft crosstube assemblies (4 and 5) as follows:

a. Ensure existing holes in crosstube assemblies (4 and 5) and strap assembly (7) are properly deburred internally and externally. Prime holes with epoxy polyamide primer (C-204).

b. Prime faying surface of crosstube assemblies (4 and 5) with epoxy polyamide primer (C-204).

c. Lightly abrade faying surface of buffer pad bonded on the inside of the strap assembly (7) with abrasive pad. Wipe clean with MEK (C-309).

d. Coat faying surfaces of strap assembly (7) and crosstube assemblies (4 and 5) with sealant (C-392).

e. Locate strap assembly (7) on crosstube assemblies (4 and 5) using existing holes for alignment.

f. Secure strap assembly (7) with rivets CR4623CW6-( ) (inboard) and rivets CR4622CW6-( ) (outboard). Use grip length -5 for forward crosstube assembly (4) and -9 for aft crosstube assembly (5). Double check required rivet grip with gage. Install rivets with wet sealant (C-392). Encapsulate rivet heads with sealant.

g. Seal edges of strap assembly (7) with sealant (C-392).

5. Install 206-050-301-103 abrasion strips (52) on forward crosstube assemblies (4), and -105 on aft crosstube assemblies (5) as follows:

a. Faying surface of crosstube assemblies (4 and 5) must be primed with epoxy polyamide primer (C-204) and let air dry. Lightly abrade the primed faying surface with abrasive pads. Wipe clean with MEK (C-309) or equivalent.

b. Lightly abrade the finish on faying surface of abrasion strip (52) with abrasive pad. Wipe clean with MEK (C-309).

c. Apply adhesive (C-381) to faying surface of abrasion strip (52).

d. Locate -105 aft abrasion strip (52) longitudinal centerline (CL) with longitudinal CL of strap assembly support (7). Locate -103 forward abrasion strip (52) longitudinal CL with longitudinal CL of outboard rivet on strap assembly support (7). The -103 forward abrasion strip (52) is 4.25 inches (107.95 mm) wide. The -105 aft abrasion strip (52) is 3.0 inches (76.20 mm) wide.

e. Remove excess adhesive squeeze-out from around abrasion strip. Apply 0.5 to 10.0 psi (3.45 to 68.95 kPa) pressure on bonded joint. Allow to dry.

f. Lightly abrade surface of abrasion strip (52). Prime and finish as required.

6. Install 206-050-303-101 electrical bonding clips (54) on forward crosstube assembly (4), and -103 on aft crosstube assemblies (5) as follows:

a. Ensure existing rivet holes in crosstube assemblies (4 and 5) are properly deburred internally and externally. Prime holes with epoxy polyamide primer (C-204).

b. Ensure faying surfaces of crosstube assemblies (4 and 5) and clip (54) are free of paint, primer, and contaminants. Wipe surface clean with MEK (C-309).

c. Locate clips (54) on crosstube assemblies (4 and 5) using existing rivet holes for alignment. Secure clips (54) with rivets M7885/2-4-4 on forward crosstube assembly (4), and M7885/2-4-8 on aft crosstube assembly (5). Install rivets with wet sealant (C-392). Encapsulate rivet heads with sealant.

d. Prime bare metal around clip (54) with epoxy polyamide primer (C-204). Allow to dry.

e. Seal edges of clip (54) with sealant (C-392). Allow to dry.

f. Finish as required.

7. Patch skid tubes (20) as follows:

NOTE

Patch repairs are limited to top of skid tube in areas shown in figure 32-5.

a. Polish out scratches. Trim and smooth hole.

b. Fabricate a patch of required size from 0.090 inch (2.29 mm) aluminum alloy sheet (7075-T6, WW-T-700/7), or the same gage and material as damaged skid tube.

c. Lay out rivet hole pattern and form patch to fit contour of skid tube.

d. Securely clamp patch in place on skid tube and using No. 27 drill bit, drill 0.205 to 0.209 inch (5.21 to 5.31 mm) diameter rivet holes.

e. Remove patch and deburr as necessary.

f. Remove paint and dirt from damaged area and both sides of patch.

g. Apply a coat of epoxy polyamide primer (C-204) to both sides of patch. Allow primer to dry. Coat side of patch that will mate to skid tube with adhesive (C-308).

h. Position patch and rivet in place.

i. Apply a coat of epoxy polyamide primer (C-204) over repaired area. When dry, apply two or three coats of polyurethane topcoat (C-218) of color to match original finish (BHT-ALL-SPM).

8. If necessary, repair skid tube (20, figure 32-3) using inserts as follows:

NOTE

Dents and holes on either top or bottom side of skid tube that are greater than 2.0 inch (50.80 mm) across in any direction may be repaired by inserting a splice of new tubing (figure 32-5).

a. Cut out damaged portion of skid tube and deburr.

b. Obtain insert tube of same outside diameter and thickness as original 7075-T6 aluminum alloy tube, Specification WW-T-700/7, or equivalent. Use cutout portion of damaged tube, or measure before making cutout, to ensure insert tube is of exactly same length as cutout portion.

c. Obtain four splice plates of same material and/or one gage heavier than tube being repaired; two plates to fit inside diameter, and two plates to fit outside diameter of tube being repaired. Plates shall be long enough to accommodate rivet patterns (figure 32-5).

NOTE

When drilling rivet hole patterns in lower portion of skid tube, note location of skid shoe attachment holes.

d. Lay out inner splice plate rivet pattern on forward and aft portions of tube being repaired.

e. Position inner splice plates in skid tube (20, figure 32-3) portions and temporarily secure in place (figure 32-5).

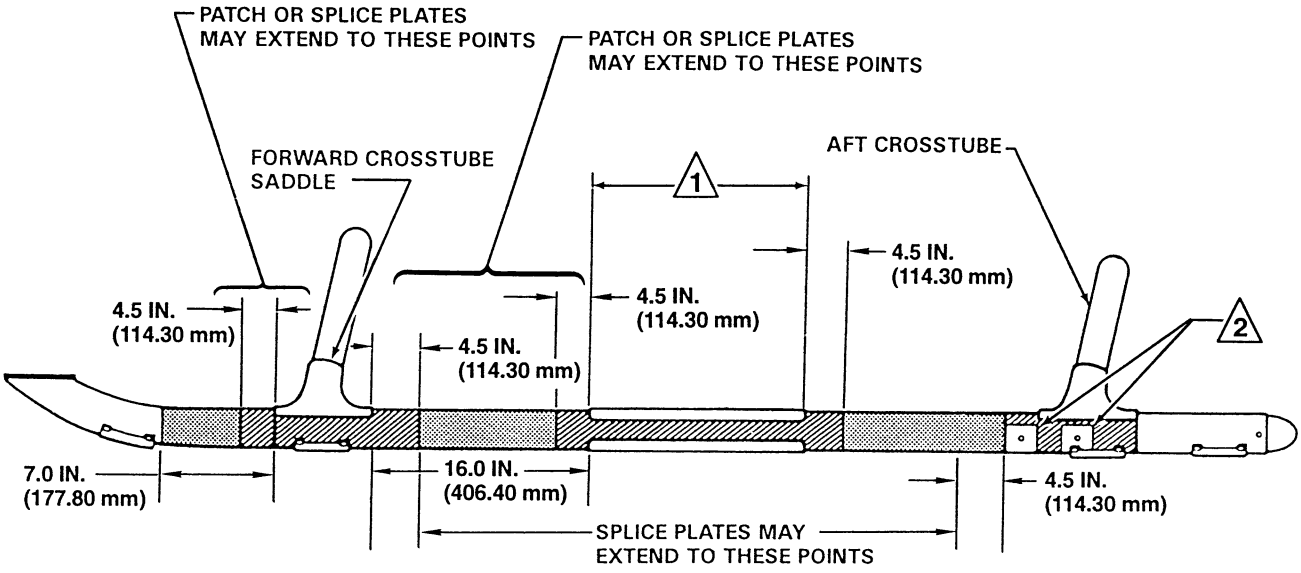
f. Drill rivet holes and countersink for 100 degree flush rivets. Deburr holes.

g. Reposition inner splice plates and secure using metal fasteners.

h. Position insert tube over inner splice plates and flush with both forward and aft portions of skid tube being repaired.

i. Continue rivet hole pattern previously drilled. Countersink for 100 degree flush rivets. Deburr holes.

j. Clean all paint and dirt from insert tube, both sides of splice plates, and areas of both skid tube portions that will be contacted by splice plates.



REPAIRS BY PATCHING OR INSERTION NOT PERMITTED

REPAIRS BY PATCHING OR INSERTION PERMITTED

REPAIR NOT REQUIRED IN THIS AREA — HOLES SHOULD BE PLUGGED TO PREVENT MOISTURE ENTRAPMENT.

NOTES

1. **No patches allowed under doublers on 206-050-118 skid tube. Damage in this area exceeding negligible limits requires repair by splicing entire doubler length using the required length of skid tube and doublers which are undamaged.**

2. **Doublers installed on 206-050-118 skid tube only.**

206A/BS-M-32-5

Figure 32-5. Landing gear skid tube repair

k. Apply a coat of zinc chromate primer (C-201) to inside and outside of insert tube, both sides of inner splice plates, and inner surfaces of both skid tube portions that will be contacted by inner splice plates. Allow primer to dry.

l. Apply a coat of adhesive (C-308) to surfaces of inner splice plates that will contact insert tube and forward and aft portions of skid tube (20, figure 32-3) being repaired.

m. When positioning insert tube, ensure ends are flush fit with forward and aft portions of skid tube being repaired.

n. Position inner splice plates and insert tube and rivet in place.

o. Position outer splice plates over insert tube and forward and aft portions of skid tube being repaired.

p. Drill rivet hole pattern. Deburr holes.

q. Clean all paint and dirt from insert tube, both sides of splice plates, and areas of both skid tube (20) portions that will be contacted by splice plates.

r. Apply a coat of epoxy polyamide primer (C-204) to cleaned areas and allow to dry.

s. Apply a coat of adhesive (C-308) to surface of outer splice plates that will contact insert tube and forward and aft portions of skid tube being repaired.

t. Position outer splice plates and rivet in place.

u. Apply a coat of epoxy polyamide primer (C-204) over entire repaired area. When dry, apply two or three coats of polyurethane topcoat (C-218) to match color of original finish (BHT-ALL-SPM).

9. Polish out mechanical damage or corrosion from retaining straps (46 and 49) within tolerances shown in figure 32-6 . Refer to CSSD-PSE-87-001 , Corrosion Control Guide, for removal and treatment of corrosion.

32-11. TOW RING REPAIR.

NOTE

Nutplate (4, figure 32-7), shall not be removed unless damaged or corroded excessively.

1. Fabricate cover (2) from 0.050 inch (1.27 mm) 2024-T3 aluminum alloy. Fabricate stiffener (5) from 0.050 inch (1.27 mm) and clips (3) from 0.032 inch (0.81 mm) 2024-T0 aluminum alloy; heat treat to T-42 after forming. Apply chemical film material (C-100) to all bare aluminum surfaces (BHT-ALL-SPM).

2. Prime all parts with one coat of epoxy polyamide primer (C-204) before and after assembly.

3. Assemble and secure parts with rivets of proper grip length as shown in figure 32-7. Apply a band of adhesive (C-308) to and around mating surfaces of cover and skid tube to prevent moisture entry and entrapment.

4. Apply a coat of epoxy polyamide primer (C-204) over entire repair area. When dry, apply two or three coats of polyurethane topcoat (C-218) to match original finish (BHT-ALL-SPM).

5. Replace ring (1) if necessary.

32-12. INSPECT AND REPAIR — SKID SHOES.

1. Inspect skid shoe assemblies (16 and 19, figure 32-3) for wear or damage.

NOTE

Landing gear skid tube shoes may be repaired by hot reforming, reshaping, or welding (figure 32-8).

2. Check rivnuts for damage. Replace loose or damaged rivnuts.

3. Dents in attaching skid shoe tabs may be hot reformed or reshaped provided borium weld beads on bottom of shoe are not damaged.

CAUTION

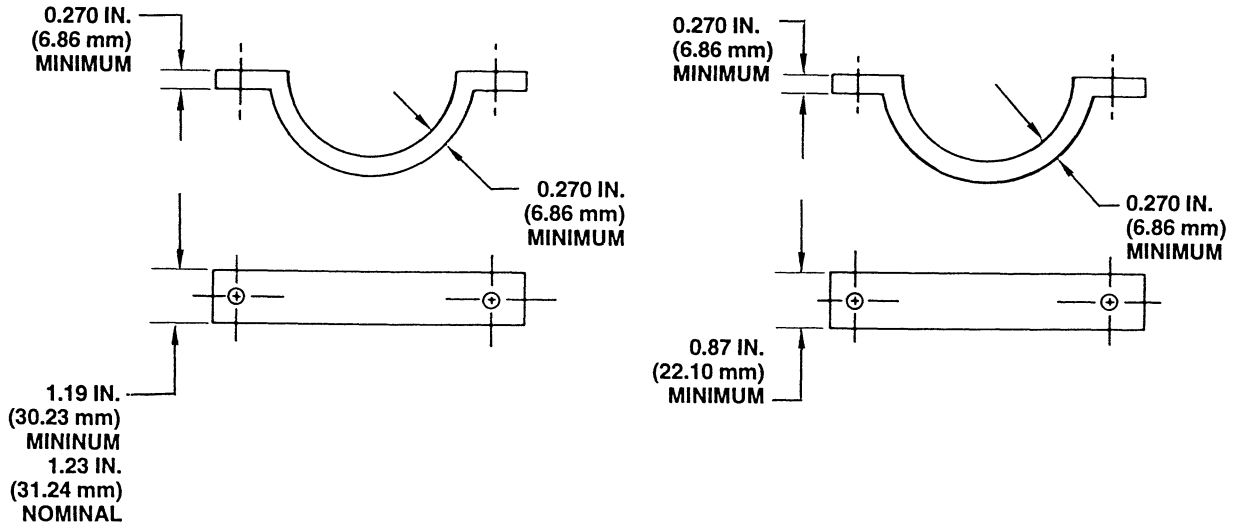
PRIOR TO ANY WELDING REPAIR, REMOVE SKID SHOE FROM TUBE TO AVOID DAMAGE TO ALUMINUM SKID TUBE FROM EXCESSIVE HEAT.

4. Remove cadmium plating from skid shoes prior to welding repair as follows:

NOTE

Cadmium plated stripped parts are very susceptible to corrosion and shall be immediately repaired and primed.

a. Mix a solution of 16 fluid ounces (454.60 ml) of ammonium nitrate per gallon (3.79 liters) of water.

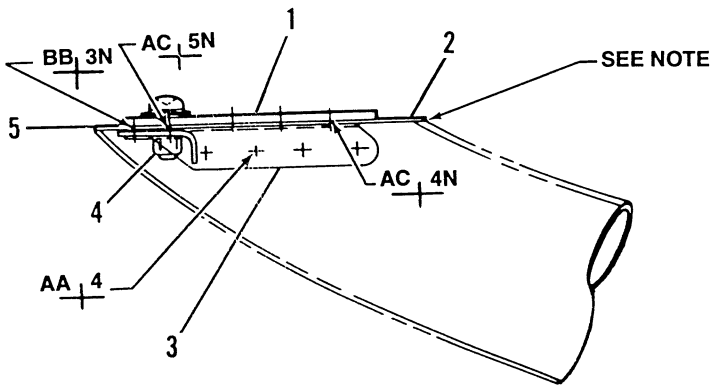


DAMAGE LOCATION SYMBOL

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH
MECHANICAL AND CORROSION	Damage not to exceed the above limits after cleanup. Damage exceeding a depth of 0.01 in. (0.25 mm) should be polished out.
MAXIMUM AREA PER FULL DEPTH REPAIR	2 Sq. In. (1290.40 mm ^{2})
NUMBER OF REPAIRS	3 per strap
EDGE CHAMFER	0.05 In. (1.27 mm) by 45 degrees

206A/BS-M-32-6

Figure 32-6. Strap damage limits



1. Ring
2. Cover
3. Clip
4. Nutplate
5. Stiffener

RIVET CODE

AA	—	MS20600AD-4
AC	—	MS20601AD-4N
AC	—	MS20601AD-5N
BB	—	MS20426AD-3N

NOTE

Apply bead of sealant (C-392) around mating surfaces of cover and skid tube.

206A/BS-M-32-7

Figure 32-7. Tow ring repair standard skid gear

b. Maintain solution at a temperature of 120°F (49°C). Immerse skid shoes in solution until all cadmium plating has been removed. Rinse shoes in clean water and air dry.

c. After repair and cleanup of weld deposits, apply brush cadmium plating solution (C-108), or two coats of epoxy polyamide primer (C-204). When dry, apply two or three coats of polyurethane topcoat (C-218) to match original finish (BHT-ALL-SPM).

5. Check bottom of skid shoes for evidence of weld bead. Bead may be reformed if worn. Do not use skid shoes that have weld beads completely worn off (view A, figure 32-8).

NOTE

Transverse cracks across weld beads are permissible and should not be cause for repair or replacement of skid shoes.

a. Remove cadmium plating from skid shoes (step 4.).

b. Weld two full length beads 0.06 to 0.10 (1.52 to 2.54 mm) high along skid shoe using acetylene and 0.125 inch (3.18 mm) hard facing weld tube (borium) available from Stoody Manufacturing Company, 12021 E. Slauson Ave., Whittier, California 90608, or DT 600 E. HM 0.125 inch hard facing weld tube available from Reed Tool Co., 6501 Navigation Blvd., Houston, Texas 77011.

