

**CHAPTER 99 — AUXILIARY EQUIPMENT KIT
FIXED FLOAT LANDING GEAR
206-706-008-013**

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FIXED FLOAT LANDING GEAR 206-706-008-013

1. DESCRIPTION.

Fixed float landing gear (figure 1) consists of two streamlined multi-cell, inflatable floats (3), float support tubes (4 and 5), crosstubes (1 and 2), position lights (6), and attaching hardware. A triangular plate (9) is included and mounts to the tail skid. The plate is for controllability, and partially protects the tail rotor in the event of a tail-low landing on water.

2. MAINTENANCE.

NOTE

Clean immediate area around helicopter where work will be performed. Remove any pointed tools or hardware such as tacks, screws, etc. from surface area where floats will be spread during assembly and installation.

NOTE

Tag all parts removed including hardware. Protect parts from damage until reinstalled (unless otherwise noted).

3. REMOVAL.



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

- a. Detach position lights cable assembly (1, figure 2) from cable assembly (2) by removing insulation tube (3) and separating disconnects (4).
- b. Cover disconnect ends with tape.
- c. Remove cable assembly (1) from insert (5, detail A) by removing clip (6) and hardware.
- d. Remove grommet (7) from hole in floor and remove from cable and pull cable (1) out of hole.

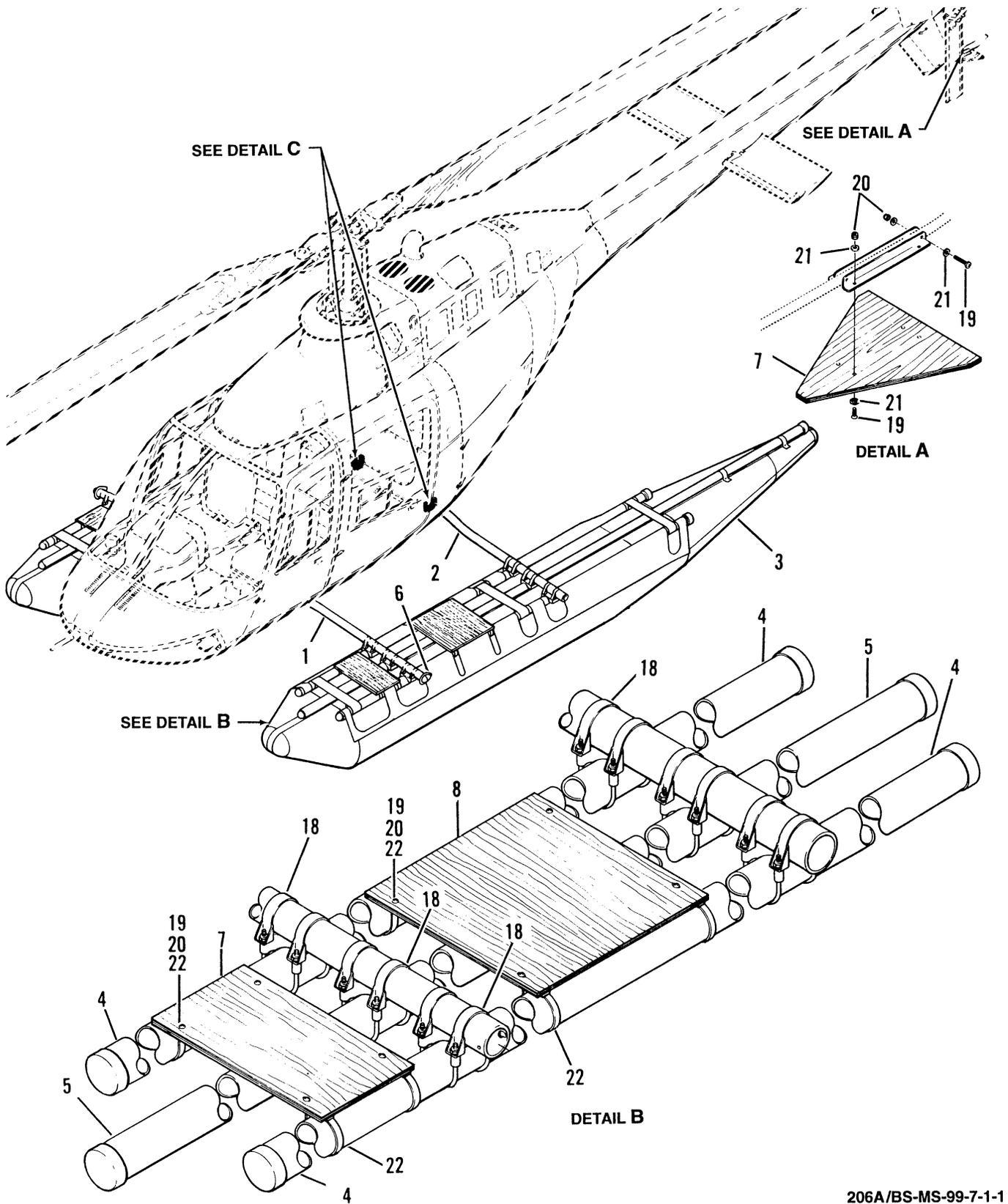
- e. Hoist helicopter (Chapter 7).
- f. Support float landing gear and remove bolts (10, figure 1), washers (11), nuts (12), and support assemblies (13) from forward crosstube (1).
- g. Remove bolts (10), washers (11), nuts (12), and support assembly (13) from aft crosstube (2).
- h. Remove U-bolts (14), nuts (15), washers (16), blocks (17), and straps (18).
- i. Remove screws (19), nuts (20), washers (21), clamps (22), and steps (7 and 8).
- j. Remove center support tube (5) and support tubes (4) from left and right float (3).
- k. Remove grommet (7, figure 2) from center hole in forward crosstube and remove grommet from cable (1).
- l. Remove light assembly (8) from left adapter (9) and repeat procedure for right adapter.
- m. Remove solder from terminal on light assembly (8) and disconnect cable (1). Repeat procedure for opposite light assembly.
- n. Remove cables and adapters from forward crosstube.
- o. For installation of skid type landing gear, refer to Chapter 32.
- p. For initial installation of fixed float landing gear and weight and balance requirements, refer to S.I. 206-26.

