INTERMEDIATE AND DEPOT MAINTENANCE

COMMON REPAIR PROCEDURES

List of Effective Work Package Pages

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Reference Material

Cartridge Actuated Devices (CADS) and Propellant Actuated Devices (PADS) (IETM) . . . . . NAVAIR 11-100-1.1
Introduction, Organizational, Intermediate and Depot Maintenance with Illustrated Parts Breakdown, Emergency Personnel and Drogue Parachute Systems . . . . . WP 002 00
Organizational, Intermediate and Depot Maintenance, Parachute Loft Requirements/Administration . . . . . WP 003 00
Organizational, Intermediate and Depot Maintenance, Support Equipment . . . . . WP 005 00

Alphabetical Index

Alphabetical Index (Cont.)

1. INTRODUCTION.

a. This Work Package (WP) contains instructions for the maintenance, repair, replacement, and fabrication of various parachute parts, subassemblies and restraint harness, to ensure that proper items of equipment remain in a Ready-For-Issue (RFI) status. Selected repairs shall be documented on applicable records. See Table 1 for standard dimension tolerances.

Table 1. Standard Dimension Tolerances

Dimension	Tolerance
Less than 2-in.	± 1/16-in.
2-in. to 10-in.	± 1/8-in.
10-in. to 30-in.	± 1/4-in.
30-in. to 60-in.	± 3/8-in.
60-in. and greater	± 1%
Angles	± 2-degree
Tensions	± 10%
Zig Zag Stitch Length	± 1/2 - 0-in.

Where a dimension of 1/16-in. is given, the tolerance shall be ± 1/32-in.

Tolerances shall not be cumulative.

2. REPAIRS.

a. Though many of the more common repairs are covered in this manual, it should not be construed to mean that such procedures are the only authorized repair. Any time a parachute assembly or parachute restraint harness can be restored to operational condition, repairs may be made.

b. Supervisors are responsible for determining if repairs may be performed locally, if a parachute assembly should be forwarded for repairs, or if any assembly is unrepairable.

c. The primary concern in repairing an assembly is ensuring that the basic structure integrity designed into the assembly is maintained. This is necessary for the safety of the aircrew who uses the parachute assembly or parachute restraint harness. Repairs, other than those listed, may be performed on any parachute assembly or parachute restraint harness, provided the integrity of the assembly is maintained.

d. When performing repairs detailed in this WP, the following procedures will be observed:

(1) Review and follow applicable instructions in this WP prior to starting repair.

(2) Ensure that all necessary Support Equipment and Materials Required are available.

(3) When required, remove enough material from its source for immediate use only. Ensure that the material identification ticket remains with the source material at all times. Materials that can not be identified will not be used.

(4) For all machine stitching, use either stitch type 301 (lockstitch), 304 (single-throw zigzag) or 308 (double-throw zigzag) of ASTM-D-6193, unless otherwise specified (Figure 1). Exact stitch type and stitches per inch shall be as specified in repair/fabrication instructions. Stitches per inch for stitch type 301 shall be number or needle penetrations where threads are interlaced per linear inch. Backstitch shall not be less than 1/2-in. Stitches per inch for stitch types 304 and 308 are determined by number of needle penetrations on one side per linear inch (Figure 1).

(5) All seams and stitches shall conform to original design. If conflicts occur, the applicable parachute part's drawings shall be reviewed and followed.

(6) All standard dimension tolerances shall be per Table 1, unless otherwise specified.

(7) When opening seams and removing stitching use extreme care to ensure that no damage to the material results.

(8) To ensure conformity, repair/fabrication work shall be carefully inspected and compared to applicable instructions at the completion of work.

(9) A Quality Assurance (QA) inspector shall witness all applications of torque values and functional inspections, and shall examine all designated QA tasks and finished work.

e. When performing repairs not detailed in this WP, the following procedures will be observed:

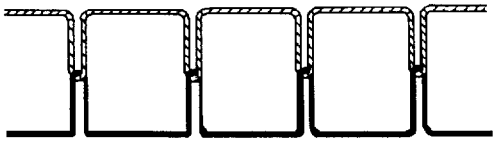
(1) The applicable parachute drawings and specifications shall be reviewed and followed. Refer to Table 1 for standard dimension tolerances.

(2) If conflicts occur, parachute specifications and drawings shall take precedence.

(3) Extreme care shall be observed in removal and opening of seams to ensure that no damage to material results.

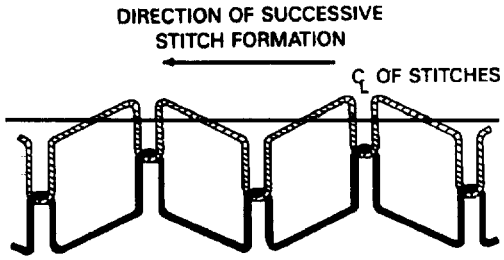
(4) All repair work shall be carefully inspected and compared to drawings and specifications at completion of work to ensure conformity.

THREAD SIZE	NUMBER OF STITCHES PER INCH		
	STRAIGHT STITCHING TYPE 301	ZIG – ZAG STITCHING	
		SINGLE THROW TYPE 304	DOUBLE THROW TYPE 308
B	7 – 11	12 – 16	8 – 12
E	7 – 11	12 – 14	7 – 10
F	7 – 11	12 – 14	7 – 10
FF	6 – 9	–	–
3	5 – 8	–	–
5	4 – 6	–	–
6	4 – 6	–	–