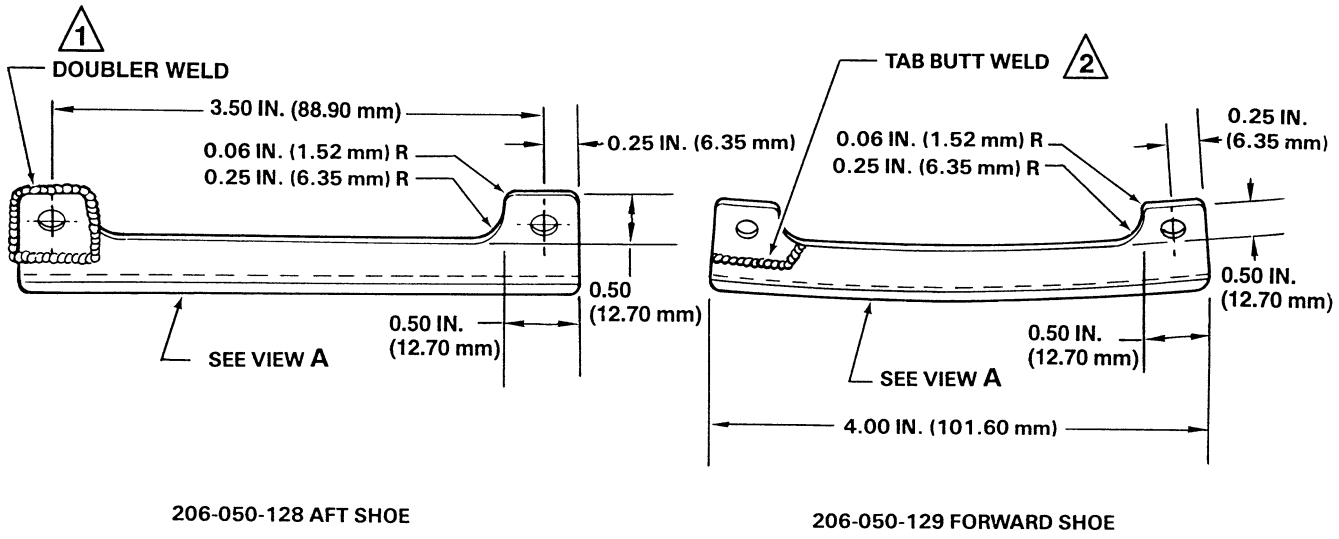
c. Hot reform skid shoe, as required, to fit contour of skid tube.

d. Apply a coat of epoxy polyamide primer (C-204) to skid shoe. When dry apply two or three coats of polyurethane topcoat (C-218) to match original finish (BHT-ALL-SPM).

6. Elongated holes in tabs on skid shoes may be repaired by fabricating a doubler or new tab as follows:

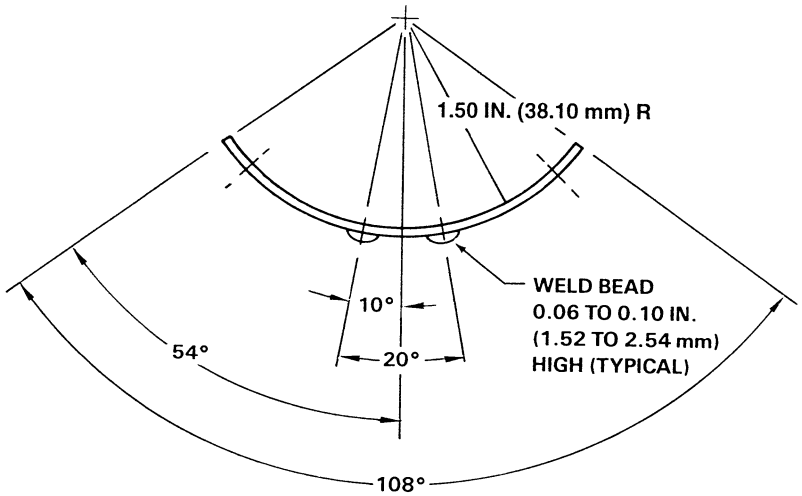
a. Fabricate a rectangular doubler of required size from 0.050 inch (1.27 mm) normalized 4130 steel, MIL-S-18729 (figure 32-8).

b. Remove cadmium plating from skid shoes (step 4).



206-050-128 AFT SHOE

206-050-129 FORWARD SHOE



VIEW A

NOTES

1. Fabricate doubler of normalized 4130 steel, MIL-S-18729, 0.050 inch (1.27 mm) thickness and of same configuration as damaged tab. Grind weld smooth on side adjacent to skid tube and under retaining screwhead.

2. Fabricate tab of normalized 4130 steel, MIL-S-18729, and of same configuration as removed tab. Grind weld smooth on side adjacent to skid tube and under retaining screwhead.

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Figure 32-8. Standard (low) gear skid shoe repair

c. Secure doubler to skid shoe tab by welding (arc or gas method) in accordance with accepted welding practices around entire periphery of doubler. Grind weld smooth on side adjacent to skid tube.

7. Severely damaged skid shoe tabs may be replaced or repaired by fabricating a new tab.

a. Cut off damaged tab parallel to skid tube or, if damaged tab can be straightened, reshape to original configuration.

b. Remove cadmium plating from skid shoes (step 4).

c. If damaged tab has been cut from skid shoe, fabricate a similar tab from 0.050 inch (1.27 mm) normalized 4130 steel, MIL-S-18729. Butt weld tab along cut line of skid shoe. Grind weld smooth on side of shoe adjacent to skid tube and location for retaining screwhead.

d. If damaged tab has been reshaped to original configuration, fabricate a doubler and weld (step 6.).

32-13. REFINISHING.

1. Apply a brush solution of chemical film material (C-100) to all interior and exterior surfaces (BHT-ALL-SPM).

NOTE

The brush solution shall contain 3.0 fluid ounces (85.24 ml) by weight of chemical film material (C-100) per gallon (3.79 liters) of distilled or demineralized water and 0.5 fluid ounces (14.79 ml) of nitric acid (C-432). Mix solution thoroughly prior to application. Apply solution liberally to areas to be treated. Keep area wet with solution for 1 to 3 minutes, then flush area thoroughly with clean water.

2. Apply one coat of epoxy polyamide primer (C-204) to all chemically treated surfaces as follows:

a. Clean surfaces to be primed with chlorothene (C-319) and wipe with a tack rag.

b. Prepare epoxy polyamide primer (C-204) (BHT-ALL-SPM).

NOTE

Catalyzed epoxy polyamide primer (C-204) shall be discarded if not used within 4 hours after mixing.

c. Apply one coat of mixed epoxy polyamide primer (C-204) to provide a dry film thickness 0.5 to 0.8 mil. The primer shall be overcoated in not less than 30 minutes and not more than 4 hours. When required, primed surfaces shall be wiped with a tack rag prior to overcoating to remove lint and dust.

3. Use unreduced adhesive (C-322) mixed with epoxy polyamide primer (C-204) and thinned with MEK (C-309), to fill pin holes, grooves, seams or other imperfections. Smooth out excess with plastic squeegee or equivalent.

4. Apply wet spray coats, as applicable, of adhesive (C-322) to all primed and squeegeed surfaces, as follows:

NOTE

Small areas, not exceeding 10 square inches (6452 mm^2), may be brush coated with unthinned adhesive (C-322). Unthinned adhesive shall be air dried for at least 8 hours before overcoating. Large areas shall be coated in accordance with the following procedures:

a. Mix the two-part adhesive (C-322) thoroughly to a uniform gray color. The mixing ratio is 100 parts base to 140 parts hardener by weight.

b. Add 13 to 15 percent by weight of epoxy primer (C-202) to above mixture.

c. Within 30 minutes after mixing, thin above mixture with MEK (C-309). The amount of MEK used for thinning shall be 35 to 40 percent by volume of mixed material.

CAUTION

THE POT LIFE OF MIXED ADHESIVE IS APPROXIMATELY 3 TO 4 HOURS.

d. A kit of adhesive (C-322) consists of 2/3 gallon (2.50 liters) of base and 1 gallon (3.79 liters) of hardener.

e. Thinned adhesive (C-322) shall be applied by spraying and shall be used in conjunction with epoxy polyamide primer (C-204) as follows:

NOTE

Adhesive coating shall be applied over epoxy polyamide primer (C-204) (step 2.) within a minimum of 30 minutes, but shall be applied before 4 hours have elapsed.

(1) Areas not to be coated with adhesive may be masked as necessary. Use masking tape and barrier material (C-427).

(2) Apply three wet coats of adhesive (C-322). Air dry adhesive for a minimum of 30 minutes between coats.

NOTE

Adhesive (C-322) does not become tack free in 30 minutes air dry time.

(3) Air dry for a minimum of 30 minutes, then cure 140 ± 20°F (60 ± 11°C) for a minimum of 2 hours. Allow heat cured parts to cool to room temperature 100°F (37.8°C) maximum prior to overcoating. As an alternate cure, air dry for 16 to 24 hours at room temperature.

(4) Apply a mist coat (0.2 to 0.3 mil) (5 to 8 um) of epoxy polyamide primer (C-204) to the adhesive (C-322) coating and adjacent areas.

5. Apply final finish to match existing finish specification.

32-14. ASSEMBLY.

1. Install skid shoe assemblies (16 and 19, figure 32-3) on skid tubes (20) as follows:

a. Apply sealant (C-308) as required.

b. Align holes in skid shoe assemblies (16 and 19) with holes in skid tube (20). Install screws (14 and 17) and washers (15 and 18).

2. Replace saddles (38 and 39) on skid tube (20) as follows:

a. Apply chemical film material (C-100) to all bare aluminum surfaces (BHT-ALL-SPM).

b. Apply a coat of epoxy polyamide primer (C-204) to saddle and matching area on skid tube (20). Allow primer to air dry.

c. Apply even coating of adhesive (C-308) to surface of new saddle that will mate with skid tube.

d. Insert saddle (38) into retainer (36) and position so bulge on retainer will clear openings for saddle screws. Align rivet holes between retainer, saddle, and skid tube. Clamp in place with metal fasteners (figure 32-9).

e. Ensure all rivet holes are aligned. Secure parts together with MS90354-08( ) rivets of proper grip length (figure 32-9).

f. Remove excess sealant squeeze-out with a plastic scraper. Apply one coat of epoxy polyamide primer (C-204) over entire repair area. When dry, apply two or three coats of polyurethane topcoat (C-218) to match original finish (BHT-ALL-SPM).

3. Install crosstube end into skid gear saddle until top fore and aft holes are aligned.

NOTE

Ensure that proper length screws are installed in forward and aft saddles, when installing the one-piece or two-piece saddle (figure 32-9).

NOTE

If fit between crosstube and skid gear is excessively tight, partial removal of primer on crosstube may be required.

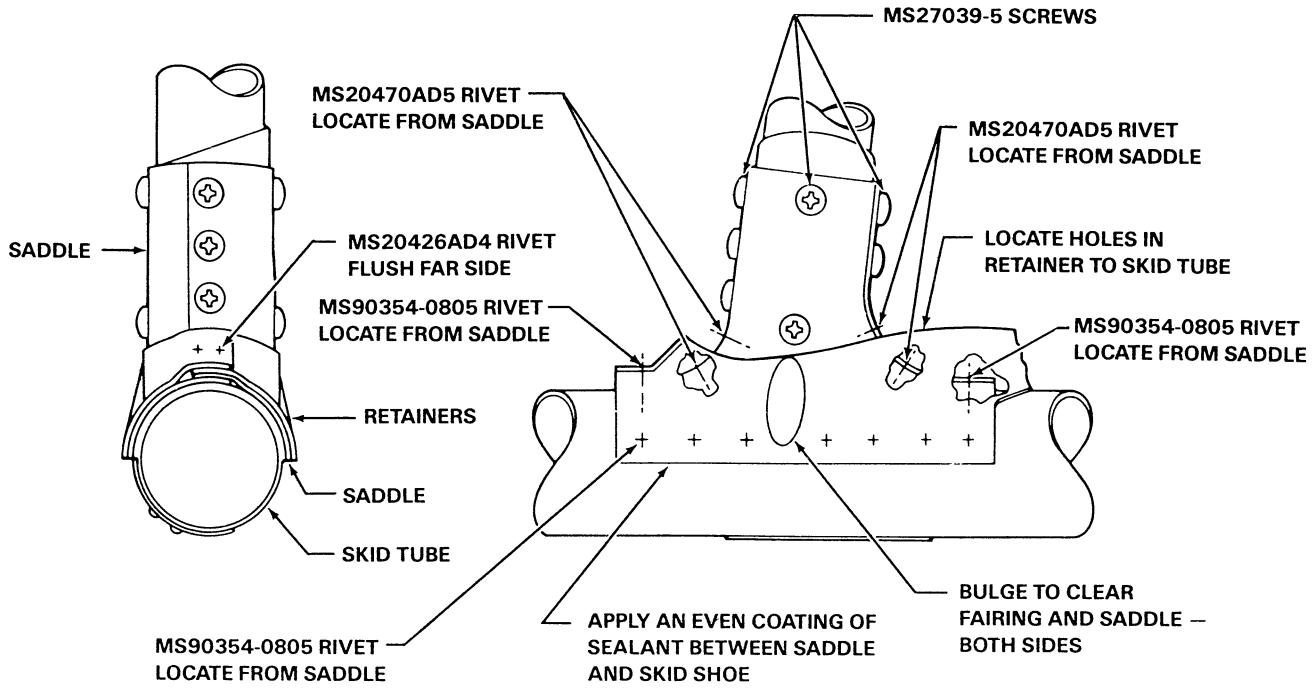
Align screw holes by tapping skid tube with mallet and/or pulling or spreading (pushing) top of the crosstubes. Screws should install without cutting threads in saddles.

4. Install skid tube to crosstubes using AN960-516L washers and MS27039-5 screws (13) on forward saddle (38), and AN960-516L washers and MS27039-5 screws (14) on aft saddle (39 or 40) with adhesive (C-308) applied to screw (1, 2, and 3) threads.

5. Install top fore-and-aft washers and screws, but do not tighten screws at this time so movement is allowed for alignment of remaining holes. Push and/or pull top of crosstubes to obtain best alignment of remaining holes.

NOTE

If fit between crosstubes and saddles is excessively tight, partial removal of zinc chromate primer (C-201) on crosstubes may be required. Make every effort to align screw holes by tapping skid tubes with mallet, or pulling and spreading (pushing) the tops of the crosstubes. Screws should be installed without cutting threads in the saddles.



Landing gear type	Screw Position SEE DETAIL A	Screw Length FORWARD Saddles		Screw Length AFT Saddles	
Standard Gear		2p Sad	1p Sad	2p Sad	1p Sad
	1	-13	-14	-15	-16
	2	-13	-14	-15	-16
	3	-13	-14	-15	-16
	4	-13	-14	-15	-16
	5	-14	-14	-16	-16
	6	-14	-14	-16	-16
	7	-14	-14	-16	-16
	8	-14	-14	-16	-16
	9	-14	-14	-16	-16

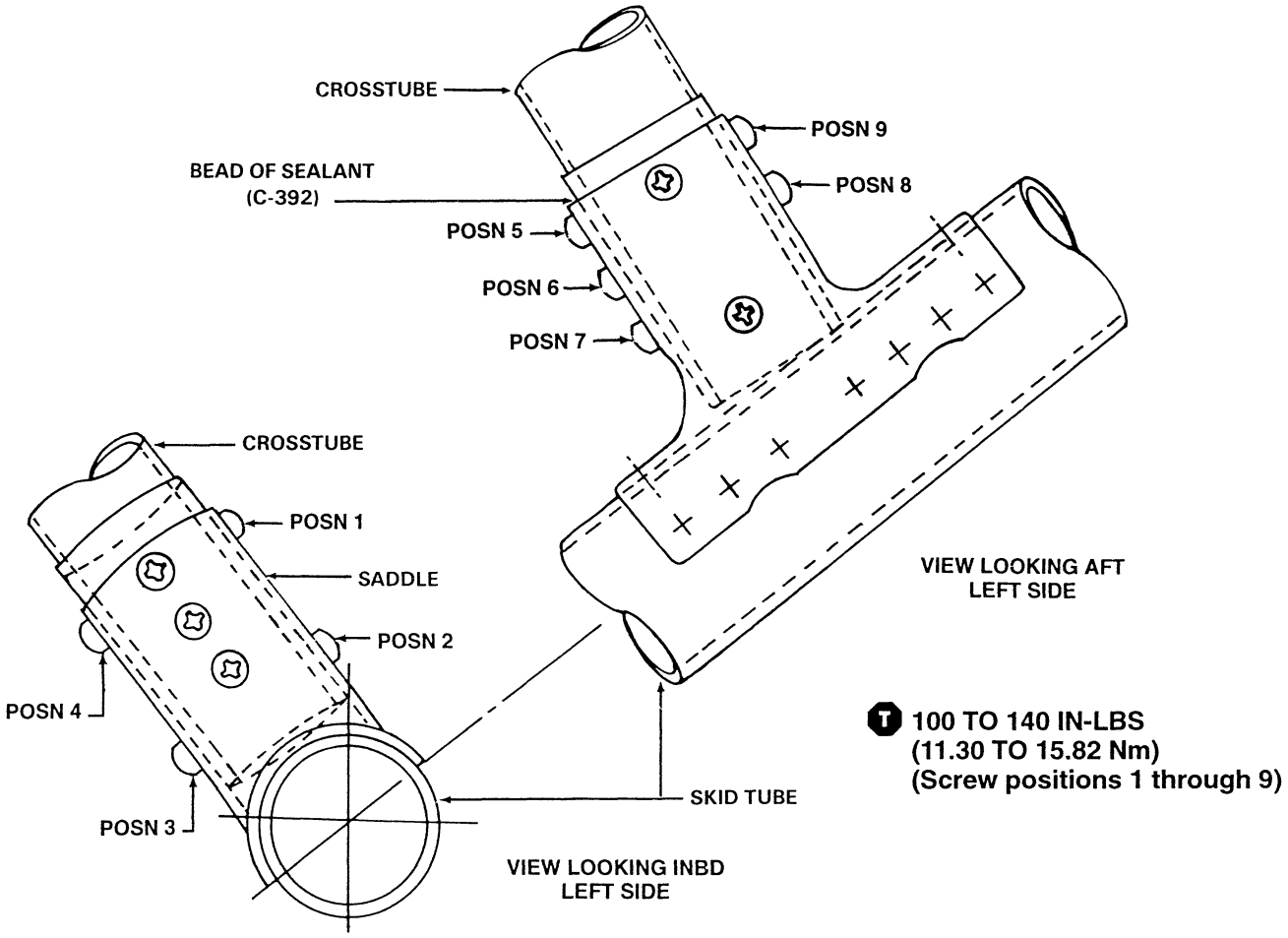
CROSSTUBE TO SADDLES
SCREW LENGTH MATRIX
MS27039-5-( )

NOTE

2p Sad = 2-piece saddle (206-050-120)
1p Sad = Forged saddle (206-050-244)

206A/BS-M-32-9-1

Figure 32-9. Standard (low) skid gear retainer and saddle replacement (Sheet 1 of 2)



DETAIL A
TYPICAL FORWARD AND AFT ON STANDARD GEAR

NOTES

1. Refer to Matrix for proper screw lengths to use in each of the nine positions.
2. Use AN960-516L washer under each screwhead.
3. Apply sealant (C-392) to all faying surfaces.
4. To avoid damaging nutplate retainers inside crosstube, do not use impact pressure to engage screws.