4. INSPECTION AND REPAIR.

SPECIAL TOOLS REQUIRED

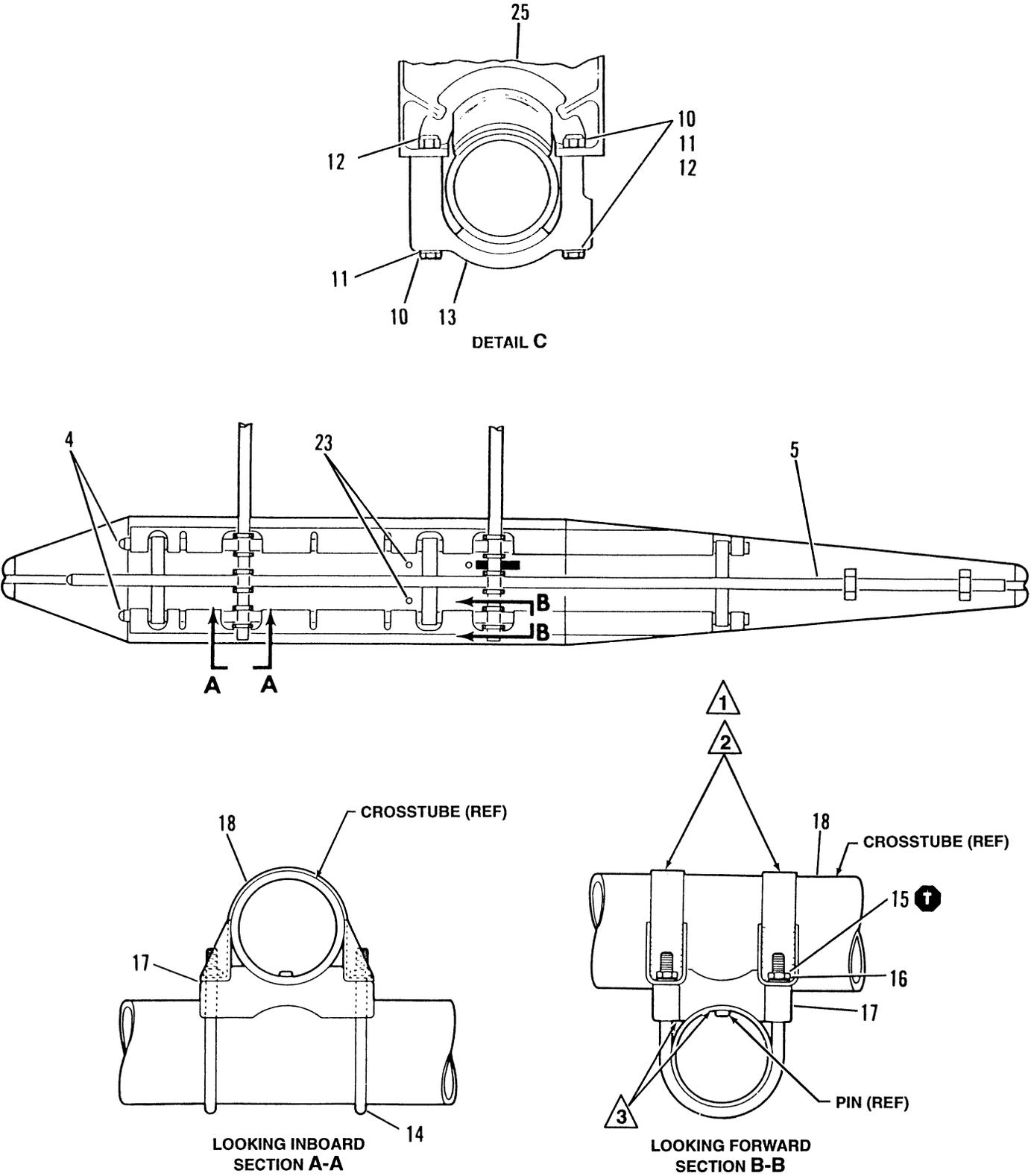
NUMBER	NOMENCLATURE
T100061	Float Inflation Kit