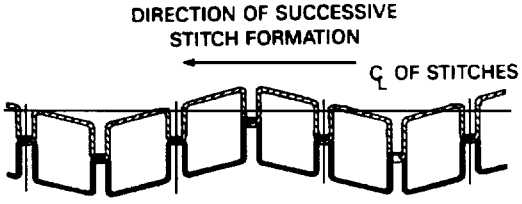
STITCH TYPE 301

LOCKSTITCH



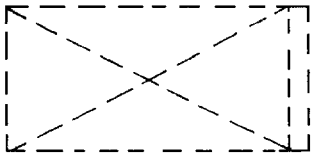
STITCH TYPE 304

SINGLE THROW ZIGZAG STITCH

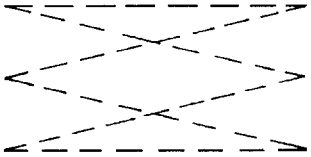


STITCH TYPE 308

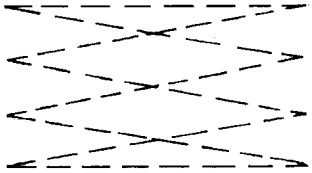
DOUBLE THROW ZIGZAG STITCH



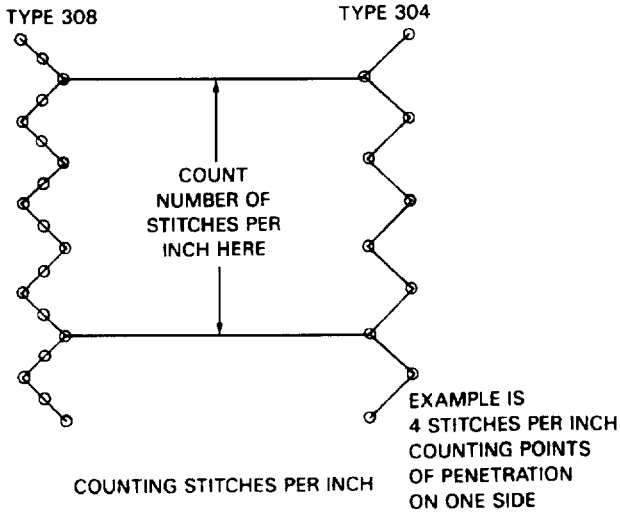
BOXSTITCH PATTERN



3 POINT CROSS – STITCH PATTERN



4 POINT CROSS – STITCH PATTERN



COUNTING STITCHES PER INCH

6.2-5152C

Figure 1. Stitching and Stitch Patterns

3. CLEANING.

4. GENERAL.

a. Cleaning of parachute parts and restraint harness should be held to a minimum and performed only when necessary to avoid deterioration. Only pilot parachute, connector strap, canopy and restraint harness may be cleaned by machine and these must be washed individually. Two methods of cleaning are presented: handwashing and machine washing. Cleaning by handwashing should be attempted first. If handwashing does not clean part, try machine washing. No parachute part or restraint harness shall be machine washed more than 2 times. Any parachute part or restraint harness requiring machine washing a third time shall be removed from service. Activities not having facilities for cleaning shall forward the assembly to depot level maintenance.

5. CLEANING, SUPPORT EQUIPMENT, AND MATERIAL REQUIREMENTS.

a. Washing Machines: Tumble type washing machines shall be used. The washing machine must have a temperature control and a rinse cycle.

CAUTION

Do not use a forced-heat dryer. Do not wring water from canopy.

b. Clothes Dryers: Any tumble action dryer that can be controlled so that air temperature does not exceed 60_C (140_F) or a vacuum type dryer designed for parachutes or restraint harness is acceptable. Do not use a forced heat dryer.

c. Cleaning Chemicals: Mild soap (e.g., Ivory) or soap solution and a water softener may be used.

d. Washing Requirements: Parachute parts and restraint harness shall be machine washed for not more than 10 min. at a temperature not to exceed 60_C (140_F). The part shall be rinsed in warm water, followed by cold water.

e. Drying Requirements: Machine drying should be used only after 1 hr. of drip-drying while suspended full length. Parachute parts and restraint harness shall not be left in dryer any longer than necessary to complete drying. Machine drying should not be used to completion if an indoor drying facility is available. Where indoor drying is available, parachute parts and restraint harness should be removed from dryer while slightly damp and suspended for air drying.

6. HANDWASHING.

Support Equipment Required

Part Number	Nomenclature
—	Wash Tub
00-W-860	Clothes Dryer (with Low Speed Capability)

Materials Required

Specification or Part Number	Nomenclature
CCC-C-458	Cloth, Flannel, (Any Suitable)

a. Wrap all metal fittings in heavy flannel cloth or remove hardware.

b. Immerse assembly in clean fresh water not to exceed 60_C (140_F). Gently move items by hand until all air pockets are removed.

c. Agitate by hand while water flows thru and around fabric.

CAUTION

Do not wring out the canopy.

d. After a short time (not to exceed 10 min.), remove part from tub and allow it to drain as completely as possible.

e. Rinse part in clean warm water, followed by cold water until rinse water is clean.

CAUTION

Do not use a force-heat dryer.

f. Dry parachute either by air drying indoors or by using a machine dryer Paragraph 5.b.

7. MACHINE WASHING OF CANOPY AND RESTRAINT HARNESS.

Support Equipment Required

Part Number	Nomenclature
00-W-860	Washing Machine, Tumble Type
00-W-860	Clothes Dryer, Low Speed Capability
—	Laundry Bag, Cloth Mesh

Materials Required

Specification or Part Number	Nomenclature
—	Soap (e.g., Ivory)
—	Water Softener, (If Required)
CCC-C-458	Cloth, Flannel (Any Suitable)

NOTE

Laundry bag shall be large enough to hold one parachute assembly or restraint harness loosely.

a. Canopy and suspension lines shall be removed from container; connector links shall be removed from suspension lines and wrapped in heavy flannel cloth.

b. The suspension lines shall be gathered together and tied with cord every 3-ft. from ends to canopy skirt.

c. Place canopy or restraint harness loosely in a cloth mesh laundry bag.

d. Add soap and water to washing machine (add water softener if necessary) prior to placing canopy or restraint harness in washing machine.

e. Wash canopy or restraint harness.

f. Remove tie cords on canopy.

g. Dry canopy or restraint harness per Paragraph 5.e.

h. Record date of washing on applicable Record.

8. MACHINE WASHING OF PILOT PARACHUTE AND CONNECTOR STRAP.

Support Equipment Required

Part Number	Nomenclature
00-W-860	Washing Machine, Tumble Type
00-W-860	Clothes Dryer (with Low Speed Capability)

Materials Required

Specification or Part Number	Nomenclature
—	Soap (e.g., Ivory)

a. Add soap and water to washing machine (add water softener if necessary) prior to placing part in washing machine.

b. Wash part.

c. Dry part per Paragraph 5.e.

d. Record date of washing on Parachute Record (OPNAV 4790/101).

9. MACHINE WASHING OF DROGUE PARACHUTE ASSEMBLY.

Support Equipment Required

Part Number	Nomenclature
00-W-860	Washing Machine (Tumble Type)
Part Number	Nomenclature
00-W-860	Clothes Dryer (with Low Speed Capability)
—	Laundry Bag, Cloth Mesh

Materials Required

Specification or Part Number	Nomenclature
PIA-C-5040	Cord, Nylon, Type III
—	Soap (eg, Ivory)
—	Water Softener (If Required)
CCC-C-458	Flannel Cloth (Any Suitable)

a. Place drogue assembly loosely in a cloth mesh laundry bag.

b. Add soap and water to washing machine (water softener if necessary) prior to placing part in washing machine.

c. Wash part.

d. Dry part per Paragraph 5.e.

e. Record date of washing on Parachute Record (OPNAV 4790/101).

10. APPLICATION OF MARKINGS.

Support Equipment Required

Part Number	Nomenclature
—	Stamp Pad
—	Rubber Stamp Kit -or- Adjustable Metal Stencil
Style No. 8	-or- Printing Set
GG-P-655	-or- Printing Set

Materials Required

Specification or Part Number	Nomenclature
MIL-I-6903	Ink, Marking, Light Blue
TT-I-1795	Ink, Marking, Black

a. When a parachute part is placed in-service, the month/year of opening the manufacturer's individual shipping container shall be stenciled on part.

b. When using a stamp pad, moisten pad with ink. Pad must be evenly coated and free of clots.

c. Make a test impression to determine correctness of marking and inking.

NOTE

When stamping canopy material, place paper towels behind area to be stamped to prevent smearing or blotching.

d. Mark on part as follows:

(1) Canopy. On gore 28 (A/P28S-24 on gore 20) below nameplate information, marking shall be 1/2-in. high and made with blue ink. The term "DATE PLACED IN SERVICE", followed by month/year notation, will be placed directly below the nameplate.

(2) Pilot parachute. On crown, marking shall be 1/4-in. high.