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Figure 32-9. Standard (low) skid gear retainer and saddle replacement (Sheet 2)

6. In the event it is impossible to align all of the holes, position assemblies in the most advantageous position. Holes that do not align may be elongated (using a rat tail file) to allow for bolt installation. Maximum elongation permitted is 0.045 inch (1.14 mm). Only one elongated hole per row is permitted.

7. Position saddles onto crosstube (figure 32-9). Install and tighten screws (T) at positions 1 through 9.

8. Apply a fillet of sealant (C-392) around top edge of saddle and crosstube.

32-14. INSTALLATION.

CAUTION

OUTSIDE DIAMETER OF THE CROSSTUBE ASSEMBLIES (4 AND 5, FIGURE 32-3) IS SLIGHTLY LARGER AT THE FUSELAGE ATTACHMENT POINTS. 140-009C16S48 SPECIAL SPACING WASHERS (51) ARE REQUIRED BETWEEN THE RETAINING STRAP ASSEMBLIES (46 AND 49) AND FUSELAGE. INSTALL WASHERS WITH WET EPOXY POLYAMIDE PRIMER (C-204). LONGER ATTACHMENT BOLTS (48 AND 50) MAY BE NEEDED.

NOTE

206-030-104 (figure 32-10) fitting shall be installed with web portion offset outboard to provide adequate clearance for crosstube supports (refer to Information Letter 206-96-74).

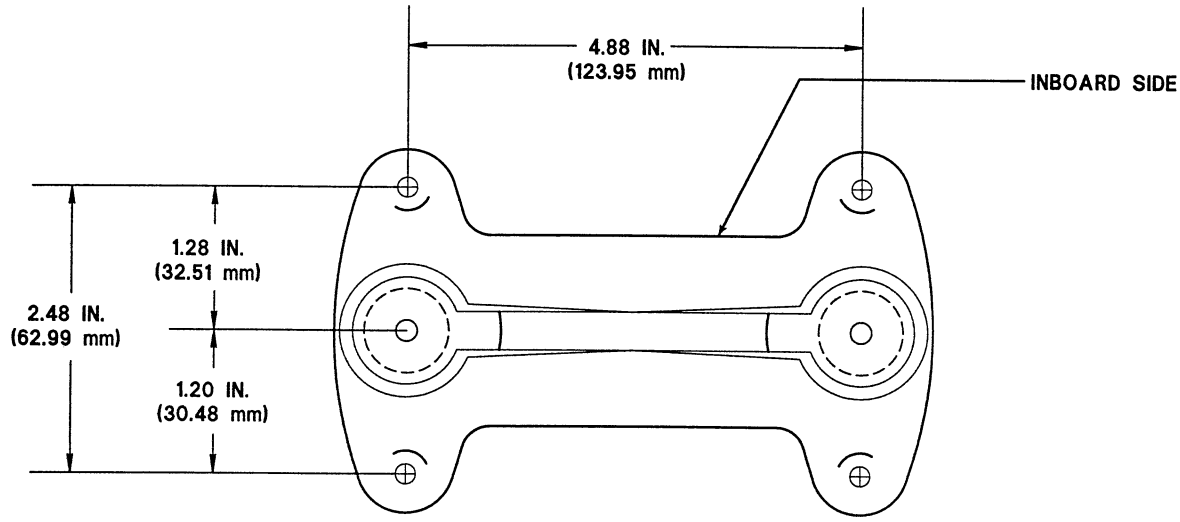
1. Position landing gear under fuselage attachment points and align strap assemblies (7, figure 32-3) with fuselage. Lower helicopter onto crosstube assemblies (4 and 5).

2. Install two forward strap assemblies (46), with washers (51), washers (47), and bolts (48). Tighten bolts.

3. Install two aft strap assemblies (49), with washers (51), washers (47), and bolts (50). Tighten bolts.

4. Inspect landing gear installation for security and remove hoisting (lifting) equipment.

5. Install crosstube fairing (if required) (paragraph 32-18).



NOTES

1. Fitting is not symmetrical.
2. Install such that 1.28 In. (32.51 mm) dimension is inboard.

206A/BS-M-32-10

Figure 32-10. 206-030-104 Fitting assembly

LOW SKID FAIRINGS

32-16. LOW SKID FAIRINGS.

The airfoil type, skid landing gear fairings enclose the forward and aft crosstubes and are constructed from white thermoplastic.

32-17. REMOVAL.

1. Remove screws (12, figure 32-11), washers (13), and forward cuff (14).

2. Remove screws (4), washers (3), and aft cuff (1).

3. Remove screws (4) and washers (3) from fairing (19) and screws (4), and washers (3) from skins (17 and 18).

4. Remove screws (9 and 15), washers (8 and 16), and lift forward fairing (10) from forward saddle retainer (7).

5. Remove screws (6 and 15), washers (5 and 16) and lift aft fairing (2) from aft saddle retainer (7).

32-18. INSPECTION AND REPAIR.

1. Inspect fairings (2, 10, and 19, figure 32-11), skins (17 and 18), and cuffs (1 and 14) for cracks and tears.

2. Inspect all nutplates and screws for thread damage and security.

3. Inspect forward and aft seals (11 and 20) for deterioration and cracks. Replace damaged parts as required.

4. Preferred method of repair for a cracked fairing assembly is as follows:

a. Stop drill crack using No. 30 (0.128 inch (3.25 mm)) diameter drill.

b. Fabricate patch of similar material. Form patch to cover damaged area with an overlap of 0.75 inch (19 mm).

c. Prepare faying surfaces of damaged area and patch for bonding. Remove surface glaze from bonding area using 240 to 400 grit abrasive paper or cloth.

NOTE

Do not allow naphtha to evaporate on bonding surface.

d. Remove sanding residue using cheesecloth dampened with aliphatic naphtha (C-305). Wipe dry with clean cloth before naphtha evaporates.

NOTE

PS-18 (3-part) or PS-30 (2-part) adhesive may be procured from Cadillac Plastics.

e. Thoroughly mix PS-18 or PS-30 adhesive. Apply even coat on bonding surfaces of fairing and repair patch.

f. Apply patch over damaged area of fairing while adhesive is in tacky state. Take care to ensure proper alignment and avoid trapping air within the bond line.

g. Apply firm contact pressure on bond line. Allow adhesive to cure at room temperature for 24 hours.

5. Alternate method of repair for cracked fairing is as follows:

a. Stop drill crack using No. 30 (0.128 inch (3.25 mm)) diameter drill.

b. Fabricate patch using MIL-C-9084 glass cloth (C-404). Form patch to cover damaged area with a minimum overlap of 1.0 inch (25.40 mm).

c. Prepare faying surfaces of damaged area and patch for bonding. Remove surface glaze from bonding area using 240 to 400 grit abrasive paper or cloth.

NOTE

Do not allow naphtha to evaporate on bonding surface.

d. Remove sanding residue using cheesecloth dampened with aliphatic naphtha (C-305). Wipe dry with clean cloth before naphtha evaporates.

NOTE

PS-18 (3-part) or PS-30 (2-part) adhesive may be procured from Cadillac Plastics.

e. Thoroughly mix PS-18 or PS-30 adhesive. Apply even coat on bonding surfaces of fairing and repair patch.

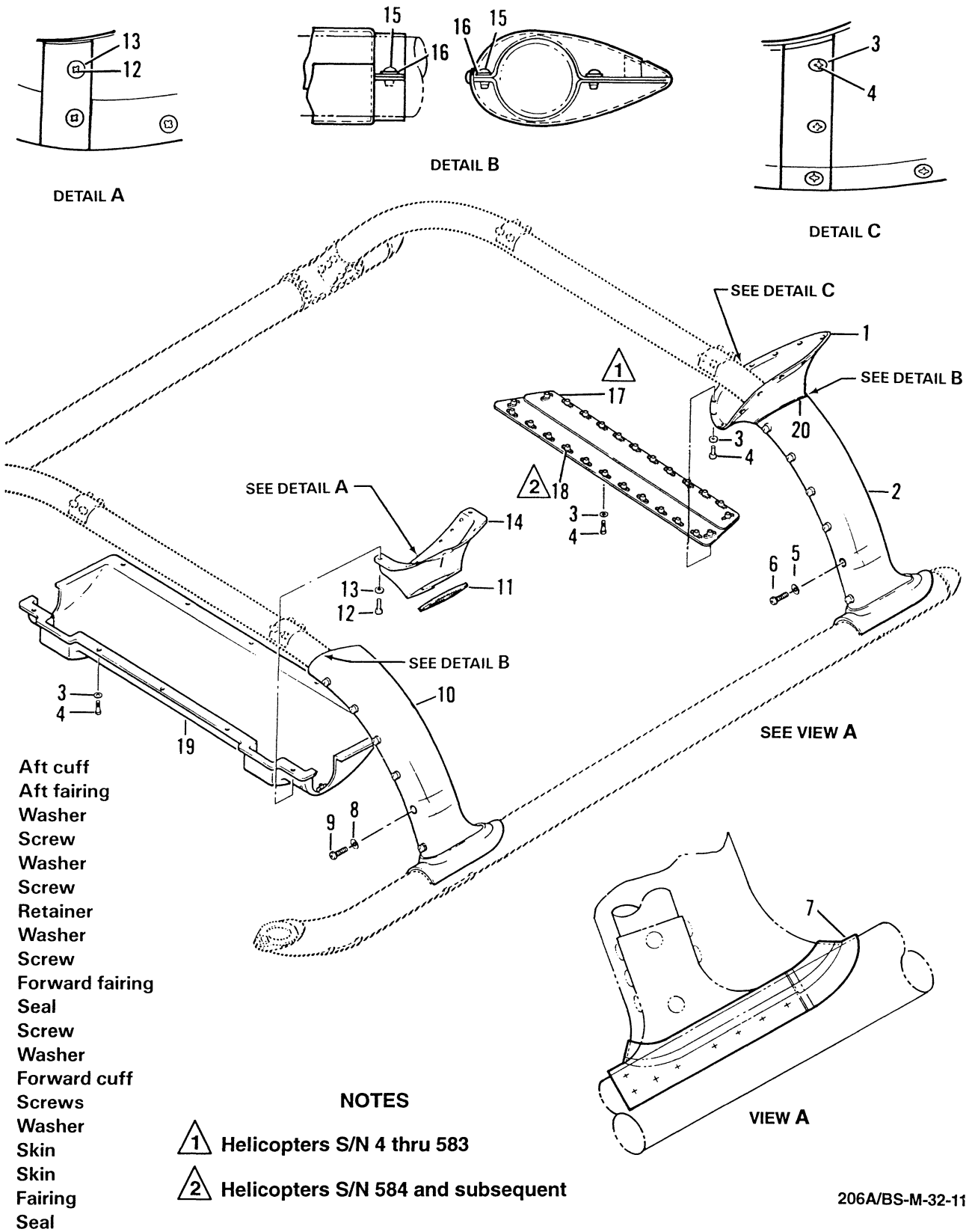


Figure 32-11. Low skid landing gear fairings

f. Apply patch over damaged area of fairing while adhesive is in tacky state. Take care to ensure proper alignment and avoid trapping air between fairing and glass cloth.

g. Apply another coat of PS-18 or PS-30 adhesive over glass cloth patch. Ensure total “wet-out” of patch. Allow patch to cure 24 hours at room temperature.

32-19. INSTALLATION.

1. Install forward fairing (19, figure 32-11), over crosstubes with screws (4) and washers (3).

2. Install aft skins (17 and 18) with screws (4) and washers (3).

3. Place forward fairing (10) into retainer (7) on forward saddle and install washers (8 and 16) and screws (9 and 15).

4. Place aft fairing (2) into retainer (7) on aft saddle and install washers (5 and 16) and screws (6 and 15).

5. Position forward cuff (14) on forward fairing (10) and install washers (13) and screws (12).

6. Position aft cuff (1) on aft fairing (2) and install washers (3) and screws (4).

HIGH SKID LANDING GEAR

32-20. HIGH SKID LANDING GEAR.

WARNING

NO COMPONENTS SHALL BE ATTACHED TO LANDING GEAR ASSEMBLY EXCEPT AS DESIGNATED BY MANUFACTURER. TO DO OTHERWISE MAY LEAD TO PREMATURE FAILURE OF CROSSTUBE.

The high skid landing gear provides approximately 13 inches (330 mm) additional ground clearance. The high skid landing gear assembly consists of two tubular aluminum alloy main skid tubes and two curved tubular aluminum alloy crosstubes (figure 32-12). The landing gear is attached to fuselage structure with four straps. Provisions are made on skid tubes for installing ground handling wheels and tow rings are provided for towing. Each skid tube is provided with replaceable skid shoes constructed from normalized 4130 steel alloy conforming to MIL-S-18729. Four fuselage mounted cabin steps are provided to facilitate entrance and exit.

32-21. CROSSTUBE DEFLECTION.

1. Inspect forward and aft crosstube assemblies (figure 32-12) for excessive deflection and/or permanent set as follows:

a. Place helicopter on jacks and raise a sufficient amount to remove all weight from the skid tubes (Chapter 7).

b. Level helicopter (Chapter 8).

c. Measure lateral distance between left and right strap assemblies on forward or aft crosstube assemblies and divide by 2 to determine helicopter centerline (BL 0.0).

2. Inspect high skid gear with float pans, measure crosstube permanent set (using a plumb bob) from centerline of helicopter to lowest point of skid pan attachment plate. For high skid gear without float pans, measure crosstube permanent set (using a plumb bob) from centerline of helicopter to centerline of skid tubes (figure 32-12). The dimensions of crosstubes for high skid gear with float pans, and high skid gear with tubular skid tubes, are to be within limits listed in table below:

TYPE	NORMAL	MAXIMUM
High skid gear with tubular skid tubes	37.45 in. (951.23 mm)	38.95 in. (989.33 mm)
High skid gear with float pans	40.55 in. (1029.97 mm)	42.05 in. (1068.07 mm)

32-22. INSPECTION AND REPAIR — SKID TUBES (INSTALLED).

1. Inspect skid tube for damage in excess of reparable damage limits as follows:

a. Scratches, scuffs, and nicks exceeding 0.015 inch (0.38 mm) deep may be repaired by patching (figure 32-13).

b. Smooth or sharp dents exceeding 1.0 inch (25.40 mm) diameter and/or 0.025 inch (0.64 mm) depth but not exceeding 2.0 inches (50.80 mm) in diameter may be repaired by patching.