- a. Inspect visible portion of fuselage fittings for damage.
- b. Ensure fittings and spacers are properly sealed to prevent entry of moisture.
- c. Inspect front support and crosstubes for damage and corrosion. Repair or replace as required (Chapter 32), and A.S.B. 206-94-81 Rev. A..



206A/BS-MS-99-7-1-1

Figure 1. Float landing gear assembly (Sheet 1 of 3)



206A/BS-MS-99-7-1-2

Figure 1. Float landing gear assembly (Sheet 2)

- | | |
|------------------------------|-------------------------|
| 1. Forward crosstube | 14. U-bolt |
| 2. Aft crosstube | 15. Nut |
| 3. Float | 16. Washer |
| 4. Float support tube | 17. Block |
| 5. Float center support tube | 18. Strap |
| 6. Position light | 19. Screw |
| 7. Forward step | 20. Nut |
| 8. Aft step | 21. Washer |
| 9. Plate | 22. Clamp |
| 10. Bolt | 23. Filler valves |
| 11. Washer | 24. Tube tiedown straps |
| 12. Nut | 25. Fitting |
| 13. Support assembly | |

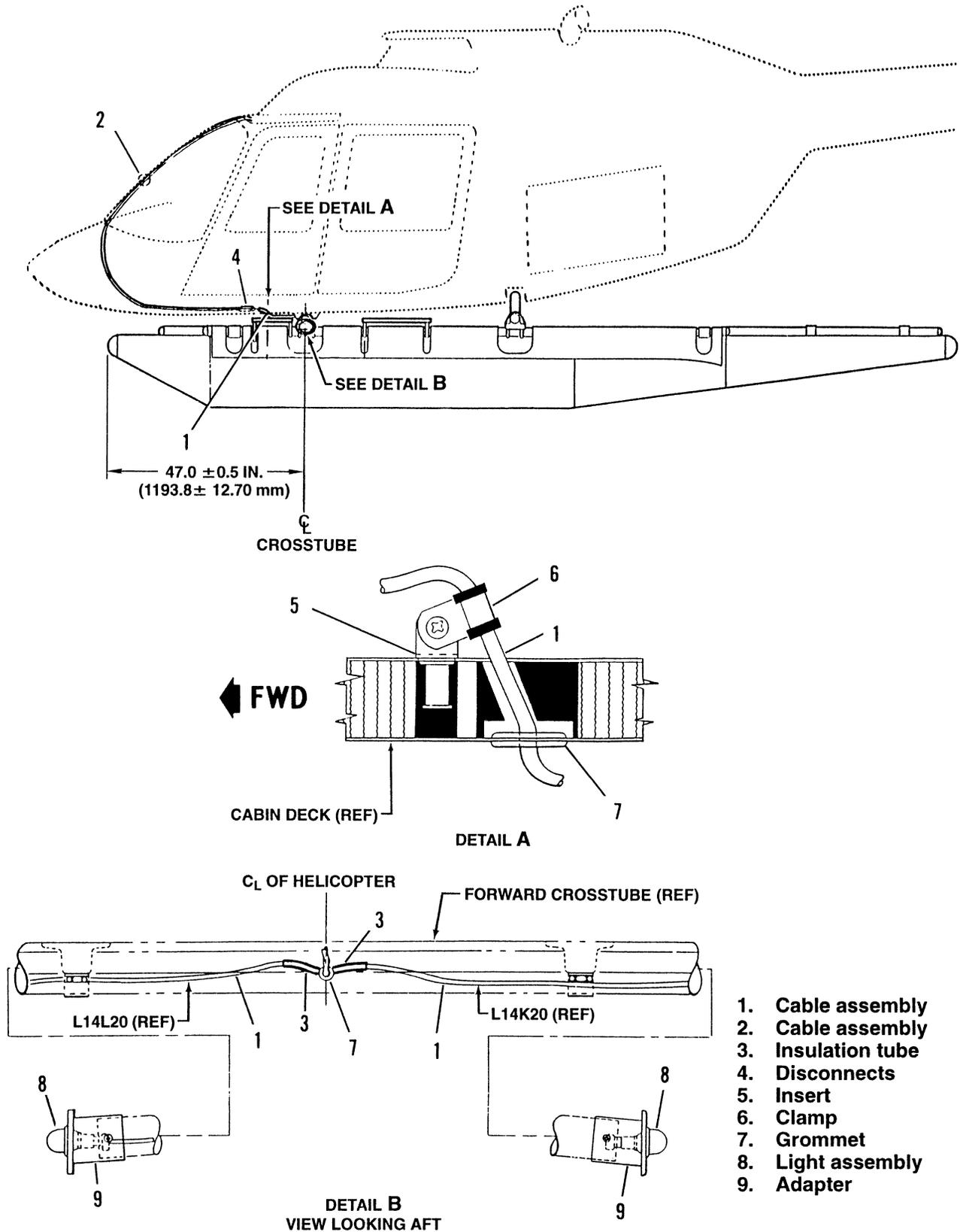
NOTES

-  Install with wet epoxy polyamide primer (C-204) between retaining straps and fuselage fittings.
-  Install one ply of Teflon tape (C-460) to faying surface of each strap.
-  Apply adhesive (C-308) between contact surfaces.