(3) Pilot parachute connector strap. On strap, marking shall be 1/4-in. high.

(4) Pilot parachute bridle. On identification and service life label, marking shall be 1/4-in. high.

(5) Harness. On identification and service life label, marking shall be 1/4-in. high.

(6) Risers. On identification and service label, marking shall be 1/4-in. high.

(7) Container label. On container label, marking shall be 1/4-in. high. Serial number from canopy name plate. Assembly activity (CAGE code). Contract number from canopy nameplate. Month/year for date of assembly. Complete assembly dash number from illustrated parts breakdown.

(8) Spreading gun cartridge. Mark in black ink with characters no smaller than 1/16-in. and as large as practicable: CAGE code, lot number, and month and year of can open/installation on side of cartridge, can open date and service life expiration date on the cartridge head (Figure 2).

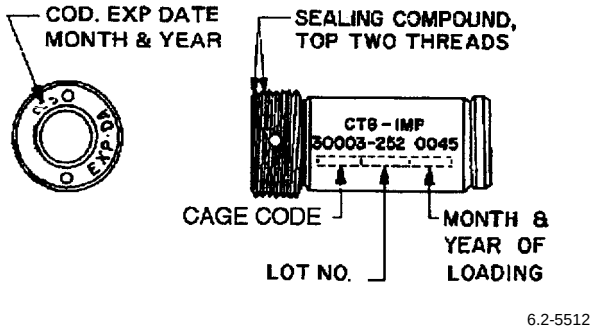


Figure 2. Spreading Gun Cartridge Marking

(9) Drogue withdrawal line. Above point of attachment to controller drogue. Marking shall be 1/4-in. high.

(10) Controller drogue. On canopy above identification label. Marking shall be 1/4-in. high.

(11) Connecting line. At overlap within stitched area. Marking shall be 1/4-in. high.

(12) Cross-connector strap. On identification and service label. Marking shall be 1/4-in. high.

(13) Stabilizer drogue. On canopy above identification label. Marking shall be 1/4-in. high.

(14) Extender strap. Adjacent to stitched area on standing portion of strap on one end only. Marking shall be 1/4-in. high.

(15) Link line. On visible portion of webbing or neoprene sleeve. Marking shall be 1/4-in. high.

(16) Word bridle. Between sear and spool. Marking shall be 1/4-in. high.

(17) Deployment sleeve. On identification and service label. Marking shall be 1/4-in. high.

d. Verify correctness of all markings. (QA)

e. Allow marking ink to dry for 20 to 30 min.

f. Make proper entries on Parachute Record (OPNAV 4790/101).

11. CONTAMINATION REMOVAL.

a. Remove from service any parachute assembly, subassembly or restraint harness for any of the following conditions:

(1) Immersion in salt water for more than 24-hr. or immersion in salt water and cannot be cleaned within 36-hr.

(2) Contamination by firefighting agent.

12. DETERMINATION OF ACID OR ALKALINE CONTAMINATION.

Materials Required

Specification or Part Number	Nomenclature
O-C-265	Water, Distilled
A-988	Test Kit, Alkacid

a. Parachute parts or restraint harness suspected of acid or alkaline contamination shall be tested with pH test paper. A pH reading of 5.0 to 9.0 is in the safe zone. Readings below 5.0 indicate excess acidity, and readings above 9.0 indicate excess alkalinity. To test for excess acidity or alkalinity, do as follows:

CAUTION

Ensure that testing area is free of contaminants to avoid false readings or damage to assembly.

(1) Dampen suspected area with distilled water.

NOTE

Handle test paper at one edge only to prevent obtaining a false reading.

(2) Place a piece of full range test paper (0.0 to 14.0 pH) on dampened area. A color change will indicate the approximate pH value and the specific short range test paper to be used.

(3) Place short range test paper indicated in Sub-step (2) on dampened area. The color change indicates the pH factor of affected area. By matching test strip with applicable range color chart supplied with pH indicator kit, acid or alkaline strength can be determined.

NOTE

If contamination is found, care must be taken to prevent contact between the contaminated area other portions of the assembly, which could spread the contamination.

13. REMOVAL OF ACID.

a. If acid contamination is found, the affected area and/or part shall be removed and replaced per applicable procedures in this WP.

14. REMOVAL OF ALKALINE.

Materials Required

Specification or Part Number	Nomenclature
A-988	Test Kit, Alkacid

a. Rinse suspected area with cool, fresh water.

b. Check suspected area with alkacid test kit.

c. When a safe pH reading is attained (5.0 to 9.0), carefully inspect for deterioration. Repair or replace any deteriorated portions per applicable procedures in this WP.

15. REMOVAL OF BLOODSTAINS.

Materials Required

Specification or Part Number	Nomenclature
—	Soap (e.g., Ivory)

a. Soak stained area in cold water.

b. Follow soaking by handwashing affected area with mild soap and water solution.

c. Rinse affected area thoroughly with fresh clean water.

d. Hang assembly by its vent lines in a wet locker to dry.

e. After drying, inspect contaminated area for deterioration. Repair or replace per applicable procedures in this WP.

16. REMOVAL OF FRESH WATER.

a. Dry parachute assembly by hanging it by its vent lines in wet locker.

b. After drying, inspect contaminated area for deterioration. Repair or replace per applicable procedures in this WP.

c. Dry restraint harness by hanging on a wooden hanger in the wet locker.

d. After drying, inspect contaminated area for deterioration.

NOTE

Minor discoloration due to water immersion is allowable.

17. REMOVAL OF FUNGI.

Materials Required

Specification or Part Number	Nomenclature
—	Soap (e.g., Ivory)

a. Wash affected area with a mild soap and water solution.

b. Rinse affected area thoroughly with fresh clean water.

c. Hang in a wet locker to dry.

18. REMOVAL OF MUD, DIRT, SAND, AND TRASH.

Materials Required

Specification or Part Number	Nomenclature
H-B-491	Soft Brush

a. Hang parachute assembly by its vent lines and allow it to dry. Hang restraint harness on a wooden hanger and allow to dry, then shake thoroughly.

b. Shake this assembly thoroughly, then brush lightly with a soft brush.

c. If necessary, clean per Paragraph 3.

19. REMOVAL OF PERSPIRATION.

a. Clean parachute parts or restraint harness per Paragraph 3.

b. After cleaning, inspect contaminated area for deterioration. Repair or replace per applicable procedures in this WP.

20. REMOVAL OF PETROLEUM PRODUCTS.

Materials Required

Specification or Part Number	Nomenclature
—	Soap (e.g., Ivory)

a. Wash affected area by repeated applications of mild soap and water solution. Each application shall be followed by a rinse in clean fresh water.

b. Continue washing and rinsing affected area until clean.

c. Hang assembly by its vent lines in a wet locker to dry.

d. After drying, inspect contaminated area for deterioration. Repair or replace per applicable procedures in this WP.

21. REMOVAL OF SALT WATER.

a. If the parachute part meets the decontamination criteria in Paragraph 11, clean per Paragraph 3.

22. CANOPY ASSEMBLY REPAIRS.

a. Repair of the canopy, suspension lines, four-line release lanyards, and connector links limited to the following:

(1) Do not repair holes 1-in. or less, mark location on a canopy damage chart.