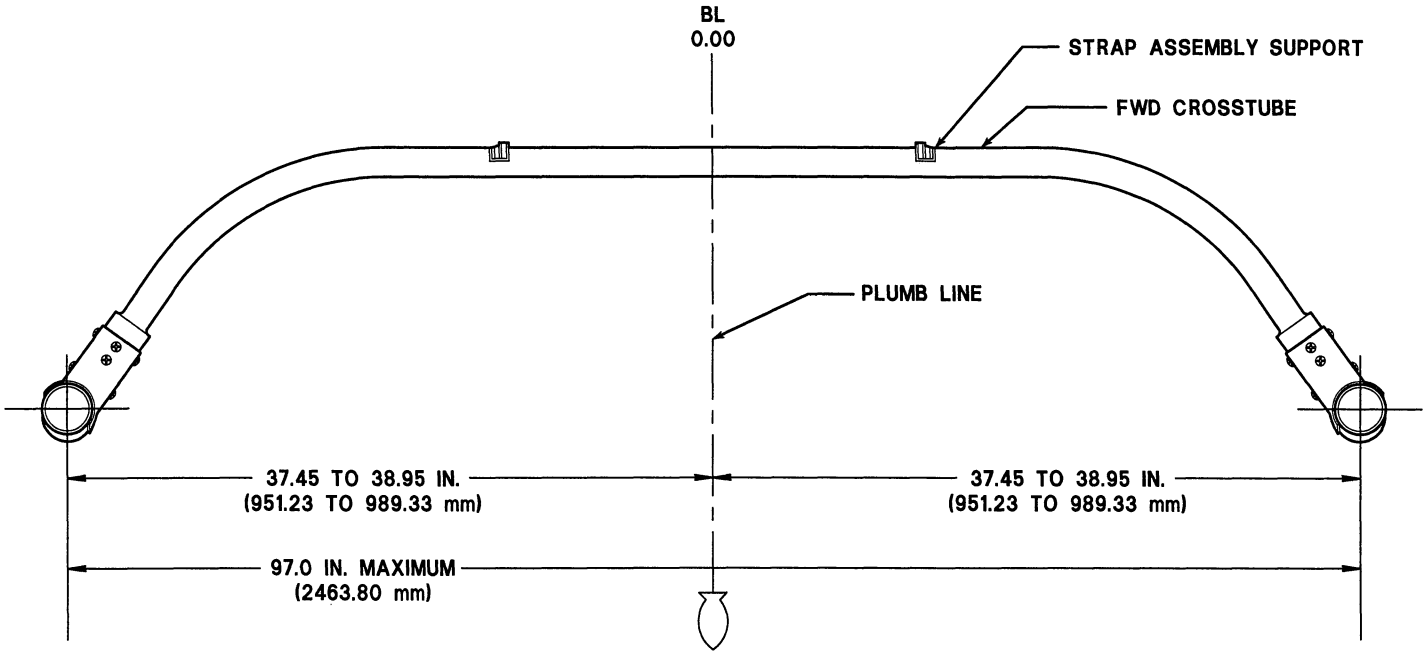
c. Holes in one surface of skid tube only up to a diameter of 2.0 inches (50.80 mm) may be repaired by patching (figure 32-13).

d. Scratches, dents, and holes in excess of the 2.0 inches (50.80 mm) limit may be repaired by splicing in a new section of tubing.

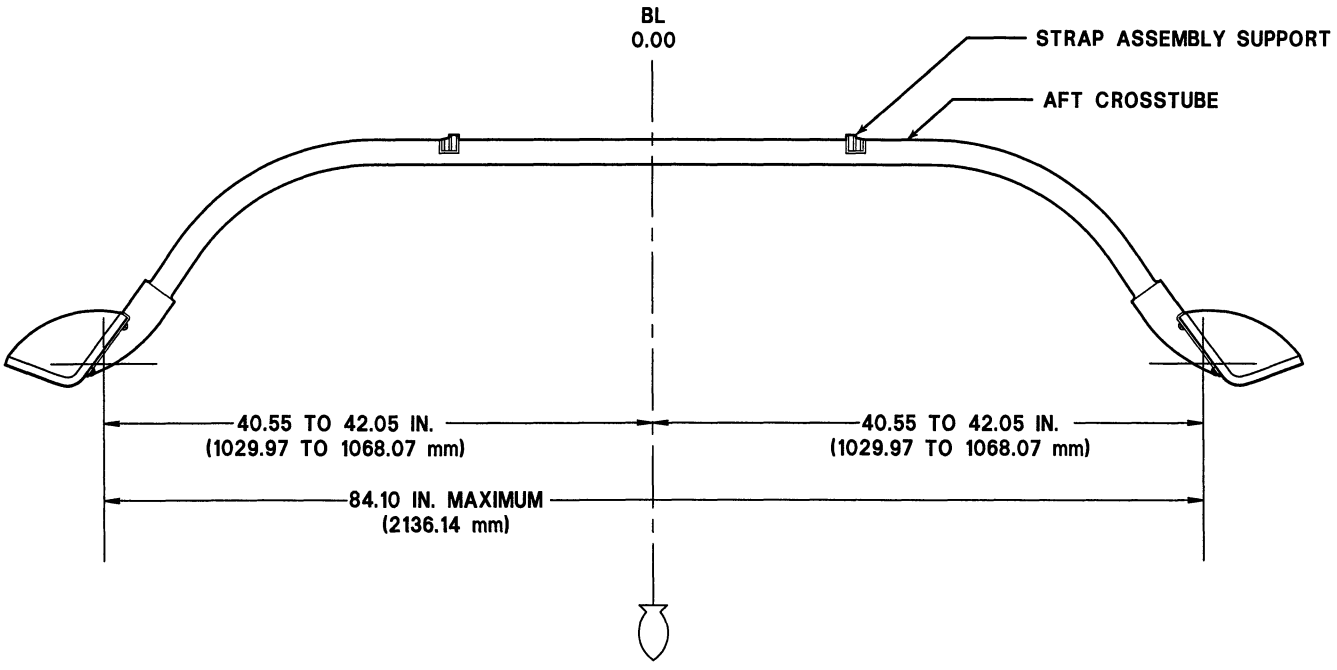
2. Inspect for damage to skid tube within 4.5 inches (114.30 mm) of crosstube saddles (figure 32-13). Damage in excess of negligible damage limits, as follows, necessitates replacement of skid tube.

a. Circumferential scratches and nicks that do not exceed a depth of 0.015 inch (0.38 mm) and an arc length of 90 degrees.

b. Scratches, scuffs, and nicks running longitudinally in skid tube may be of any length but shall not exceed a depth of 0.015 inch (0.38 mm).



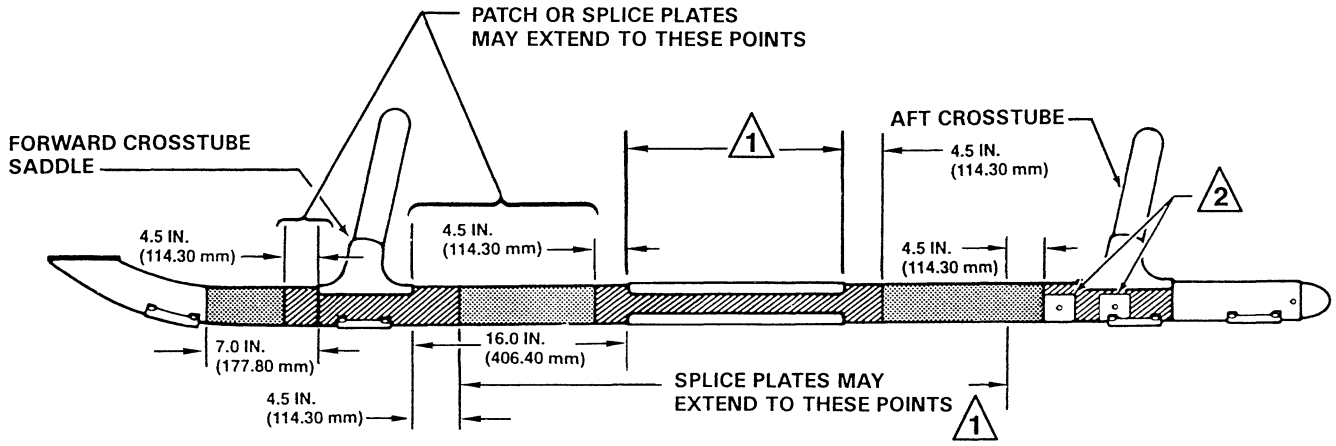
HIGH SKID CROSSTUBES



HIGH SKID CROSSTUBES WITH FLOAT PANS

206A/BS-M-32-12

Figure 32-12. Crosstube deflection



REPAIRS BY PATCHING OR INSERTION NOT PERMITTED

REPAIRS BY PATCHING OR INSERTION PERMITTED

REPAIR NOT REQUIRED IN THIS AREA — HOLES SHOULD BE PLUGGED TO PREVENT MOISTURE ENTRAPMENT.

NOTES

1. No patches allowed under doublers on 206-050-107 skid tube. Damage in this area exceeding negligible limits requires repair by splicing entire doubler length using the required length of skid tube and doublers which are undamaged.

2. Doublers installed on 206-050-107 skid tube only.

206A/BS-M-32-13

Figure 32-13. High skid gear skid tube damage limits

c. Smooth dents in skid tubes that do not exceed 0.025 inch (0.64 mm) in depth and 1.0 inch (25.40 mm) in diameter.

d. Corrosion damage not exceeding 0.015 inch (0.38 mm) deep is allowed over an area not exceeding 1/4 circumference by 3.0 inches (76.20 mm) in length after cleanup.

NOTE

When removing corrosion, check pockets and hidden areas for indication.

e. Scratches, dents, and nicks of any depth and length aft of aft saddle.

f. Scratches, dents, and nicks of any depth and length in curved portion only of skid tube forward of forward saddle.

3. Inspect skid shoes for wear or damage. Repair or replace as required (paragraph 32-27).

4. Lower helicopter and remove jacks.

32-23. INSPECTION AND REPAIR — CROSSTUBES (INSTALLED).

1. Inspect landing gear crosstubes for damage in excess of reparable limits (figure 32-14) as follows:

NOTE

Scratches, nicks, and dents of less than 0.005 inch (0.13 mm) depth are considered negligible.

2. Circumferential scratches and nicks that exceed 0.005 inch (0.13 mm) depth to limits shown in figure 32-14, not exceeding a 45 degree arc may be polished out.

3. Longitudinal scratches and nicks of any length that exceed 0.005 inch (0.13 mm) depth to limits shown in figure 32-14 may be polished out.

32-24. REMOVAL.

CAUTION

IF HOIST MUST BE USED TO RAISE HELICOPTER WHEN REMOVING LANDING GEAR OR COMPONENTS, SECURE HELICOPTER TO STABILIZE IT WHILE IT IS SUPPORTED BY HOIST. HOIST RATING 5000 POUNDS (2268 KILOGRAMS).

NOTE

The landing gear may be removed as a complete assembly or individual components may be removed separately.

1. Remove screws and washers attaching crosstube fairings (if installed).

2. Hoist or jack helicopter clear of ground (Chapter 7).

3. Remove bolts (37 and 41, figure 32-15), washers (38, 40, 42 and 44), and strap assemblies (39 and 43). Lower landing gear assembly to ground.

32-25. DISASSEMBLY.

1. Remove skid tube (7, figure 32-15) from crosstubes (31 and 32) as follows:

NOTE

The retainer is only used with the forward high skid gear saddle. The aft saddle is a one-piece assembly and does not require a retainer.

a. Remove screws (1 and 2) from forward saddle (17 and 18), with washers (5) and nuts (6) on aft saddle (19) attaching skid tube saddles (17, 18 and 19) to forward and aft crosstubes (31 and 32).

b. Remove skid tubes (7) as applicable.

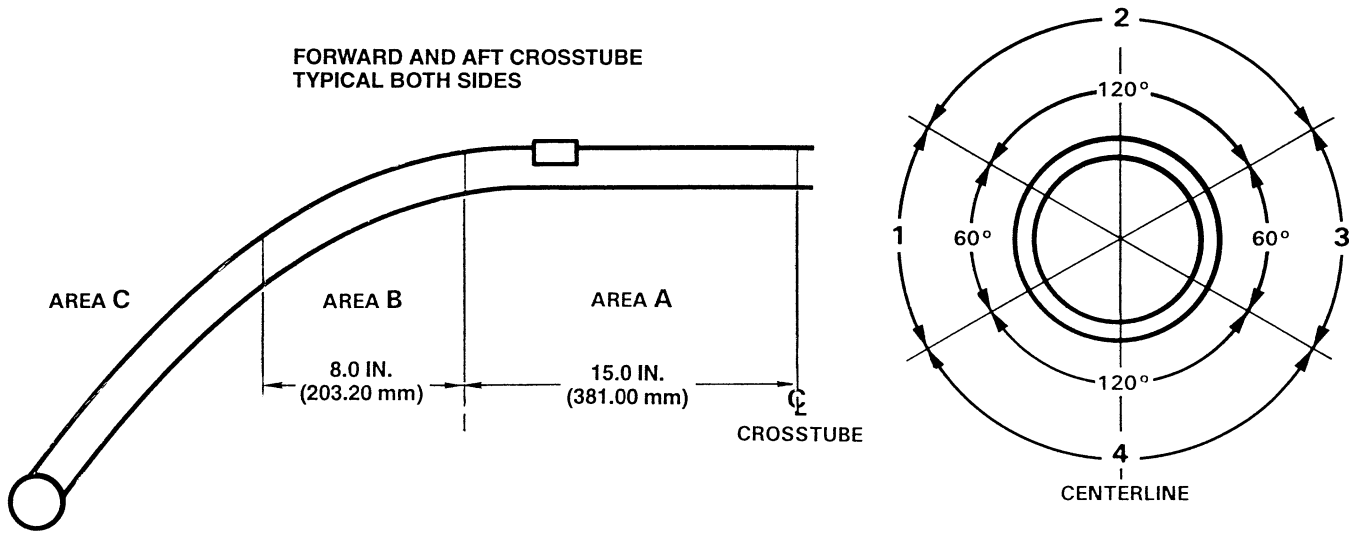
c. Remove skid tubes (7, figure 32-15) from forward and aft crosstube assemblies (31 and 32) by tapping with rawhide mallet.

2. Remove saddle (1, figure 32-16) with retainer as follows:

a. Remove screws (3), washers (4), and nuts (5) securing saddle (1) to aft crosstube (6) and skid tube (2).

b. Drill out rivets securing retainer to forward end and sides of saddle (1). Deburr holes.

c. Remove saddle (1) from skid tube (2). Clean sealant from saddle and skid tube using a plastic scraper and MEK (C-309).



AREA	FORWARD CROSSTUBE				AFT CROSSTUBE			
	REFERENCE THICKNESS		ALLOWABLE LIMITS		REFERENCE THICKNESS		ALLOWABLE LIMITS	
	IN.	mm	IN.	mm	IN.	mm	IN.	mm
A1 ⚠1	0.188	4.78	0.015	0.38	0.435	11.05	0.015	0.38
A2	0.188	4.78	0.005	0.13	0.435	11.05	0.005	0.13
A3 ⚠1	0.188	4.78	0.015	0.38	0.435	11.05	0.015	0.38
A4	0.188	4.78	0.005	0.13	0.435	11.05	0.005	0.13
B1 ⚠1	0.134	3.40	0.013	0.33	0.318	8.08	0.015	0.38
B2	0.134	3.40	0.005	0.13	0.318	8.08	0.005	0.13
B3 ⚠1	0.134	3.40	0.013	0.33	0.318	8.08	0.015	0.38
B4	0.134	3.40	0.005	0.13	0.318	8.08	0.005	0.13
C1 ⚠1	0.080	2.03	0.008	0.20	0.200	5.08	0.015	0.38
C2 ⚠1	0.080	2.03	0.008	0.20	0.200	5.08	0.015	0.38
C3 ⚠1	0.080	2.03	0.008	0.20	0.200	5.08	0.015	0.38
C4	0.080	2.03	0.005	0.13	0.200	5.08	0.005	0.13

206-050-288 (TYPICAL) HIGH SKID AND ALL EMERGENCY FLOATS

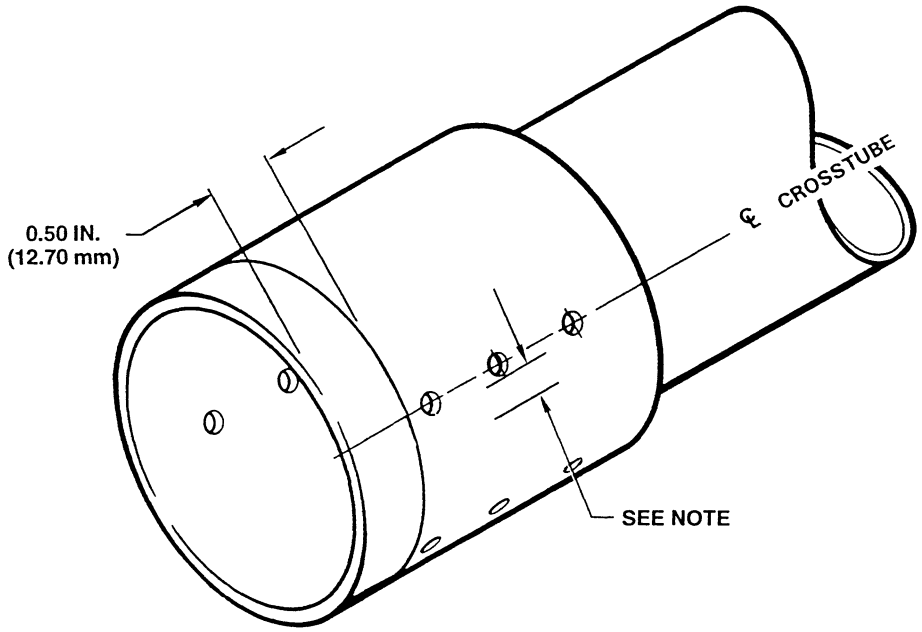
NOTES

⚠1 Based on 10 percent of wall thickness up to a maximum of 0.015 inch (0.38 mm).