 15 TO 20 IN-LBS
(1.69 TO 2.26 Nm)

206A/BS-MS-99-7-1-3

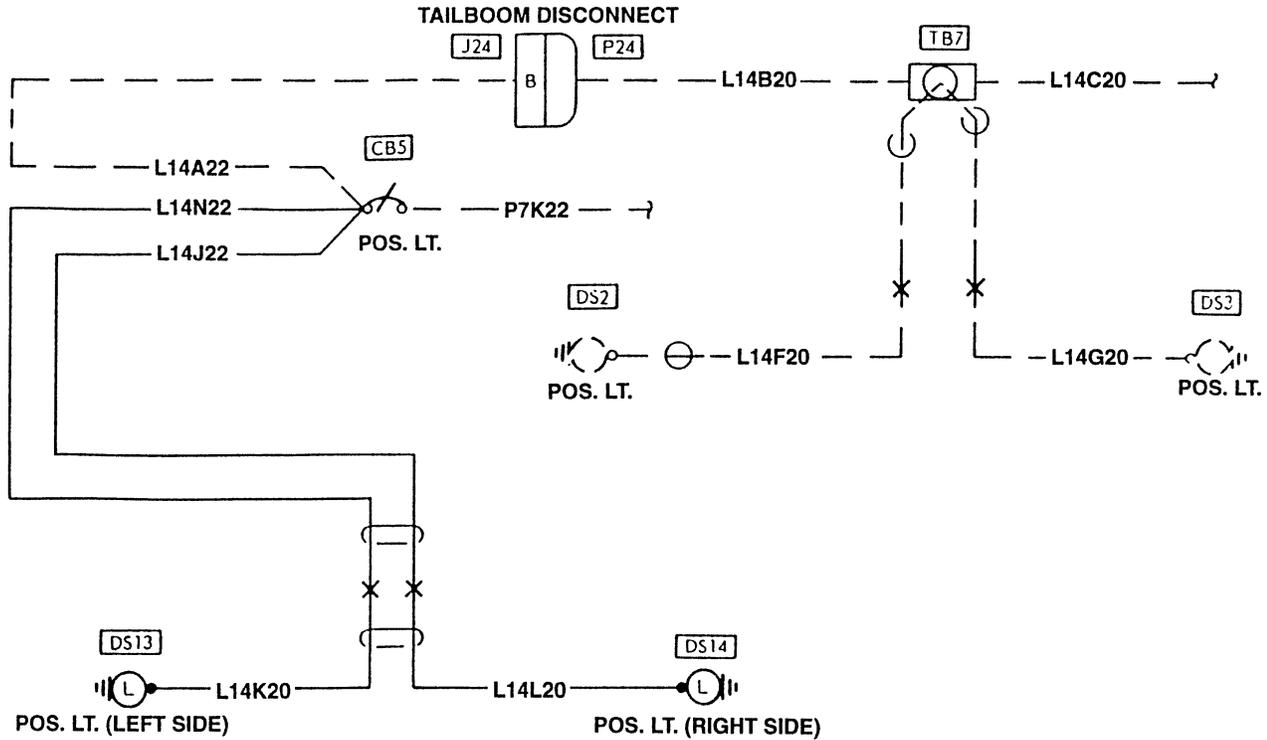
Figure 1. Float landing gear assembly (Sheet 3)



- 1. Cable assembly
- 2. Cable assembly
- 3. Insulation tube
- 4. Disconnects
- 5. Insert
- 6. Clamp
- 7. Grommet
- 8. Light assembly
- 9. Adapter

206A/BS-MS-99-7-2

Figure 2. Position lights assembly



206A/BS-MS-99-7-3

Figure 3. Position lights wiring diagram

d. Inspect crosstube for dents, scratches, and excessive deflection (Chapter 32).

(4) Patches must not overlap.

NOTE

Float bag repairs may be accomplished using repair kit part numbers 4192-1 (buff) or 4192-2 (black). This kit may be purchased from Bell Helicopter Textron, or Air Cruiser Co. (a division of the Garrett Corporation), P. O. Box 180, Belmar, New Jersey 07719. For information on consumable materials, refer to BHT-ALL-SPM.

e. Float repair restrictions are as follows:

(1) No repair of punctures or tears located less than 1 inch (25.40 mm) from bulkhead installation, girt attachment, seam, valve installation reinforcement, strut tunnel, or other structural attachments.

(2) No replacement of cemented valve installations.

(3) No repair or replacement of girts or other float-to-helicopter structural attachments.

f. Repair float punctures as follows:

(1) Apply two coats of cement (M-11619 cement supplied in repair kit) around puncture, covering an area slightly larger than size of patch. Apply M-11619 cement in medium, even coats, allowing each coat to dry thoroughly before applying next coat.

(2) Prepare one side of patch by washing with aliphatic naphtha (C-305) and applying two coats of M-11619 cement in accordance with step 4. Clean area to be patched thoroughly with aliphatic naphtha (C-305).

(3) Use round patch or rectangular patch with rounded edges.

(4) Cut patch to allow a 2.0 inch (50.80 mm) overlap beyond puncture edges.

(5) Both patch and area on float should be slightly tacky to touch. If surfaces become too dry, wipe lightly with aliphatic naphtha (C-305) to bring up tack.

(6) Press patch on smoothly. Patch should be laid on gradually, one side to other, or from the center edges. To minimize possibility of air bubbles, apply pressure evenly using a smooth spatula or burnishing tool.

(7) Press joined surfaces firmly together using roller. Pressure is important for a good bond.

(8) Dust lightly with talcum powder (C-408) and allow M-11619 cement to cure overnight, then cure for 40 minutes at 240°F (116°C) or at room temperature 75°F (24°C) for three days.

g. Punctures up to 2.0 inches (50.80 mm) long are patched as follows:

(1) When superficial oxidation (slight discoloration) of fabric coating is present, the repair area may be lightly scrubbed with abrasive pad provided in repair kit.