(2) Repair of any canopy hole or tear larger than 1-in and less than 8-in. long with a double patch.

(3) Cleaning of contaminated areas.

(4) Replacement of connector link torque seal (after correct torquing is verified).

(5) Repair of suspension lines and four-line release lanyards (Figure 3 or 4).

(6) Repair of four-line release lanyards per paragraphs 33, 34, or 35.

(7) Removal of dips and twists.

(8) Four-line release lanyard removal and replacement.

(9) Four-line release tacking replacement.

(10) Rigging four-line release daisy chain.

(11) Removal and reinstallation of suspension lines for proper sequencing.

(12) Pull down vent (PDV) lines replacement (if applicable).

b. Replace canopy assembly for any of the following:

(1) One or more complete gores are torn.

(2) Holes larger than 8-in. in diameter or tears longer than 8-in. in length in any one or more section.

(3) Any one canopy section requireing more than two double patches, replace the canopy assembly.

(4) Damaged suspension lines (Figure 3 or 4).

(5) Service/total life per applicable personnel parachute assembly.

c. Replace connector links for any of the following:

(1) Play in yoke and plate assembly is more than 1/32-in. when screw is correctly torqued.

(2) Corrosion, distortion, bends, nicks, burrs, sharp edges, and breaks where that damage may affect the safe operation of the parachute.

23. DOUBLE PATCHING.

Materials Required

Specification or Part Number	Nomenclature
V-T-295	Thread, Nylon, Size E, Type I or II, Class A
PIA-C-7020	Cloth, Parachute, Nylon, Type I, Color-As Required

NOTE

Upon completion of repair, backstitch 2 1/2-in. on radial seams or hems and 1 1/4-in. on diagonal seams. If patch is not anchored to a seam or hem, backstitch 1 1/4-in.

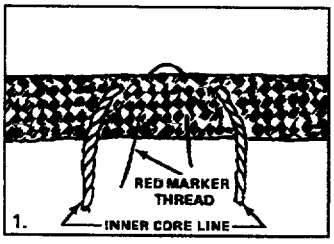
a. Using a soft lead pencil, outline area with a minimum margin of 1-in. around a 1 to 3-in. hole; 1 1/2-in. around a 3 to 6-in. hole; and 2-in. around a 6 to 8-in. hole.

NOTE

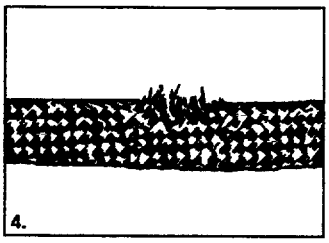
If possible, anchor patch to at least one seam or hem.

b. Place a piece of new material over outlined area so that weave of new material matches weave of canopy. Cut a patch 1-in. larger than outlined area. This is inside patch.

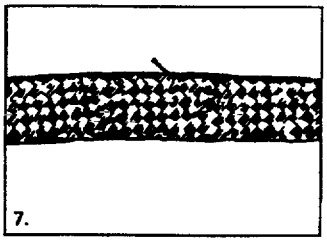
c. In order to cut outside patch, lay inside patch on a piece of new material and cut patch 1/4-in. larger on all sides except side or sides to be anchored to a seam or hem. Side to be anchored to a seam or hem shall be cut to same size as inside patch.



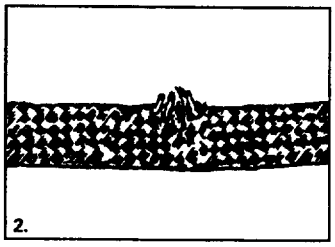
TWO CORE ENDS PROTRUDING THROUGH SLEEVE.



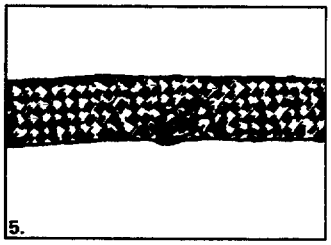
FRAYED SLEEVE



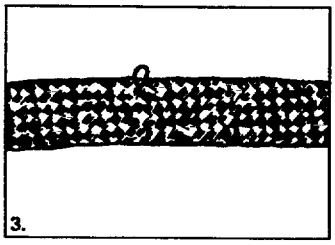
SINGLE THREAD OR YARN MATERIAL EXTENDING FROM SLEEVE.



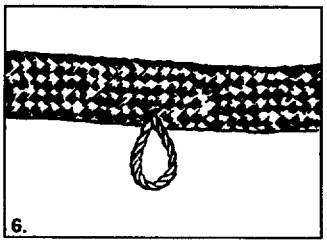
RUPTURE



MINOR WEAVE SEPARATION TO SLEEVE.



LOOPED PULLED THREAD IN SLEEVE.



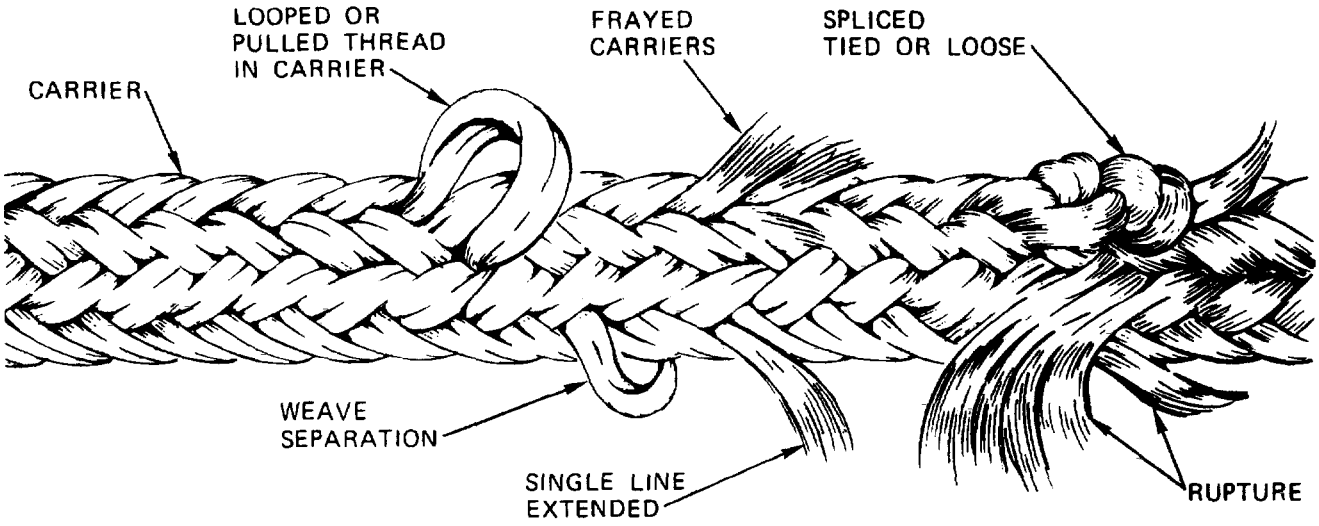
LOOPED INNER CORE LINE NO DAMAGE TO SLEEVE.