2. Repairs limited to one repair per area.

206A/BS-M-32-14-1

Figure 32-14. High skid gear crosstube inspection limits (Sheet 1 of 2)



NOTE

0.050 inch (1.27 mm) maximum damage allowed on first 0.50 inch (12.70 mm) of crosstube except that no damage is allowed within 0.315 inch (8.00 mm) of any attachment hole.

206A/BS-M-32-14-2

Figure 32-14. High skid gear crosstube inspection limits (Sheet 2)

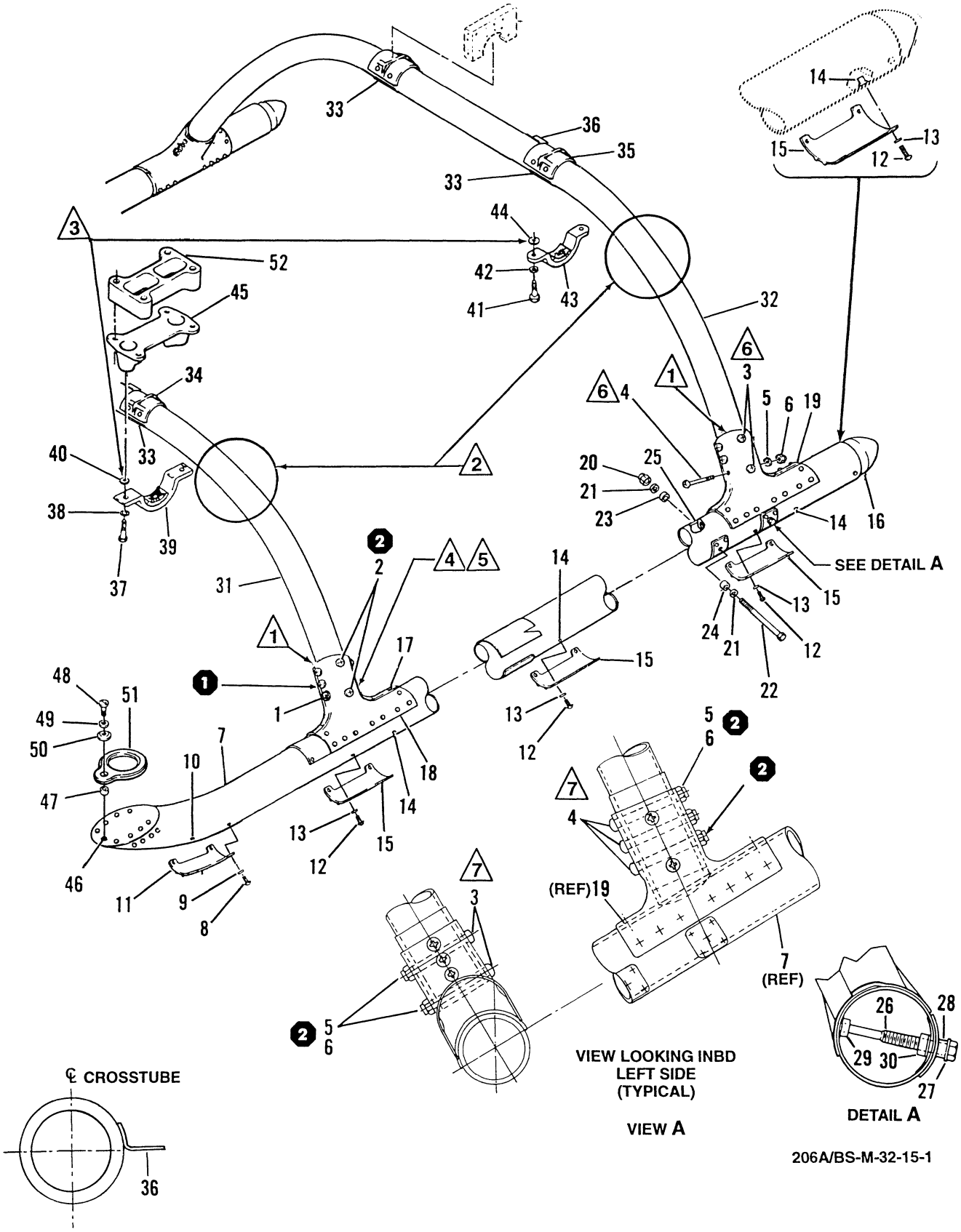


Figure 32-15. High skid landing gear (Sheet 1 of 2)

1. Screw
2. Screw
3. MS27039-5-48 screw
4. MS27039-5-48 screw
5. AN960JD516L washer
6. Nut
7. Skid tube
8. Screw
9. Washer
10. Nut assembly
11. Shoe assembly
12. Screw
13. Washer
14. Nut assembly
15. Shoe assembly
16. Plug assembly
17. Saddle (FWD)
18. Saddle (FWD)
19. Saddle (AFT)
20. Nut
21. Washer
22. Bolt
23. Spacer
24. Spacer
25. Doubler
26. Bolt
27. Washer
28. Spacer
29. Receptacle
30. Doubler assembly
31. Crosstube (FWD)
32. Crosstube (AFT)
33. Abrasion strip
34. Strap assembly (FWD)
35. Strap assembly (AFT)
36. Clip
37. Bolt
38. Washer
39. Strap assembly (FWD)
40. 140-009C16S48 washer
41. Bolt
42. Washer
43. Strap assembly
44. Washer
45. Fuselage fitting (FWD)
46. Nutplate
47. Spacer
48. Screw
49. Washer
50. Washer
51. Tow ring
52. Spacer

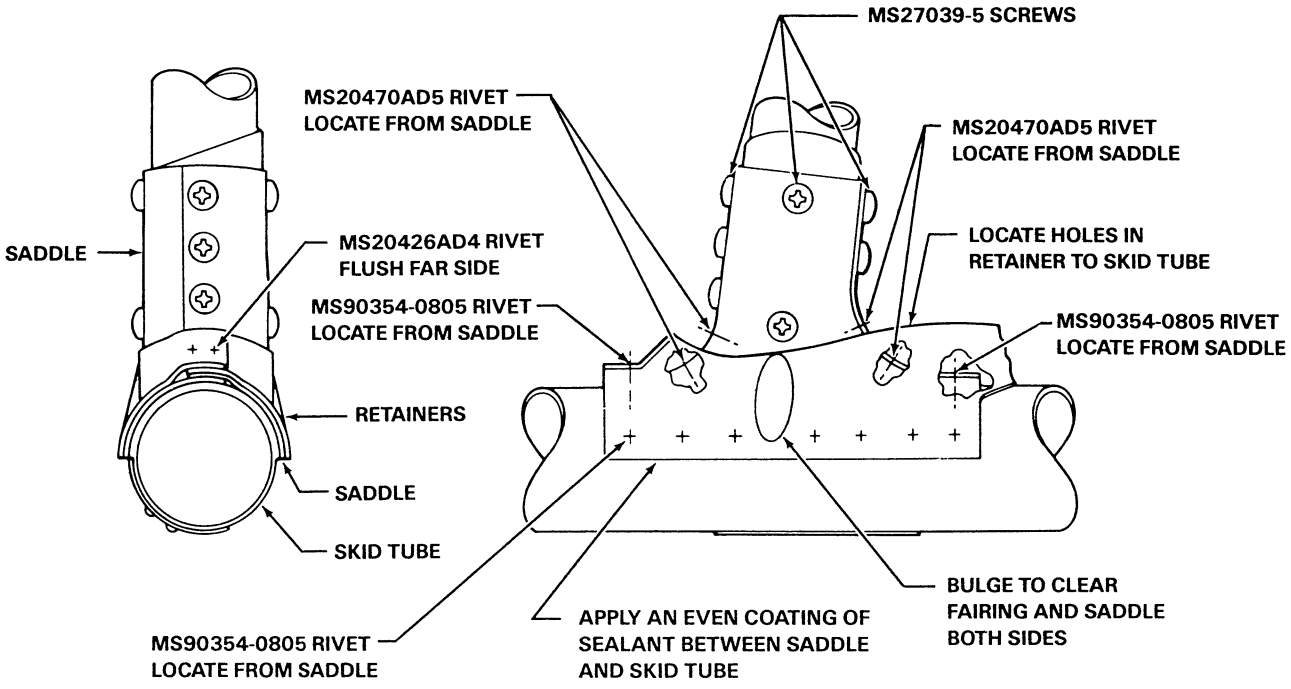
NOTES

1. Apply fillet of sealant (C-392) around top edge of saddle.
2. Wrap two turns (minimum) of pretrimmed Teflon tape (C-460) around crosstube to accommodate fairing installation if required.
3. Install washers (40 and 44) with wet epoxy polyamide primer (C-204).
4. Use washer under each screwhead.
5. To avoid damaging nutplates inside crosstube, do not use impact pressure to engage screws.
6. Install all screws with wet sealant (C-392) on grip and under screwheads.

1. 100 TO 140 IN-LBS (11.30 TO 15.82 Nm).
2. 50 TO 70 IN-LBS (5.65 TO 7.91 Nm).

206A /BS-M-32-15-2

Figure 32-15. High skid landing gear (Sheet 2)



Landing gear type	Screw Position SEE DETAIL A	Screw Length FORWARD Saddles		Screw Length AFT Saddles
		2p Sad	1p Sad	1p Sad
HIGH Gear Kit 206-706-031	1	-14	-15	SEE DETAIL B -48 ALL POSITIONS
	2	-14	-15	
	3	-14	-15	
	4	-14	-15	
	5	-15	-15	
	6	-15	-15	
	7	-15	-15	
	8	-15	-15	
	9	-15	-15	

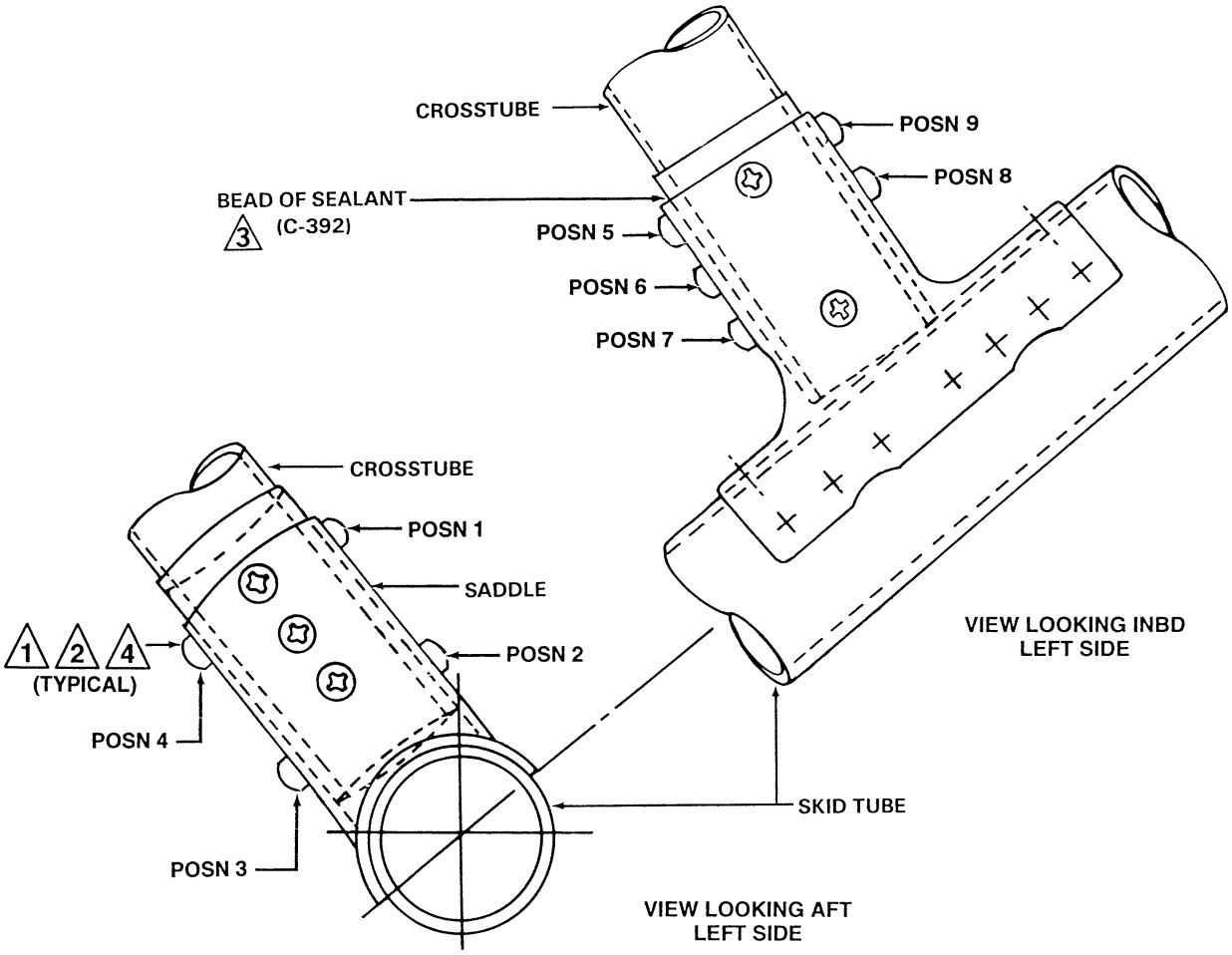
CROSSTUBE TO SADDLES
SCREW LENGTH MATRIX
MS27039-5-( )

NOTE

2p Sad = 2-piece saddle, (206-050-120)
1p Sad = Forged saddle, (206-050-299) AFT
Forged saddle, (206-050-244) FWD

206A/BS-M-32-16-1

Figure 32-16. High skid gear retainer and saddle replacement (Sheet 1 of 3)



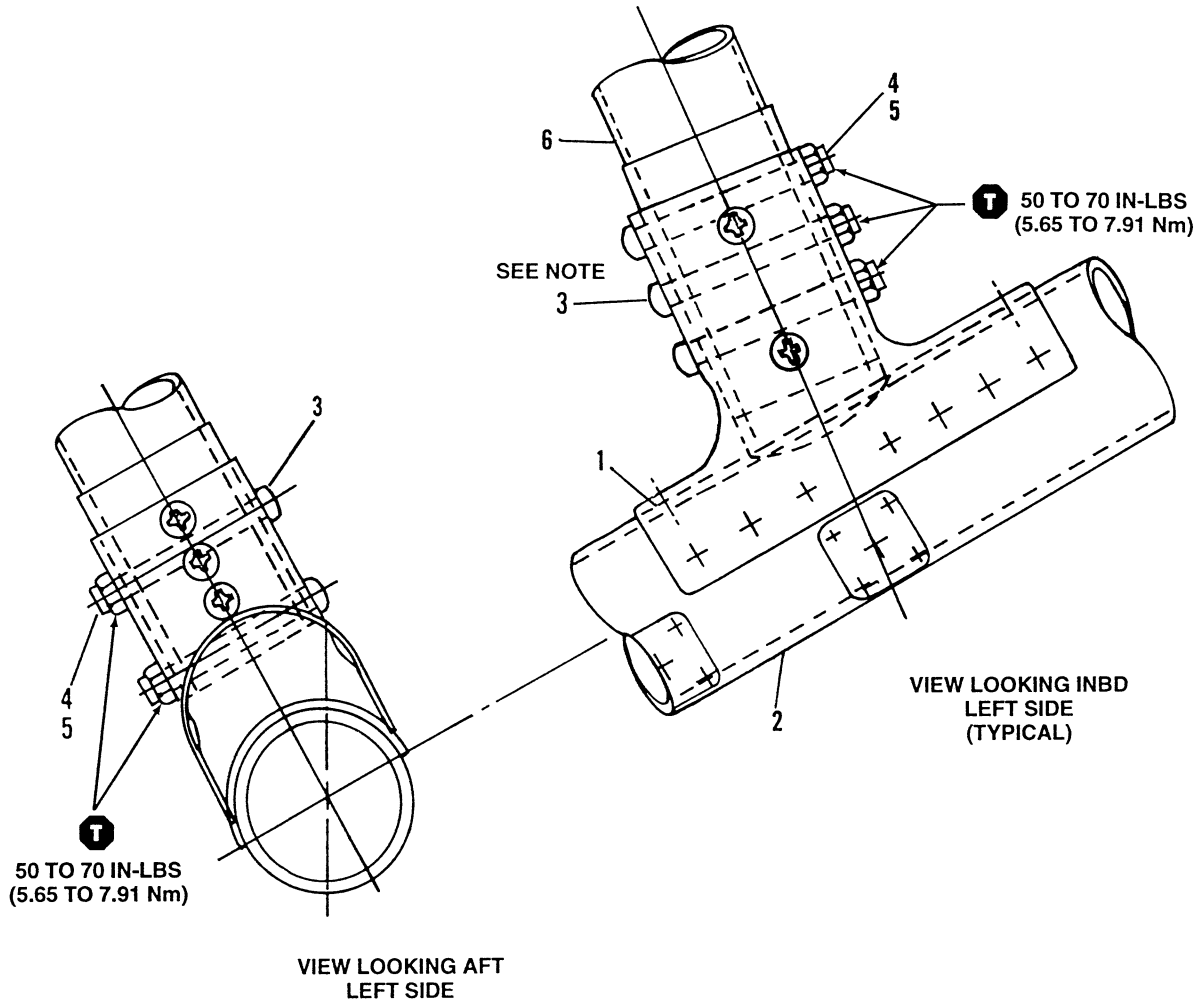
DETAIL A
FWD SADDLE ON HIGH GEAR

NOTES

1. Refer to Matrix for proper screw lengths to use in each of the nine positions.
2. Use a washer under each screwhead.
3. Apply sealant (C-392) to all mating surfaces.
4. To avoid damaging nutplate retainers inside crosstube, do not use impact pressure to engage screws.