DO NOT ALLOW EXCESS ETHYL ACETATE (C-390) TO COLLECT AT EDGES OF PATCHES OR SEAMS WHEN WASHING FLOATS. AVOID WASHER OVER STENCILING WHEN POSSIBLE SINCE STENCILING MAY BE REMOVED BY ETHYL ACETATE.

(2) Thoroughly wash all around puncture with an ethyl acetate (C-390) dampened cloth.

(3) A round patch must be cut for application to the outer float surface only.

(4) Cut patch to allow a 2.0 inch (50.80 mm) overlap beyond puncture edges.

(5) Apply three coats of cement (M-11619 cement supplied in repair kit) to the float around the puncture covering an area slightly larger than the size of the patch. Apply M-11619 cement in medium, even coats, allowing each coat to dry until little or no tackiness remains before applying next coat. When blooming or condensation occurs, remove by swabbing with a separate cloth dampened in ethyl acetate (C-390).

(6) Prepare one side of patch by washing with ethyl acetate (C-390) and applying 3 coats of M-11619 cement in same manner as previous step (5).

(7) Within 2 hours after M-11619 cement application (or within 1 hour if the THI (Temperature Humidity Index = Temperature °F + relative humidity %) exceeds 130), dampen a clean cloth in methyl-ethyl-ketone (MEK) (C-309), and wipe cemented surfaces to reactivate tack surface for joining. If time lapse is exceeded, apply a fourth coat of M-11619 cement, allowing it to dry before proceeding.



SURFACES MUST BE JOINED IMMEDIATELY AFTER REACTIVATING TO AVOID DRY SEAMS. DO NOT REACTIVATE MORE THAN 12.0 INCHES (304.80 MM) OF SEAM AT A TIME.

(8) Immediately join cemented surface of the patch to the cemented surfaces of the float. The patch must be laid on progressively, one side to the other. To minimize the possibility of air bubbles, apply pressure evenly using a spatula.

(9) Further press the joined surfaces together using a roller with firm pressure. Pressure is important for a good bonding.

(10) Lightly dust surface with talcum powder (C-408) and M-11619 cement to cure undisturbed for a minimum of 24 hours.

h. Patch tears (cuts over 2.0 inches (50.80 mm) long) as follows:

NOTE

Float tears require patching both inside and outside of float walls.

(1) Trim loose threads.

(2) Thoroughly wash inside of fabric around tear with ethyl acetate (C-390).

(3) Cut patch same as previous step g.(4).

(4) Prepare interior wall and patch same as following steps (5) and (6).

(5) Repeat step g.(7).

(6) Lay patch directly under tear with M-11619 cement side up.

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(7) Press torn wall section onto patch same as previous step g.(8).

(8) Apply firm pressure with roller to bond patch to interior wall.

(9) Wash external surface with ethyl acetate (C-390).

(10) Cut a patch to cover a 4.0 inch (101.60 mm) overlap beyond the tear edges.

(11) Apply three coats of M-11619 cement to outside of float wall same as paragraph g., and prepare patch same as previous steps (5) and (6).

(12) Next steps are same as steps g.(7) through g.(10).

i. Patching seams.

(1) Roll back loosened seams to apply M-11619 cement properly.

(2) Wash both float fabric and seam tape with ethyl acetate (C-390) in area to be repaired.

(3) Apply three coats of M-11619 cement to surfaces to be joined same as steps g.(5) and g.(7).

(4) Rejoin seam and tape in correct relative position.

(5) Further press joined surfaces together using a roller with firm pressure. Pressure is important for a good bonding.

(6) Lightly dust surface with talcum powder (C-408) and allow M-11619 cement to cure undisturbed for a minimum of 24 hours.

(7) Inflate float and check for leaks.

j. Inflate four compartments of each float as follows:

NOTE

Inflate floats to 1-1/2 psi for conditions under which helicopter is to be flown. If floats have been inflated in a warm hangar and helicopter will be flown in cold temperatures, allow floats to normalize and check inflation to desired pressure. Do not overinflate.

(1) Unfasten flaps over float filler valves (23, figure 1).

(2) Thread fittings of T100061 inflation kit into valves and tighten. Loosen knurled nuts on compartment valves.

(3) Open valve slightly and inflate slowly to 1-1/2 psi and shut off pressure valve. DO NOT OVERINFLATE.