TYPE OF DAMAGE	ACTION REQUIRED
1. TWO CORE ENDS PROTRUDING THROUGH SLEEVE.	TRIM BOTH ENDS FLUSH WITH SLEEVE. IF PRESENT, REMOVE MARKER THREAD (UTILIZED BY MANUFACTURER INDICATING CORE SPLICES).
2. RUPTURE.	REPLACE ENTIRE CANOPY ASSEMBLY.
3. LOOPED PULLED THREAD OR YARN IN SLEEVE.	IF AREA AFFECTED IS SMALL AND LOOP THREAD OR YARN CAN BE RETRACTED INTO SLEEVE THE SITUATION IS ACCEPTABLE, OTHERWISE REPLACE ENTIRE CANOPY ASSEMBLY. REFER TO NOTE 1.
4. FRAYED SLEEVE.	REPLACE ENTIRE CANOPY ASSEMBLY WHEN YARN OF FRAYED AREA IS COMPLETELY SEVERED OR INNER CORE LINES ARE VISIBLE. OTHERWISE NOTE PARACHUTE CONFIGURATION INSPECTION AND HISTORY RECORD TO INSURE CLOSER INSPECTION OF AREA DURING FUTURE REPACKING OF ASSEMBLY.
5. MINOR WEAVE SEPARATION TO SLEEVE	GENTLY MASSAGE WEAVE TO ACHIEVE NORMAL THREAD ORIENTATION.
6. LOOPED INNER CORE LINE. NO DAMAGE TO SLEEVE.	TRY CORRECTIVE ACTION AS TYPE 3.
7. SINGLE THREAD OR YARN MATERIAL EXTENDING FROM SLEEVE.	TRIM END FLUSH WITH SLEEVE.

NOTES:
1. 1/16 INCH PROTRUSION IS ALLOWABLE.
2. FOR PURPOSE OF TRIMMING PROTRUDING INNER CORE ENDS ONLY, ONE SUSPENSION LINE WILL BE CONSIDERED FROM CONNECTOR LINK TO SKIRT HEM.

6.2-5153A

Figure 3. Repair of Suspension Lines



	TYPE OF DAMAGE	ACTION REQUIRED
1 	SPLICE INTERNAL OR EXTERNAL (TIED OR LOOSE)	WORK SPLICE INTO MAIN BODY CORD. IF PRACTICAL, TIE ENDS WITH SQUARE KNOT. USE OF BEESWAX TO STIFFEN CARRIER PERMISSABLE TO AID TYING ENDS. ENDS LESS THAN 1/2–IN. LONG NOT REQUIRED TO BE TIED NO MORE THAN 2 PER LINE
2 	RUPTURE OF CARRIER	TWO OR MORE RUPTURED CARRIERS PER SUSPENSION LINE, REPLACE CANOPY
3 	LOOPED OR PULLED THREAD (FILAMENT) CARRIER	LOOPS LESS THAN 1/2–IN. NEED NOT BE WORKED BACK INTO BODY OF CORD. WORK LOOPS OR PULLS OVER 1/2–IN. INTO MAIN BODY OF CORD. PULLED FILAMENTS NEED NOT BE WORKED BACK INTO CARRIER LINES
4 	FRAYED CARRIER	NOT REASON FOR REJECTION UNLESS CARRIER BECOMES RUPTURED
5 	SINGLE CARRIER LINE EXTENDING	NOT REASON FOR REJECTION; NORMAL PROCESS FOR MANUFACTURE OF CORD. WORK INTO MAIN BODY OF CORD. IF CARRIER IS BROKEN REFER TO RUPTURE ABOVE
6 	WEAVE SEPARATION	WORK CORD TO ACHIEVE NORMAL WEAVE

6.2-5676

Figure 4. Repair of Suspension Lines For A/P-24S-24, A/P28S-28, -30, AND -31

d. Lay damaged area with the inside facing up on a padded table or ironing board. Pin damaged area flat to end wrinkles and baste inside patch to outlined area. The raw edges of patch shall be turned under 1/2-in. Lockstitch patch, using one row of stitching around edge of patch, (Figure 5). Stitching around edge of patch shall be continuous.

e. When applying outside patch, lay damaged area with outside facing up on a padded table or ironing board. Pin damaged area flat to end wrinkles and baste patch directly over inside patch. The raw edges of patch shall be turned under 1/2-in. Lockstitch patch, using two rows of stitching around edges of patch (Figure 5). Stitching around edges of patch shall be continuous. (QA)

f. Document repairs on canopy damage chart WP 003 00. (QA)

24. REPAIR OF SUSPENSION LINE.

a. Suspension line repair is performed per Figure 3.

25. REPAIR OF SUSPENSION LINE FOR A/P28S-24, -28, -30, -31, AND -32.

a. Suspension line repair is limited to that shown in Figure 4.

26. REMOVAL OF DIPS AND TWISTS.

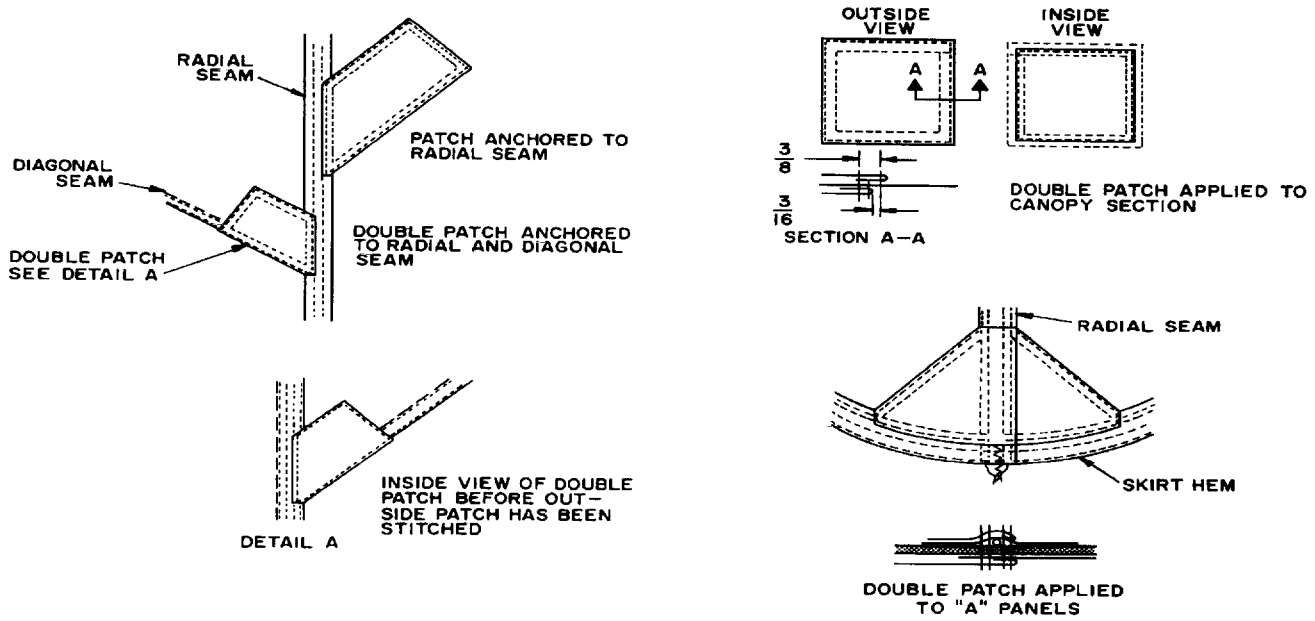
a. Unwinding suspension line group twists by revolving line groups in opposite directions of twists.

b. Remove dips and twists as follows:

(1) Lift number 1 line at skirt hem with one hand and walk down to connector link. Form a loop of all suspension lines around the hand, holding the single line by placing all lines that go over the line over the arm, and those that pass under the line, under the arm.