206A/BS-M-32-16-2

Figure 32-16. High skid gear retainer and saddle replacement (Sheet 2)



DETAIL B
AFT SADDLE ON HIGH GEAR ONLY

1. 206-050-299-101 saddle
2. 206-050-246 skid tube
3. MS27039-5-48 screw
4. AN960JD516L washer
5. MS21042L5 nut
6. 206-050-288-103 AFT crosstube assembly

NOTE

Install all fasteners with wet sealant (C-392) on grip and under screwheads and nuts.

206A/BS-M-32-16-3

Figure 32-16. High skid gear retainer and saddle replacement (Sheet 3)

3. Remove skid shoe assemblies (11 and 15) from skid tubes (7) as follows:

a. Remove screws (8 and 12) and washers (9 and 13) attaching skid shoe assemblies (11 and 15) to skid tube (7).

b. Remove skid shoe assemblies (11 and 15) from skid tube.

4. Remove 206-053-200-101 strap assemblies (34 and 35) from forward and aft crosstubes (31 and 32) as follows:

CAUTION

EXERCISE CARE NOT TO DAMAGE HOLES IN CROSSTUBES.

a. Drill out rivets securing strap assemblies (34 and 35) to forward and aft crosstubes (31 and 32).

b. Clean adhesive/sealant from forward and aft crosstubes (31 and 32) using a plastic scraper and MEK (C-309).

5. Remove 206-050-301-103 abrasion strips (33) from forward and aft crosstubes (31 and 32) as follows:

a. Remove abrasion strips (33) as required.

b. Clean adhesive from forward and aft crosstubes (31 and 32) using a plastic scraper, abrasive pad and MEK (C-309).

6. Remove 206-050-303-101 electrical bonding clips (36) from forward and aft crosstubes (31 and 32) as follows:

CAUTION

EXERCISE CARE NOT TO DAMAGE HOLES IN CROSSTUBES.

a. Drill out rivets securing electrical bonding clips (36) to forward and aft crosstubes (31 and 32).

b. Clean sealant from forward and aft crosstubes (31 and 32) using a plastic scraper and MEK (C-309).

32-26. REPAIR.

1. Negligible damage to landing gear components may be polished out with abrasive pad or 400 grit abrasive cloth or paper. Touch up paint as prescribed in BHT-ALL-SPM.

2. Clean and treat corroded area on landing gear with chemical film material (C-100). Do not allow chemical film material (C-100) to enter inside crosstube where it cannot be rinsed away (BHT-ALL-SPM).

3. Refinish repaired areas to match existing paint finish (BHT-ALL-SPM).

4. Install 206-053-200-101 strap assemblies (34 and 35, figure 32-12) on forward and aft crosstubes (31 and 32) as follows:

a. Ensure existing holes in crosstubes (31 and 32) and strap assemblies (34 and 35) are properly deburred internally and externally. Prime holes with epoxy polyamide primer (C-204).

b. Prime faying surface of crosstubes (32 and 32) with epoxy polyamide primer (C-204).

c. Lightly abrade faying surface of buffer pad bonded on the inside of the strap assemblies (34 and 35) with abrasive pad. Wipe clean with MEK (C-309).

d. Coat faying surfaces of strap assemblies (34 and 35) and forward and aft crosstubes (31 and 32) with sealant (C-392).

e. Locate strap assemblies (34 and 35) on crosstubes (31 and 32) using existing holes for alignment.

f. Secure strap assemblies (34 and 35) with CR4623CW-6-( ) rivets (inboard) and rivets CR4622CW-6-( ) (outboard). Use grip length -5 for forward crosstube (31) and -9 for aft crosstube (32). Double check required rivet grip with gage. Install rivets with wet sealant (C-392). Encapsulate rivet heads with sealant (C-392). Remove excess sealant from edges of strap assemblies (34 and 35).

g. Seal edges of strap assemblies (34 and 35) with sealant (C-392).

5. Install 206-050-301-103 abrasion strips (33) on forward crosstube (31), and -105 on aft crosstube (32) as follows:

a. Faying surface of crosstubes (31 and 32) must be primed with epoxy polyamide primer (C-204) and let dry. Lightly abrade the primed faying surface with abrasive pad. Wipe clean with MEK (C-309) or equivalent.

b. Lightly abrade the finish on faying surface of abrasion strip (33) with abrasive pad. Wipe clean with MEK (C-309).

c. Apply adhesive (C-381) to faying surface of abrasion strip (33).

d. Locate -105 aft abrasion strip (33) longitudinal CL with longitudinal CL of support strap (35). Locate -103 forward abrasion strip (33) longitudinal CL with longitudinal CL of outboard rivet on support strap (34). The -103 forward abrasion strip (33) is 4.25 inches (107.95 mm) wide. The -105 aft abrasion strip (33) is 3.0 inches (76.20 mm) wide.

e. Remove excess adhesive squeeze-out from around abrasion strip (33). Apply 0.5 to 10.0 psi (3.45 to 68.95 kPa) pressure on bonded joint. Allow to dry.

f. Lightly abrade surface of abrasion strip (33). Prime and finish as required.

6. Install 206-050-303-101 electrical bonding clips (36) on forward crosstube (31), and -103 on aft crosstube (32) as follows:

a. Ensure existing rivet holes in crosstubes (31 and 32) are properly deburred internally and externally. Prime holes with epoxy polyamide primer (C-204).

b. Ensure faying surfaces of crosstubes (31 and 32) and clip (36) are free of paint, primer, and contaminants. Wipe surface clean with MEK (C-309).

c. Locate clips (36) on crosstubes (31 and 32) using existing rivet holes for alignment. Secure clips (36) with rivets M7885/2-4-4 on forward crosstube (31), and M7885/2-4-8 on aft crosstube (32). Install rivets with wet sealant (C-392). Encapsulate rivet heads with sealant (C-392).

d. Prime bare metal around clip (36) with epoxy polyamide primer (C-204). Allow to dry.

e. Seal edges of clip (36) with sealant (C-392). Allow to dry.

f. Refinish as required.

7. Patch skid tubes (7) as follows:

NOTE

Patch repairs are limited to top of skid tube in areas shown in figure 32-17.

a. Polish out scratches. Trim and smooth hole.

b. Fabricate a patch of required size from 0.090 inch (2.29 mm) aluminum alloy sheet (7075-T6, WW-T-700/7), or the same gage and material as damaged skid tube (7, figure 32-15).

c. Lay out rivet hole pattern and form patch to fit contour of skid tube.

d. Securely clamp patch in place on skid tube (7) and using a No. 27 drill bit, drill 0.205 to 0.209 inch (5.21 to 5.31 mm) diameter rivet hole.

e. Remove patch and deburr as necessary.

f. Remove paint and dirt from damaged area and both sides of patch.

g. Apply a coat of epoxy polyamide primer (C-204) to both sides of patch. Allow primer to dry. Coat side of patch that will mate to skid tube (7) with adhesive (C-308).

h. Position patch and rivet in place.

i. Apply a coat of epoxy polyamide primer (C-204) over repaired area. When dry, apply two or three coats of polyurethane topcoat (C-218) of color to match original finish (BHT-ALL-SPM).

8. If necessary, repair skid tube (7) using inserts as follows:

NOTE

Dents and holes on either top or bottom side of skid tube (7) that are greater than 2.0 inches (50.80 mm) across in any direction may be repaired by inserting a splice of new tubing (figure 32-17).

a. Cut out damaged portion of skid tube and deburr.

b. Obtain insert tube of same outside diameter and thickness as original 7075-T6 aluminum alloy tube, Specification WW-T-700/7 or equivalent. Use cutout portion of damaged tube, or measure before making cutout, to ensure insert tube is of exactly same length as cutout portion.

c. Obtain four splice plates of same material and/or one gage heavier than tube being repaired, two plates to fit inside diameter, and two plates to fit outside diameter of tube being repaired. Plates shall be long enough to accommodate rivet patterns (figure 32-17).

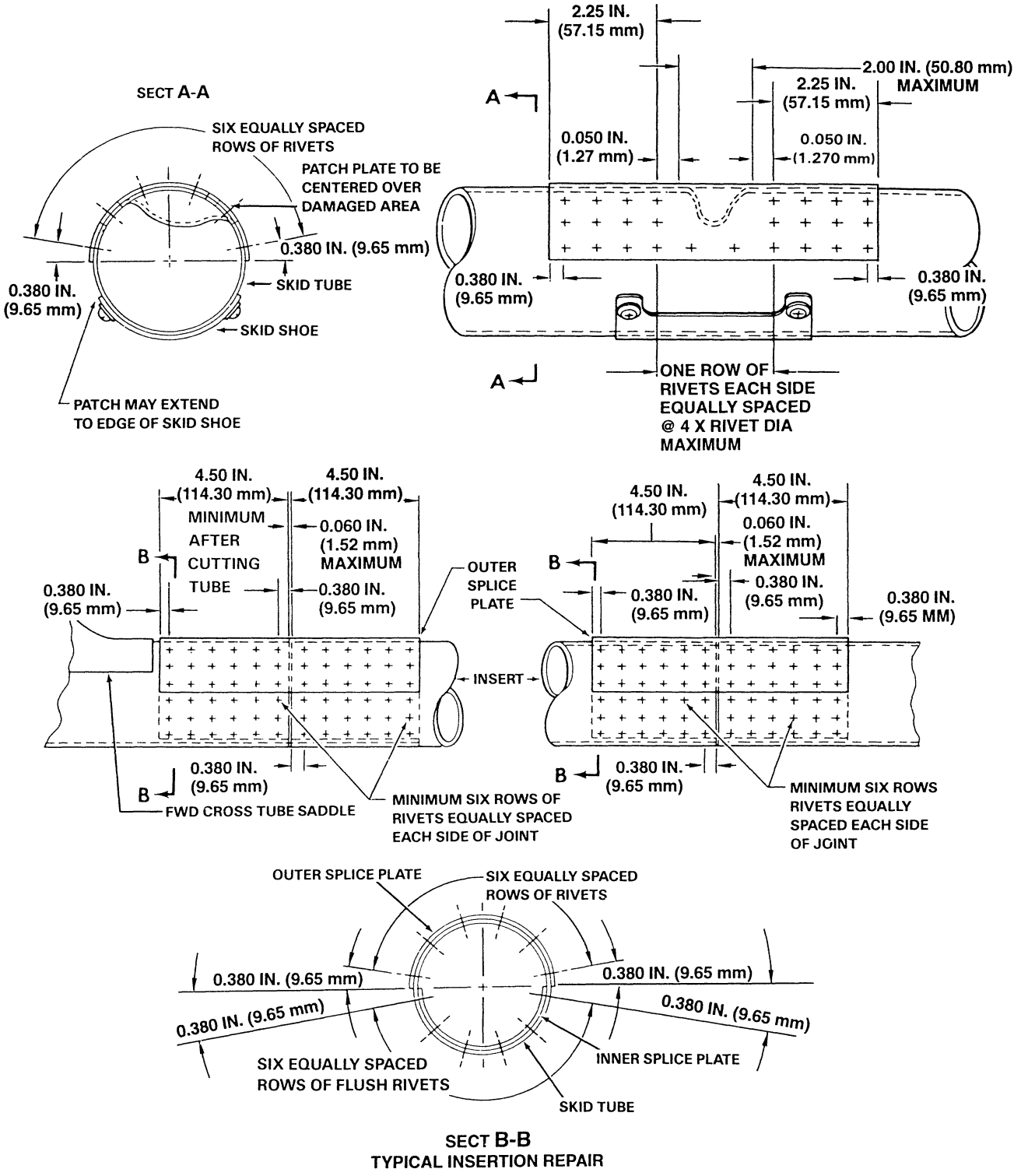


Figure 32-17. Landing gear skid tube repair

NOTE

When drilling rivet hole patterns in lower portion of skid tube (7, figure 32-15), note location of skid shoe assembly (11) attachment holes.

d. Lay out inner splice plate rivet pattern on forward and aft portions of tube being repaired.

e. Position inner splice plates in skid tube portions and temporarily secure in place (figure 32-17).

f. Drill rivet holes and countersink for 100 degree flush rivets. Deburr holes.

g. Reposition inner splice plates and secure using metal fasteners.

h. Position insert tube over inner splice plates and flush with both forward and aft portions of skid tube being repaired.

i. Continue rivet hole pattern previously drilled. Countersink for 100 degree flush rivets. Deburr holes.

j. Clean all paint and dirt from insert tube, both sides of splice plates, and areas of both skid tube, portions that will be contacted by splice plates.

k. Apply a coat of zinc chromate primer (C-201) to inside and outside of insert tube, both sides of inner splice plates, and inner surfaces of both skid tube portions that will be contacted by inner splice plates. Allow primer to dry.

l. Apply a coat of adhesive (C-308) to surfaces of inner splice plates that will contact insert tube and forward and aft portions of skid tube being repaired.

m. When positioning insert tube, ensure ends are flush fit with forward and aft portions of skid tube being repaired.

n. Position inner splice plates and insert tube and rivet in place.

o. Position outer splice plates over insert tube and forward and aft portions of skid tube being repaired.

p. Drill rivet hole pattern. Deburr holes.

q. Clean all paint and dirt from insert tube, both sides of splice plates, and areas of both skid tube portions that will be contacted by splice plates.

r. Apply a coat of epoxy polyamide primer (C-204) to cleaned areas and allow to dry.

s. Apply a coat of adhesive (C-308) to surfaces of outer splice plates that will contact insert tube and forward and aft portions of skid tube being repaired.

t. Position outer splice plates and rivet in place.

u. Apply a coat of epoxy polyamide primer (C-204) over entire repaired area. When dry apply two or three coats of polyurethane topcoat (C-218) to match color of original finish (BHT-ALL-SPM).

9. Polish out mechanical damage from retaining straps (39 and 43,figure 32-15) within tolerance shown in figure 32-6. Refer to CSSD-PSE-87-001 , Corrosion Control Guide, for removal and treatment of corrosion.

32-27. INSPECT AND REPAIR — SKID SHOES.

1. Inspect skid shoes for wear or damage.

NOTE

Landing gear skid tube shoes may be repaired by hot reforming, reshaping, or welding (figure 32-18).

2. Check rivnuts for damage. Replace loose or damaged rivnuts.

3. Dents in attaching skid shoe tabs may be hot reformed or reshaped provided borium weld beads on bottom of shoe are not damaged.

CAUTION

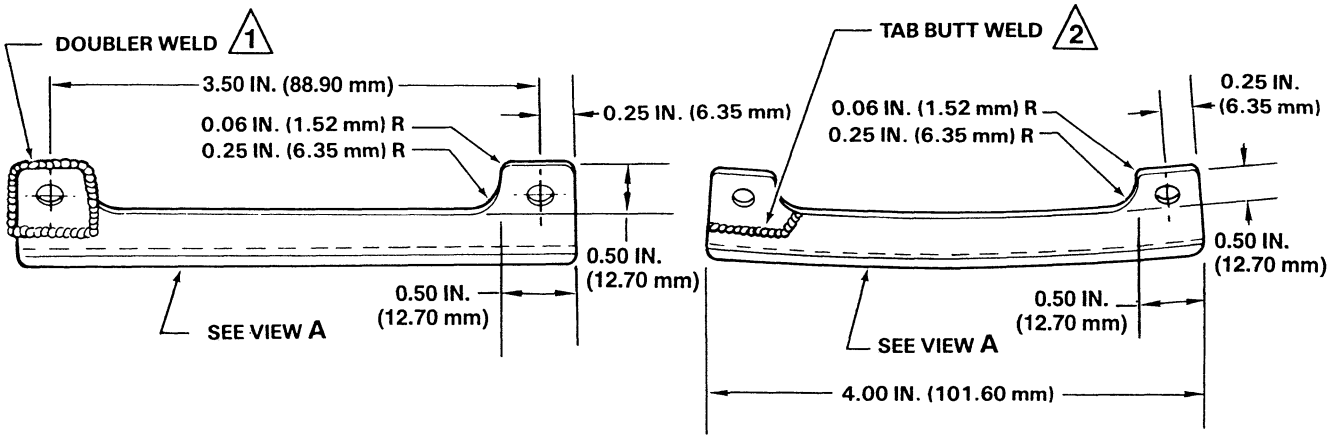
PRIOR TO ANY WELDING REPAIR, REMOVE SKID SHOE FROM TUBE TO AVOID DAMAGE TO ALUMINUM SKID TUBE FROM EXCESSIVE HEAT.