(4) Tighten knurled nuts on compartment valves, disconnect pressure and filler lines.

(5) If nonregulated inflation source is used, fold hose over and squeeze closed before applying air chuck to filler valve. Apply chuck and release pressure slightly on hose and inflate slowly to 1-1/2 psi. DO NOT APPLY FULL LINE PRESSURE.

(6) Fasten flaps over compartment valves.

(7) Pressure test floats daily when in use to ensure 1-1/2 psi inflation is maintained.

5. INSTALLATION.

NOTE

Instructions below are typical for both floats.

Assemble fixed floats (3, figure 1), support tubes (4 and 5), and crosstubes (1 and 2) as follows:

a. Spread float bags (3) with tube tiedown straps (24), and filler valves (23) upright. Inflate each float (3) half full.

b. Insert inboard and outboard support tubes (4) into boots and straps on top of float. Insert center support tube (5) along center of float (3) over the large straps. Rotate support tubes (4 and 5) until alignment holes are up. Secure center tube (5) with tube tiedown straps (24).

c. Position float support tube blocks (17) with pins mating support tube alignment holes. Mark outline of contact surfaces between blocks and support tubes. Remove blocks and apply adhesive (C-308) over contact surfaces.

d. Install blocks (17), aligning pins with support tube holes, and forward crosstube. Apply adhesive (C-308) to contact surfaces of block and forward crosstube.



DO NOT EXCEED TORQUE ON NUTS IN FOLLOWING STEP (F). FLOAT SUPPORT TUBES WILL BEND IF EXCESSIVE TORQUE IS APPLIED.

DO NOT USE CUTTING TOOL TO TRIM TEFLON TAPE. TRIM TAPE BEFORE APPLYING.

e. Prior to installing straps (18) and U-bolts (14), place a layer of Teflon tape (C-460) on strap fraying surface.

f. Secure support tubes and float to forward crosstube with six U-bolts (14) around support tubes, two in each block, and six strap assemblies (18) over crosstubes, two on each block, using 12 washers (16) and 12 nuts (15) .

g. Secure float on opposite (right) side of forward crosstube identical to that outlined for left side above.

h. Install aft crosstube to floats using 12 strap assemblies (18) and six blocks (17) with identical type and amount of hardware and adhesive (C-308) in same manner as installed on forward crosstube.



POSITION FLOATS SO AS TO CLEAR THE BOLTS ON BOTH INBOARD AND OUTBOARD SUPPORT TUBES AT FORWARD GIRT ON FLOATS TO PRECLUDE TEARING OF GIRT.

i. Inboard center float support tube (5) into side pockets provided on inboard side of float (3). Secure tube with nylon cord.

j. Install forward and aft step assemblies (7 and 8) on each float as follows:

(1) Slip four clamps (22), two over each support tube, at slots provided on float just forward of forward crosstube. Secure forward step (7) to support tubes with the four clamps (22) using four screws (19), washers (21), and nuts (20).

NOTE

Two slotted holes in each step provide lateral tolerance, if required, for installing steps on support tubes.

(2) Install aft step (8) at slots provided on float between forward and aft crosstubes identical to that outlined for forward step.

(3) Inflate floats (step j.).

k. Install insulation tube over each cable assembly (1, figure 2) and insert cables through center hole in forward crosstube and lead through tube to left and right side, positioning insulation tube over cables at center hole.

l. Install left and right adapter (9) onto end of crosstube, attaching each adapter with perviously removed hardware.

m. Solder cables to terminal on light assembly (8) and attach to adapter (9).

n. Insert grommet (7) over cables and install grommet into center hole in forward crosstube assembly and seal with adhesive (C-308). Pull wires taut and allow to hang.

o. Support float landing gear and position under helicopter to mate existing support, and lower helicopter onto crosstubes (Chapter 7). Install spacer washers (11), with wet epoxy polyamide primer (C-204) between support assembly (13) and fuselage fittings (25), and bolts (10).

p. Install grommet (7) over cable assembly (1), and route through hole in floor (detail A). Insert grommet into hole and seal with adhesive (C-308).

q. Attach cable assembly (1) to existing insert (5) with previously removed hardware.

r. Remove tape from end of disconnect.

s. Attach end of cable assembly (1) to cable assembly (2) with disconnects and install insulation tube (3) over each disconnect.