(2) Pass connector links thru loop formed in sub-step (1).

(3) Continue above procedure with remaining lines until all dips are removed. (QA)



6.2-5085

Figure 5. Double Patching Canopy

27. REPLACEMENT OF CONNECTOR LINK.

Support Equipment Required

Part Number	Nomenclature
Refer to WP 005 00	Temporary Locking Pin
—	Screwdriver, Torque

Materials Required

Specification or Part Number	Nomenclature
F-900 Torque Seal (Color Optional)	Sealing Compound

a. Inspect replacement connector link for proper part number, corrosion, distortion dents, nicks, burrs, cracks, sharp edges, and defective yoke and plate assembly.

b. Remove connector link yoke and plate assembly.

c. Slide suspension lines onto a temporary locking pin or rod.

d. Slide riser loop off connector link bar.

e. Reinstall suspension lines on new connector link bar. Ensure that connector link bar slides thru lines so that when yoke and plate assembly will face outboard.

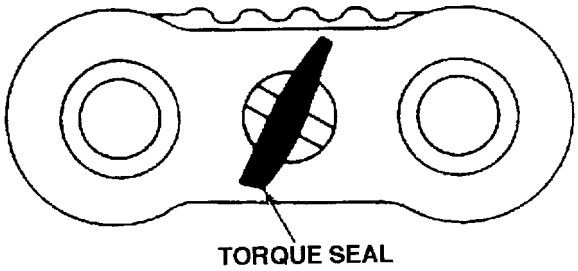
f. Slide riser loop onto connector link bar.

g. Ensure yoke and plate assembly facing outboard and the knurled portion faces up.

h. Check suspension line continuity.

i. Loosen screw then tighten screw to a torque value of 20 to 25 in-lbs. (QA)

j. Apply a torque seal to screwhead (Figure 6). (QA)



6.2-5086

Figure 6. Replacement of Connector Link Torque Seal

28. REPLACEMENT OF CONNECTOR LINK TORQUE SEAL.

Support Equipment Required

Part Number	Nomenclature
—	Screwdriver, Torque

Materials Required

Specification or Part Number	Nomenclature
F-900 Torque Seal (Color Optional)	Sealing Compound

a. Remove torque seal from screwhead.

b. Check that yoke and plate assembly is installed with knurled portion up and screwhead facing outboard.

c. Loosen screw, then tighten screw to a torque value of 20 to 25 in-lbs. (QA)

d. Apply torque seal to screwhead (Figure 6). (QA)

29. FABRICATION OF FOUR-LINE RELEASE FLUTE.

Materials Required

Specification or Part Number	Nomenclature
PIA-W-4088	Webbing, Nylon, Type XII, Class 1, 1A or 2
V-T-295	Thread, Nylon, Size E, Type I or II, Class A

a. Cut a 7-in. length of Type XII webbing and sear ends (avoid sharp edges).

b. Fold back each end of webbing 1-in. and sew 1/8-in. from ends and edges (Figure 7).

c. Fold webbing lengthwise and align edges. Sew edges together 1/8-in. from edge (Figure 7).

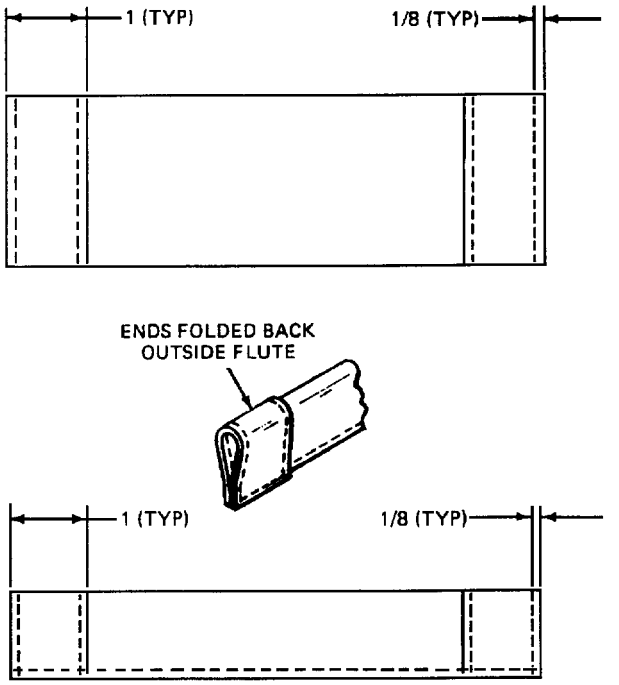


Figure 7. Four-Line Release Flute Fabrication

30. REPLACEMENT OF FOUR-LINE RELEASE FLUTE.

Support Equipment Required

Part Number	Nomenclature
Refer to WP 005 00	Temporary Locking Pin

Materials Required

Specification or Part Number	Nomenclature
F-900 Torque Seal (Color Optional)	Sealing Compound
V-T-295	Thread, Nylon, Size E, Type I or II, Class A
V-T-295	Thread, Nylon, Size FF, Type I or II, Class A

NOTE

Tie off all tackings with a surgeon's knot topped with a square knot, followed with a binder knot per WP 002 00. Trim off excess leaving 1/2-in.

a. Insert a temporary locking pin in last daisy chain loop to prevent inadvertent release of daisy chain.

b. Carefully break tackings at top of flute and pull lanyard pull loop up thru flute.

c. Remove connector link yoke and plate assembly from each connector link. Remove riser from connector links.

d. Loosely reattach connector link yoke and plate assembly.

e. Install new flute on front inboard side of rear riser (Figure 8) and machine stitch to riser with one row of size E thread.

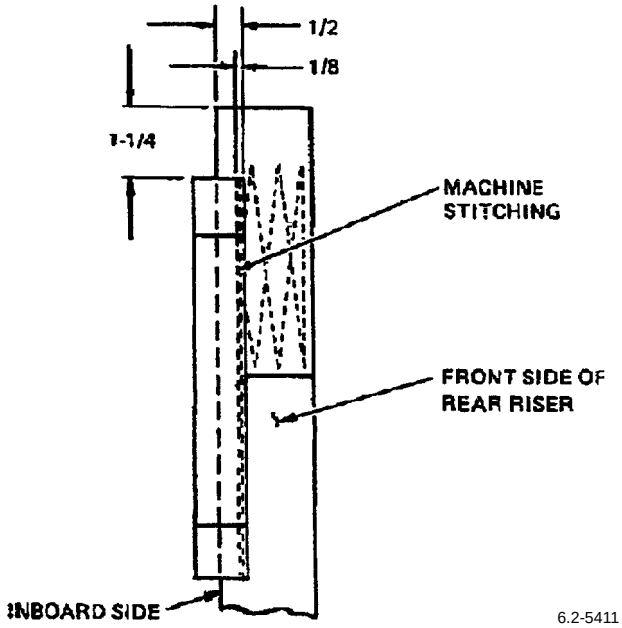


Figure 8. Four-Line Release Flute Installation

f. Lay out harness and container on packing table with corresponding risers facing each other and positioned at connector links. An aircrew wearing the harness would be positioned head toward canopy and facing packing table.