4. Remove cadmium plating from skid shoes prior to welding repair as follows:

NOTE

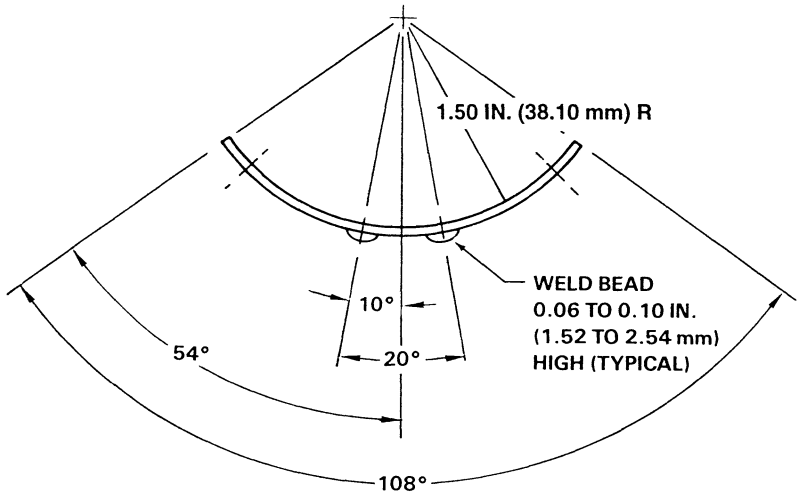
Cadmium plated stripped parts are very susceptible to corrosion and shall immediately be repaired and primed.

a. Remove cadmium plating from skid shoes (step 4.).



206-050-128 AFT SHOE

206-050-129 FORWARD SHOE



VIEW A

NOTES

1 Fabricate doubler of normalized 4130 steel, MIL-S-18729, 0.050 inch (1.27 mm) thickness and of same configuration as damaged tab. Grind weld smooth on side adjacent to skid tube and under retaining screwhead.

2 Fabricate tab of normalized 4130 steel, MIL-S-18729, and of same configuration as removed tab. Grind weld smooth on side adjacent to skid tube and under retaining screwhead.

206A/BS-M-32-18

Figure 32-18. High skid gear skid shoe repair

b. Weld two full length beads 0.06 to 0.10 inch (1.52 to 2.54 mm) high along skid shoe using acetylene and 0.125 inch (3.18 mm) hard facing weld tube (borium) available from Stoody Manufacturing Company, 12021 E. Slauson Ave., Whittier, California 90608, or DT 600 HM 0.125 inch (3.18 mm) hard facing weld tube available from Reed Tool Co., 6501 Navigation Blvd., Houston, Texas 77011.

c. Hot reform skid shoe, as required, to fit contour of skid tube.

d. Apply a coat of epoxy polyamide primer (C-204) to skid shoe. When dry, apply two or three coats of polyurethane topcoat (C-218) to match original finish (BHT-ALL-SPM).

5. Check bottoms of skid shoes for evidence of weld bead. Bead may be reformed if worn. Do not use skid shoes that have weld beads completely worn off (view A, figure 32-18).

NOTE

Transverse cracks across weld beads are permissible and should not be cause for repair or replacement of skid shoes.

a. Mix a solution of 16 fluid ounces (454.60 ml) of ammonium nitrate (C-350) per gallon (3.79 liters) of water.

b. Maintain solution at a temperature of 120°F (49°C). Immerse skid shoes into solution until all cadmium plating has been removed. Rinse shoes in clean water and air dry.

c. After repair and cleanup of weld deposits, apply brush cadmium plating solution (C-108), or two coats of epoxy polyamide primer (C-204). When dry, apply two or three coats of polyurethane topcoat (C-218) to match original finish (BHT-ALL-SPM).

6. Elongated holes in tabs on skid shoes may be repaired by fabricating a doubler or new tab as follows:

a. Fabricate a rectangular doubler of required size from 0.050 inch (1.27 mm) normalized 4130 steel, MIL-S-18729 (figure 32-18).

b. Remove cadmium plating from skid shoes (step 4.).

c. Secure doubler to skid shoe tab by welding (arc or gas method) in accordance with accepted welding practices around entire periphery of doubler. Grind weld smooth on side adjacent to skid tube and location for retaining screwhead.

7. Severely damaged skid shoe tabs may be replaced or repaired by fabricating a new tab.

a. Cut off damaged tab parallel to skid tube, or, if damaged tab can be straightened, reshape to original configuration.

b. Remove cadmium plating from skid shoes (step 4.).

c. If damaged tab has been cut from skid shoe, fabricate a similar tab from 0.05 inch (1.27 mm) normalized 4130 steel, MIL-S-18729. Butt weld tab along cut line of skid shoe. Grind weld smooth on side of shoe adjacent to skid tube and location for retaining screw head.

d. If damaged tab has been reshaped to original configuration, fabricate a doubler and weld (step 7).

32-28. REFINISHING.

1. Apply a brush solution of chemical film material (C-100) to all interior and exterior surfaces (BHT-ALL-SPM).

NOTE

The brush solution shall contain 3.0 fluid ounces (88.71 ml) by weight of chemical film material (C-100) per gallon (3.79 liters) of distilled or demineralized water and 0.5 fluid ounces (14.79 ml) of nitric acid (C-432). Mix solution thoroughly. Apply solution liberally to areas to be treated. Keep area wet with solution for 1 to 3 minutes, then flush thoroughly with clean water.

2. Apply one coat of epoxy polyamide primer (C-204) to all chemically treated surfaces as follows:

a. Clean surfaces to be primed with chlorothene (C-319) and wipe with a tack rag.

b. Prepare primer (BHT-ALL-SPM).

NOTE

Catalyzed epoxy polyamide primer (C-204) shall be discarded if not used within 4 hours after mixing.

c. Apply one coat of mixed epoxy polyamide primer to provide a dry film thickness (0.5 to 0.8 mil) (13 to 20 um).

The primer shall be overcoated in not less than 30 minutes and not more than 4 hours. When required, primed surfaces shall be wiped with a tack rag prior to overcoating to remove lint and dust.

3. Apply unreduced adhesive (C-322) mixed with epoxy polyamide primer (C-204) and thinned with MEK (C-309), to fill pin holes, grooves, seams or other imperfections. Smooth out excess with plastic squeegee or equivalent.

4. Apply wet spray coats, as applicable, of adhesive (C-322) to all primed and squeegeed surfaces.

NOTE

Small areas, not exceeding 10.0 square inches (6452 mm^2) may be brush coated with unthinned adhesive (C-322). Unthinned adhesive shall be air dried for at least 8 hours before overcoating. Large areas shall be coated in accordance with the following procedures:

a. Mix the two-part adhesive thoroughly to a uniform gray color. The mixing ratio is 100 parts base to 140 parts hardener by weight.

b. Add 13 to 15 percent by weight of epoxy primer (C-202) to above mixture.

c. Within 30 minutes after mixing, thin above mixture with MEK (C-309). The amount of MEK used for thinning shall be 35 to 40 percent by volume of mixed material.

CAUTION

THE POT LIFE OF MIXED ADHESIVE IS APPROXIMATELY 3 TO 4 HOURS.

d. A kit of adhesive (C-322) consists of 2/3 gallons (2.50 liters) of base and 1 gallon (3.79 liters) of hardener.

e. Thinned adhesive (C-322) shall be sprayed on and shall be used with epoxy polyamide primer (C-204) as follows:

NOTE

Adhesive coating shall be applied over primer (step 2.) in no less than 30 minutes but no more than 4 hours after primer.

(1) Areas not to be coated with adhesive may be masked as necessary. Use tape and barrier material (C-427).

(2) Apply three full wet coats of adhesive. Air dry adhesive for a minimum of 30 minutes between coats.

NOTE

Adhesive does not become tack free in 30 minutes air dry time.

(3) Air dry for a minimum of 30 minutes, then cure at 140 ± 20°F (60 ± 11°C) for a minimum of 2 hours. Allow heat-cured parts to cool to room temperature 100°F (37.8°C) maximum prior to overcoating. As an alternate cure, air dry for 16 to 24 hours at room temperature.

(4) Apply a mist coat (0.2 to 0.3 mil) (5 to 8 um) of epoxy primer (C-204) to the adhesive (C-322) coating and adjacent areas.

5. Apply final finish to match existing finish specification.

32-29. ASSEMBLY.

1. Install skid shoe assemblies (11 and 15, figure 32-15) to skid tube (7) as follows:

a. Apply adhesive (C-308) as required.

b. Align holes in skid shoe assemblies (11 and 15) with holes in crosstubes (31 and 32) and skid tube (7). Install screws (8 and 12) and washers (9 and 13).

2. Replace forward saddles (17 and 18) on skid tubes (7) as follows:

a. Apply chemical film material (C-100) to all bare aluminum surfaces (BHT-ALL-SPM).

b. Apply a coat of polyamide epoxy primer (C-204) to saddle (18) and matching area on skid tube (7). Allow primer to air dry.

c. Apply even coating of adhesive (C-308) to surface of new saddle (18) that will mate with skid tube (7).

d. Insert saddle (18) into retainer and position so bulge on retainer will clear openings for saddle screws (1 and 2). Align rivet holes between retainer, saddle, and skid tube figure 32-16 . Clamp in place with metal fasteners.

e. Ensure all rivet holes are aligned. Secure parts together with MS90354-0805 rivets of proper grip length (figure 32-16).

f. Remove excess adhesive (C-308), squeeze out with a plastic scraper. Apply one coat of epoxy polyamide primer (C-204) over entire repair area. When dry, apply two or three coats of polyurethane topcoat (C-218) to match original finish (BHT-ALL-SPM).

3. Install crosstube (31, figure 32-15) end into skid gear saddle until top fore-and-aft holes are aligned.

NOTE

If fit between crosstube and skid gear is excessively tight, partial removal of primer on crosstube may be required.

Align screw holes by tapping skid tube (7) with mallet and/or pulling or spreading (pushing) top of crosstubes 31 and 32. Screws should install without cutting threads in saddles.

4. Install skid tube (7) to crosstubes (31 and 32) using screws (3, figure 32-16) with sealant (C-392) applied to threads.

5. Install top fore and aft screws, but do not tighten; allow movement for alignment of remaining holes. Push and/or pull top of crosstubes (31 and 32, figure 32-15) to obtain best alignment of remaining holes.

6. In the event it is impossible to align all of the holes, position assemblies in the most advantageous position. Holes that do not align may be elongated (using a rattail file) for bolt installation. Maximum elongation permitted is 0.045 inch (1.14 mm). A maximum of one hole per row is permitted (4 per side).

7. Tighten all saddle to crosstube screws at this time. Tighten screws (1 and 2) (T) in nutplates in forward saddles (18, figure 32-15).

8. Apply a fillet of sealant (C-392) around top edge of saddle (18) and crosstube (31).

9. Repeat steps 2. through 8. on opposite side, if applicable.

10. Replace aft saddle (one piece) (1, figure 32-16) on skid tube (2) as follows:

CAUTION

THE FOLLOWING PROCEDURE IS CRITICAL TO ENSURE ALIGNMENT OF CROSSTUBE STRAP ASSEMBLIES (SUPPORTS) WITH FUSELAGE FITTINGS.

NOTE

The forward crosstube shall remain installed throughout this procedure.

NOTE

Remove and replace only one saddle at a time.

a. Apply chemical film material (C-100) to all bare aluminum surfaces (BHT-ALL-SPM).

b. Apply a coat of epoxy polyamide primer (C-204) to saddle (1) and matching area on skid tube (2). Allow primer to air dry.

c. Apply even coating of adhesive (C-308) to surface of new saddle (1) that will mate with skid tube (2).

d. Install saddle (1) into position on skid tube (2). Align rivet holes between saddle (1) and skid tube (2). Clamp in place with metal fasteners.

e. Ensure all rivet holes are aligned. Secure parts together with MS90354-0805 rivets of proper grip length (figure 32-16).

f. Remove excess adhesive squeeze out with a plastic scraper. Apply one coat of epoxy polyamide primer (C-204) over entire repair area. When dry, apply two or three coats of polyurethane topcoat (C-218) to match original finish (BHT-ALL-SPM).

11. Install aft crosstube assembly (6) end into skid gear saddle (1) until top fore and aft holes are aligned.

NOTE

If fit between aft crosstube assembly (6) and skid gear saddle (1) is excessively tight, partial removal of primer on crosstube may be required.

Align screw holes by tapping skid tube (2) with mallet and/or pulling or spreading (pushing) top of the crosstubes. Screws should install without cutting threads in saddles.

12. Install skid tube (2) to aft crosstube assembly (6) using screws (3), washers (4) and nuts (5), with adhesive (C-308) applied to heads of screws (3) and to nuts.

13. Install top screw (3), washer (4), and nut (5), but do not tighten so movement is allowed for alignment of remaining holes. Push and/or pull top of crosstubes to obtain best alignment of remaining holes.

14. Tighten all saddle to crosstube screws at this time. Tighten nuts (5) (T) in aft saddles (1).

15. Repeat steps 10. through 15. on opposite side, if applicable.

32-30. INSTALLATION.

CAUTION

OUTSIDE DIAMETER OF THE CROSSTUBE ASSEMBLIES (31 AND 32, FIGURE 32-15) IS SLIGHTLY LARGER AT THE FUSELAGE ATTACHMENT POINTS. 140-009C16S48 SPECIAL SPACING WASHERS (40 AND 44) ARE REQUIRED BETWEEN THE RETAINING STRAPS AND FUSELAGE.

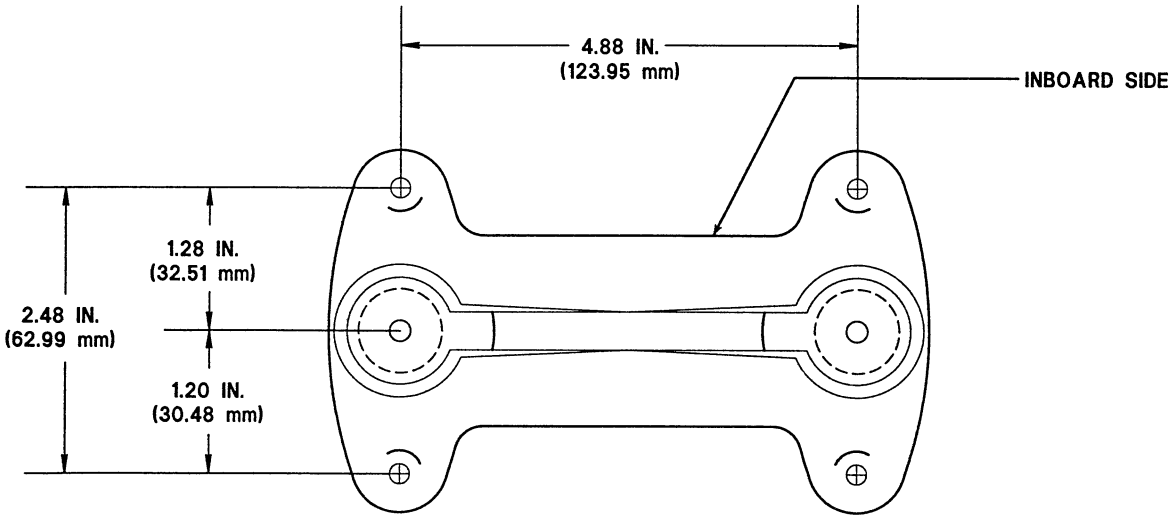
NOTE

206-030-104 fitting (figure 32-19) shall be installed with web portion offset outboard to provide adequate clearance for crosstube supports. Refer to Information Letter 206-96-74.

1. Position landing gear under fuselage attachment points, align landing gear strap assemblies (34 and 35, figure 32-15)) with fuselage fittings (45 and 46). Lower helicopter onto crosstube supports.

2. Install four strap assemblies (39 and 43). The forward strap assemblies (39) require special spacing washers (40), bolts (37), and washers (38), and the aft strap assemblies (43) require special spacing washers (44), bolts (41), and washers (42).Tighten bolts (37 and 41).

3. Inspect landing gear installation for security and remove hoisting (lifting) equipment.



NOTES

1. Fitting is not symmetrical.
2. Install such that 1.28 In. (32.51 mm) dimension is inboard.

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Figure 32-19. 206-030-104 Fitting assembly installation

FIXED STEP ASSEMBLY

32-31. FIXED STEP ASSEMBLY.

NOTE

Four externally mounted fixed steps are mounted on the fuselage structure to provide safe entrance and/or exit of helicopter when the high skid landing gear is installed.

32-32. REMOVAL.

1. Remove forward and aft fixed step assemblies (9, figure 32-20) by removing screws (1) and washers (2) on forward step, and screws (6 and 7) and washers (8) on aft step, while holding support (17).

2. Trim sealing compound from around edge of fitting (18).

3. Disassemble fixed step assembly as follows:

a. Remove nut (14), washers (15), and screw (16). Remove support (17) from fitting (18).

b. Remove nuts (10), washers (11), and screws (12) from step pad (13) and support (17).

32-33. INSPECTION.

1. Inspect inner skin step support doublers (4 and 5, figure 32-10) and inserts (3) beneath forward and aft seats, left and right sides, for structural integrity and security.

2. Remove paint from fixed step assembly (9) with MEK (C-309). (A non-metallic bristle brush will aid in removal of paint and cleanup.)

3. Inspect fixed step assembly (9) for cracks, using fluorescent penetrant or dye penetrant inspection method (BHT-ALL-SPM). If no cracks are found, paint fixed step assembly (9) with epoxy polyamide primer (C-204), and refinish as required.

32-34. INSTALLATION.

1. Assemble fixed step assembly (9, figure 32-20) as follows:

a. Install support (17) in fitting (18). Install washers (15), screw (16), and nut (14).

b. Position step pad (13) on support (17). Install washers (11), screws (12), and nuts (10).

2. Position forward and aft fixed step assembly (9) in place on helicopter and install washers (2) and screws (1) on forward step, and washers (8), screws (6 and 7), on aft step, while holding support (17). Tighten all screws as required.

3. Apply a bead of adhesive (C-308) around periphery of step fittings (18).

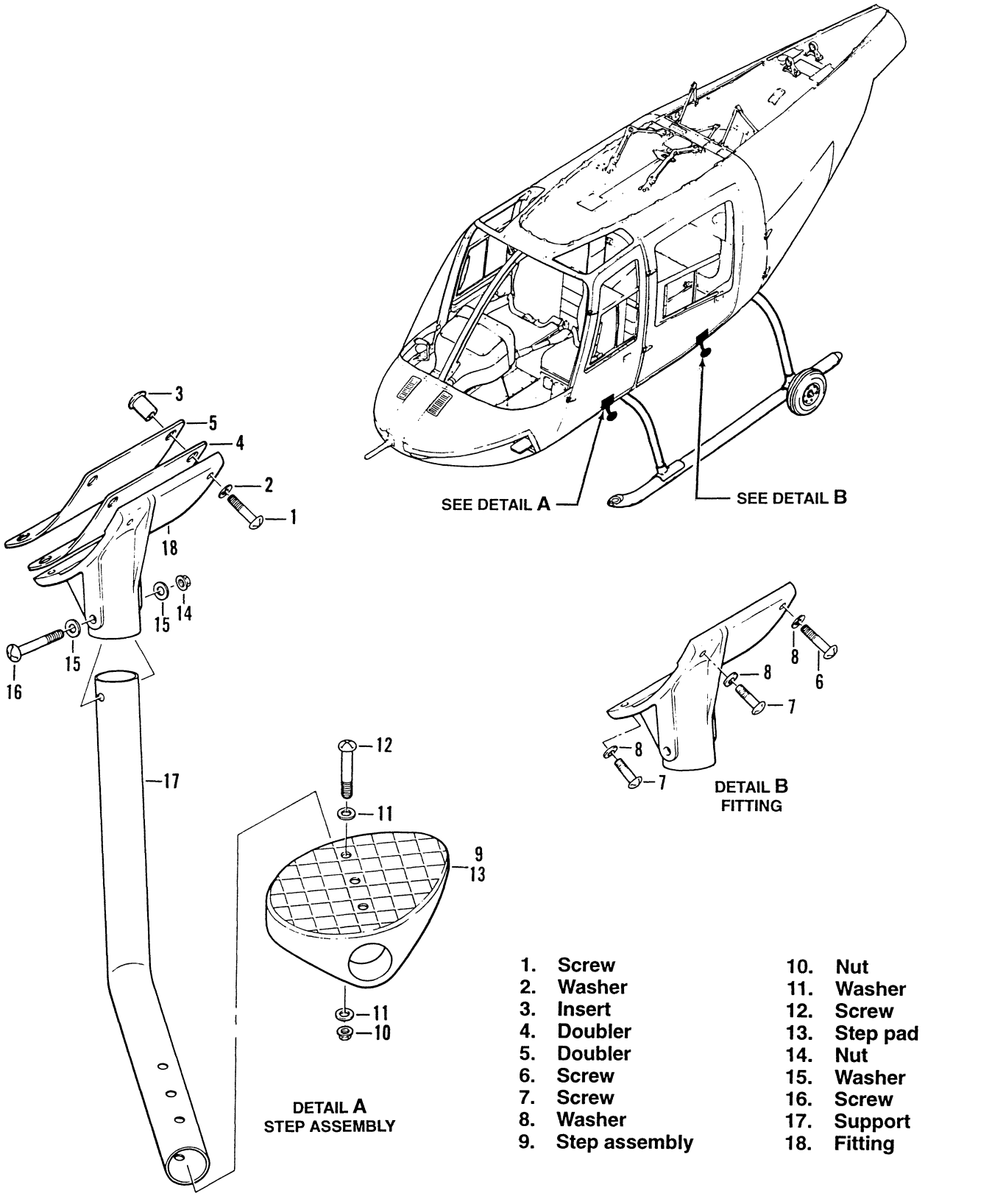


Figure 32-20. High skid gear forward and aft fixed step removal/installation

GROUND HANDLING WHEELS

32-35. GROUND HANDLING WHEELS.

Hand operated ground handling wheel assemblies (14, figure 32-21) are mounted on each skid tube (13) near helicopter center of gravity to facilitate helicopter handling or movement. Wheel assemblies (4) are retracted and extended manually and are removable. Two 6 ply, 3.50 x 6, nylon tires and tubes are used on the 2 wheel assemblies (4).

WARNING

MAINTAIN WIDE STANCE BALANCE, HOLDING LIFT TUBE (1) FIRMLY WHILE RAISING OR LOWERING GROUND HANDLING WHEELS.

32-36. REMOVAL.

1. Retract wheel assemblies (4, figure 32-21) and lock in up position with pin (8).

2. Remove quick-release pin (12) from skid tube (13).

3. Slide wheel assembly (4) and support assembly (10) forward.

NOTE

Pin (8) must be removed from wheel support assembly (10) before wheel assembly (4) can be retracted or extended. Install pin (8) in support assembly (10) to lock wheel assembly (4) in desired position (figure 32-19).

32-37. DISASSEMBLY.

1. Remove cotter pin (2, figure 32-21) and one outboard washer (3) from axle assembly (9). Remove wheel assembly (4). Secure washers (3) on axle assembly (9) for reuse.

2. Remove pin (5) and washers (6 and 7) from inboard end of axle assembly (9). Remove axle assembly (9) from support assembly (10). Secure four washers (6 and 7) to axle assembly (9) with pin (5), for reuse.

32-38. ASSEMBLY.

1. Install washers (6 and 7, figure 32-21) on inboard end of axle assembly (9). Install support assembly (10) on axle assembly (9). Install outboard washers (6 and 7) to axle assembly (9) and secure with pin (5).

2. Install one washer (3) inboard on axle assembly (9) and install wheel assembly (4).

3. Install one outboard washer (3) next to wheel assembly (4) and install cotter pin (2).

32-39. INSTALLATION.

1. Position support assembly (10, figure 32-21) over skid tube (13) with wheel assemblies (4) outboard. Align forward slot of support assembly (10) over forward mount bolt and slide support assembly aft engaging aft mount bolt.

2. Insert quick-release pin (12) in skid tube (13) forward of support assembly (10). Check security of quick-release pin (12).

3. Lower wheel assemblies (4) and lock in down position with pin (8) for towing helicopter.

32-40. SERVICING.

1. Lubricate axle assembly (9, figure 32-21) at grease fitting (11). Refer to Chapters 5 and 12.

2. Inflate tires to 75 to 80 psi (517 to 551 kPa).

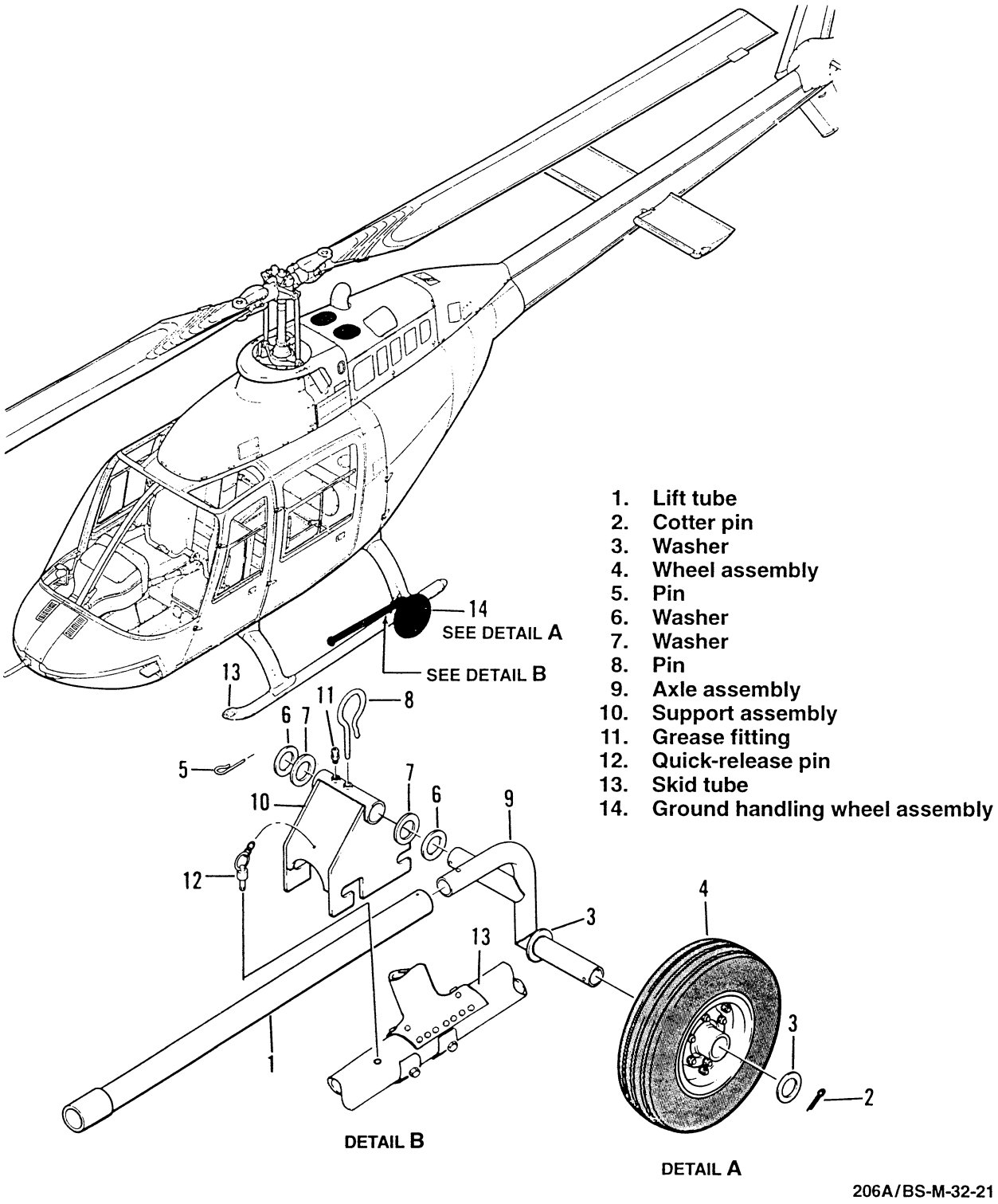


Figure 32-21. Ground handling wheel assembly

TAIL SKID

32-41. TAIL SKID.

A tubular steel tail skid and bumper are installed on the lower portion of the vertical fin and act as a protective device for the tail rotor and tailboom in the event of a tail-low attitude in landing.

32-42. REMOVAL.

NOTE

Should pin (5, figure 32-22) be worn to a degree where loss of pin is imminent, the pin (5) may be replaced with an MS27039-4 screw (9), washer (8) and self-locking nut (7). It is acceptable to install screw (9) in worn hole as there is no requirement to enlarge the mount hole to next larger size. Use screw (9), washer (8), and self-locking nut (7), as primary hardware on helicopters S/N 4325 and subsequent.

1. Remove attaching pin (5) with suitable drift.

2. Remove tail skid (4) from fiting (6) installed in vertical fin (1).

32-43. INSPECTION AND REPAIR.

1. Inspect tail skid (4, figure 32-22) for buckles, cracks, dents, and security in fitting (6), and in mount area of vertical fin (1).

2. If tail skid (4) becomes loose at its mounting point on vertical fin (1), the following procedure may be utilized to accomplish repair.

a. Remove tail skid (4) (paragraph 32-42).

b. Apply adhesive (C-308) or equivalent to tail skid (4) and inside bore of fitting (6) installed in vertical fin (1).

c. Reinstall tail skid (4) (paragraph 32-44).

3. Inspect bumper (2), and fitting (3) for security, cracks, or deterioration.

NOTE

It is not necessary to remove fitting (3) from vertical fin (1) when replacing bumper (2).

4. Replace damaged bumper (2) as follows:

a. Remove old bumper (2) from fitting (3). Remove old adhesive from fitting (3).

b. Mix adhesive (C-310) and apply a film of adhesive to flat side of new bumper (2).

c. Install bumper (2) and fitting (3) into fin assembly and secure with sealant (C-308) and cure per manufacturers instructions.

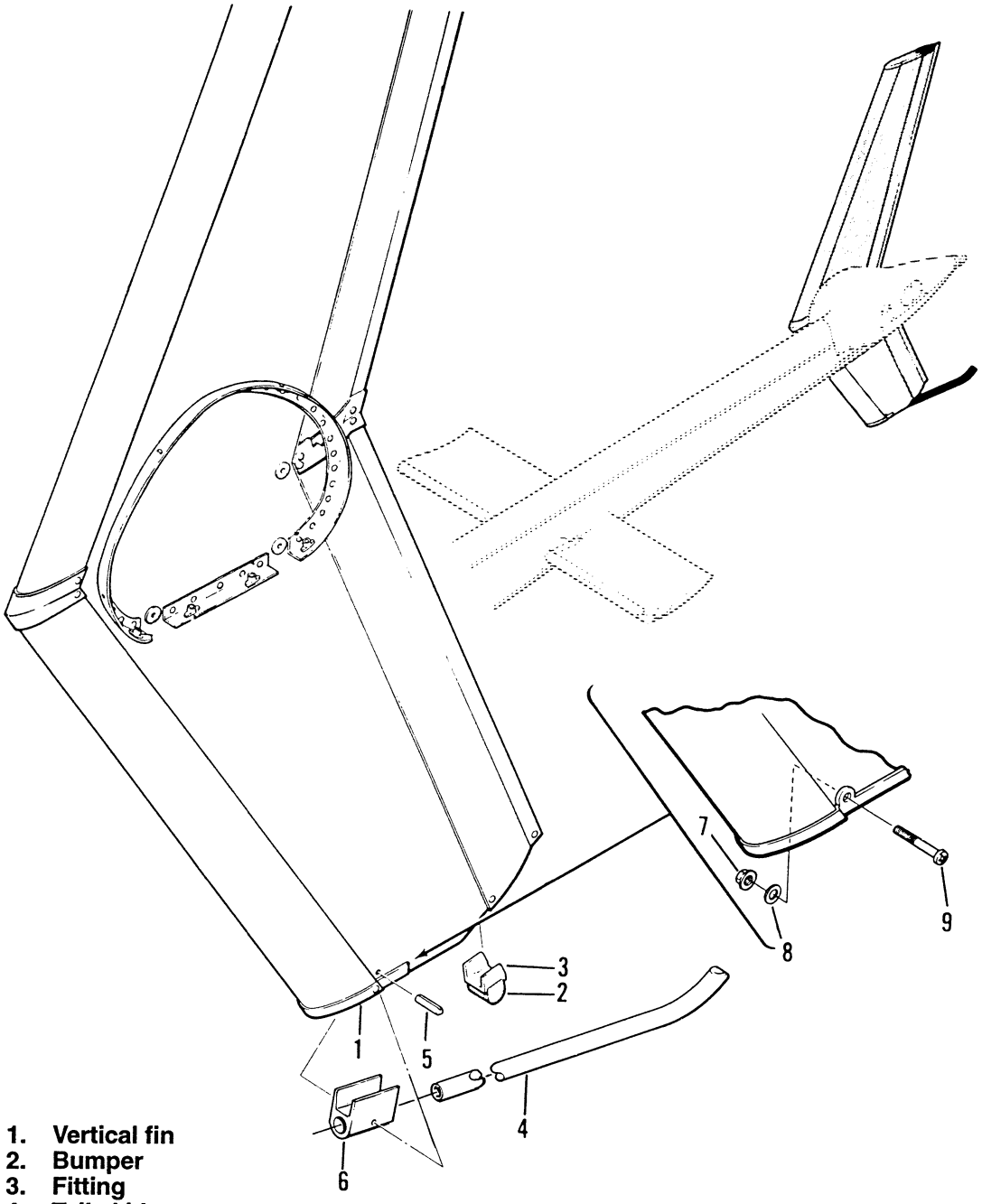
32-44. INSTALLATION.

1. Position tail skid (4, figure 32-22) in mount in bottom of vertical fin (1) and install pin (5).

NOTE

Use screw (9), washer (8), and self-locking nut (7), as primary hardware on helicopters S/N 4325 and subsequent.

2. Helicopter S/N 4325 and subsequent: position tail skid (4) in mount in bottom of vertical fin (1) and install screw (9), washer (8), and self-locking nut (7).



1. Vertical fin
2. Bumper
3. Fitting
4. Tail skid
5. Pin
6. Fitting

SEE NOTE
7. Nut
8. Washer
9. Screw

NOTE

Helicopters S/N 4325 and subsequent

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Figure 32-22. Tail skid assembly removal/installation