g. Remove yoke and plate assemblies from connector links. Slide harness riser loops onto connector link bars.

h. Attach yoke and plate assemblies to connector link bars so that knurled portions face up.

i. Check suspension line continuity. (QA)

j. Tighten screws on yoke and plates to a torque value of 20 to 25 in-lbs. (QA)

k. Apply torque seal to screwhead.

l. Using a bodkin or equal tool, insert and pull release lanyard pull loops thru flutes. Pull loops should extend completely thru flutes with tops of loops butted up against lower edge or flute.

m. Tack release lanyard to flute with one turn of size FF thread, single and waxed. There should be 1/8-in. between first flute entry and return flute entry. Tacking shall pass thru outer cover of flute, thru release lanyard, thru and around last daisy chain loop and then back thru flute; tie off (Figure 9).

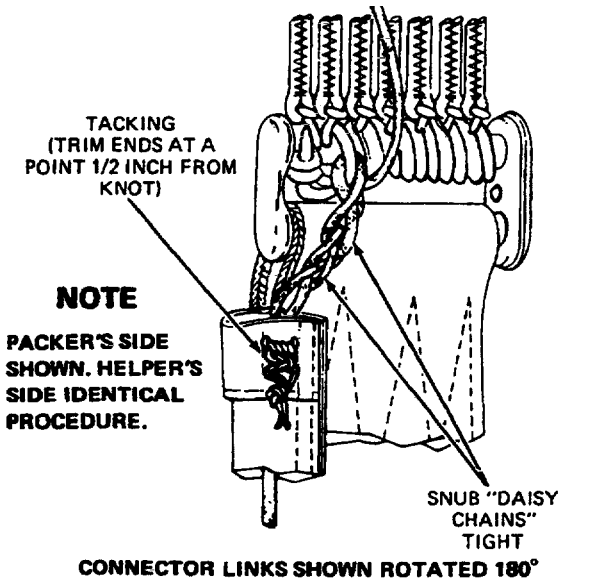


Figure 9. Tie Off Tacking

n. With lanyard pull loop fully extended, tack risers together. Tack at center of riser and 1/2-in. above bottom of lanyard pull loop with one turn of size FF thread, single and waxed; tie off (Figure 10).

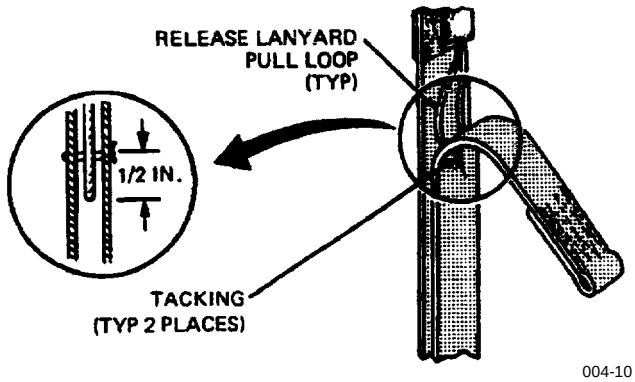


Figure 10. Tack Risers Together

31. REPLACEMENT OF FOUR-LINE RELEASE PULL LOOP TACKING.

Material Required

Specification or Part Number	Nomenclature
V-T-295	Thread, Nylon, Size FF, Type I or II, Class A

NOTE

Tie off all tackings with a surgeon's knot topped with a square knot, followed with a binder knot per WP 002 00. Trim off excess leaving 1/2-in.

a. Completely remove loose or broken tacking, and ensure daisy chain remains properly constructed and snug.

b. With lanyard pull loop fully extended, tack risers together. Tack at center of risers and 1/2-in. above bottom of lanyard pull loop with one turn of size FF thread, single and waxed. Tie off (Figure 10).

32. REMOVAL AND REINSTALLATION OF SUSPENSION LINES FOR PROPER SEQUENCING.

Support Equipment Required

Part Number	Nomenclature
Refer to WP 005 00	Temporary Locking Pin

Materials Required

Specification or Part Number	Nomenclature
F-900 Torque Seal (Color Optional)	Sealing Compound

a. Remove old torque seal and connector link yoke and plate assembly.

b. Slide suspension lines onto a temporary locking pin or rod.

CAUTION

Ensure clove-hitch and half-hitch at ends of suspension lines do not separate during handling.

c. Sequence lines on connector link bar.

d. Attach yoke and plate assembly to connector link so knurled portion faces up and screwheads face outboard.

e. Check suspension line continuity.

f. Tighten screw on yoke and plate assembly to a torque value of 20 to 25 in-lbs. (QA)

g. Apply torque seal to screwhead.

33. FABRICATION OF FOUR-LINE RELEASE LANYARD FOR THE NC-3, NB-7, -8, NES-12, AND -25A.

Materials Required

Specification or Part Number	Nomenclature
PIA-C-5040	Cord, Nylon, Type III
V-T-295	Thread, Nylon, Size E, Type I or II, Class A

a. Cut a 79-in. length of Type III nylon cord.

b. Fold back one end of cord 14 3/4-in. Align cords and, starting 1/2-in. from folded end, machine stitch cord together using zig zag stitching until 1 1/2-in. of cord remains unsewn (Figure 11).

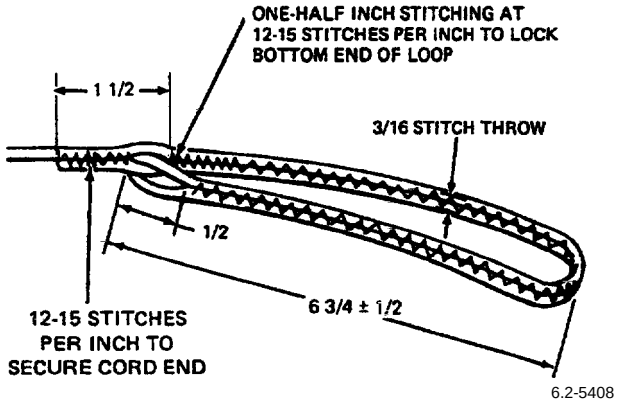


Figure 11. Four-Line Release Lanyard Fabrication

c. Insert the 1 1/2-in. length of remaining cord into 1/2-in. loop formed in above step to form a pull loop.

d. Secure pull loop together by machine zigzag stitching the 1 1/2-in. cord length to remainder of lanyard using 12 to 15 stitches per inch (Figure 1).

34. FABRICATION OF FOUR-LINE RELEASE LANYARD FOR THE NES-8B.

Materials Required

Specification or Part Number	Nomenclature
PIA-C-5040	Cord, Nylon, Type III
V-T-295	Thread, Nylon, Size E, Type I or II, Class A

a. Cut a 86 3/4-in. length of Type III nylon cord.

b. Fold back one end of cord 14 3/4-in. Align cords and, starting 1/2-in. from folded end, machine stitch cord together using zigzag stitching until 1 1/2-in. of cord remains unsewn (Figure 11).

c. Insert the 1 1/2-in. length of remaining cord into 1/2-in. loop formed in above step to form a pull loop.

d. Secure pull loop together by machine zigzag stitching the 1 1/2-in. cord length to remainder of lanyard using 12 to 15 stitches per inch (Figure 1).

35. FABRICATION OF FOUR-LINE RELEASE LANYARD FOR THE NES-14.

Materials Required

Specification or Part Number	Nomenclature
PIA-C-5040	Cord, Nylon, Type III
V-T-295	Thread, Nylon, Size E, Type I or II, Class A

a. Cut a 92-in. length of Type III nylon cord.

b. Fold back one end of cord 14 3/4-in. Align cords and, starting 1/2-in. from folded end, machine stitch cord together using zig zag stitching until 1 1/2-in. of cord remains unsewn (Figure 11).

c. Insert the 1 1/2-in. length of remaining cord into 1/2-in. loop formed in above step to form a pull loop.

d. Secure pull loop together by machine zigzag stitching the 1 1/2-in. cord length to remainder of lanyard using 12 to 15 stitches per inch (Figure 1).

e. Finished length after fold back is 72 ± 1/2-in.

36. REMOVAL, INSTALLATION AND REPLACEMENT OF FOUR-LINE RELEASE LANYARD.

Support Equipment Required

Part Number	Nomenclature
Refer to WP 005 00	Bodkin

Materials Required

Specification or Part Number	Nomenclature
666AS101	Lanyard, Four-Line Release
V-T-295	Thread, Nylon, Size E, Type I or II, Class A

NOTE

Tie off all tackings with a surgeon's knot topped with a square knot, followed with a binder knot per WP 002 00. Trim off excess leaving 1/2-in.

a. Carefully remove defective release lanyard from anchor loop. Remove four-line release rigging and remove lanyard.

b. Ensure the proper length of replaced release lanyard is; (NC-3 57 1/2 ± 1/2-in.), (NB-7, -8, NES-12, -25 591/2 ± 1/2-in.), (NES-8B 65 3/4 ± 1/2-in.) and (NES-14 72 ± 1/2-in. measured from end of pull loop to end of lanyard.

c. Remove and cut 7-in. of inner core from end of release lanyard.

d. Mark lanyard 4-in. from end with a grease pencil.

e. Pass free end of lanyard thru anchor loop (Figure 12).

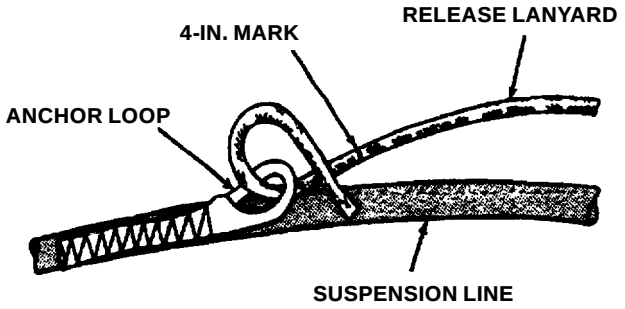


Figure 12. Pass Free End Thru Loop

f. Insert small bodkin or needle thru one wall of coreless section of lanyard 1-in. down from 4-in. mark. Repuncture cord with bodkin or needle protruding at 4-in. mark (Figure 13).

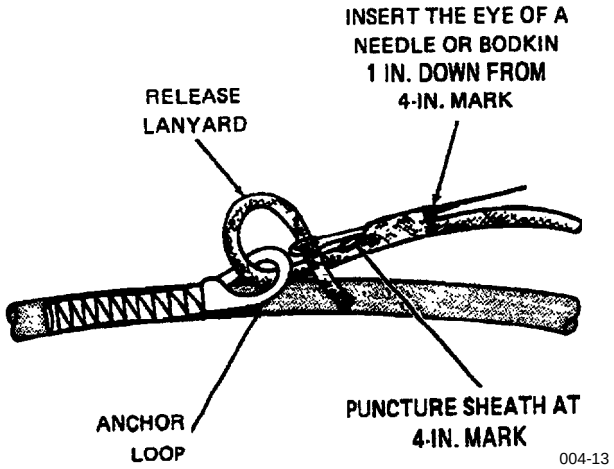


Figure 13. Insert Small Bodkin

g. Insert free end of lanyard thru bodkin or needle and carefully pull coreless line thru sleeve; leave about 1/2-in. loop at loose end. Remove bodkin or needle and tie a half-hitch knot at point where line comes thru sheath (Figure 14).

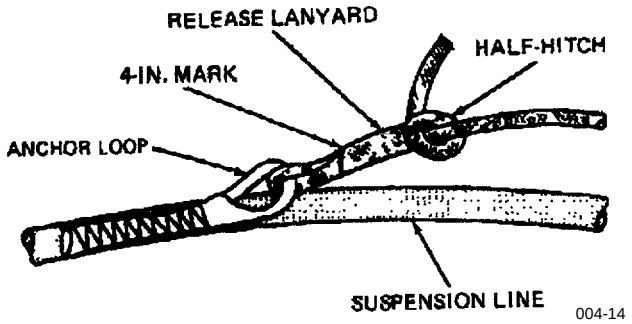


Figure 14. Insert Free End

h. Insert bodkin or needle at core end of lanyard and repuncture cord just below half-hitch knot. Insert loose end of coreless line thru bodkin or needle and carefully pull excess line thru sheath. Remove bodkin or needle and hand tack cords together with two turns of size E thread, single and waxed; tie off (Figure 15). Trim excess. (QA)

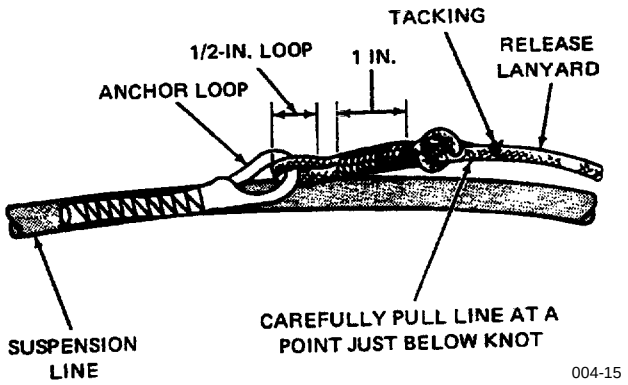


Figure 15. Insert Bodkin at Core End

i. Using a bodkin or equal tool, insert and pull release lanyard pull loop thru flute. Pull loop should extend completely thru flute with top of loops butted up against lower edge of flute.

j. Measure 30-in. down from 4-in. point on lanyard and mark with grease pencil. (QA)

NOTE

Correct distance between 4-in. mark and 30-in. mark is important for proper rigging.

k. Rig four-line release lanyard per Paragraph 38.

37. REPAIR OF FOUR-LINE RELEASE LANYARD ANCHOR LOOP.

Materials Required

Specification or Part Number	Nomenclature
V-T-295	Thread, Nylon, Size E, Type I or II, Class A

NOTE

Tie off all tackings with a surgeon's knot topped with a square knot, followed with a binder knot per WP 002 00. Trim off excess leaving 1/2-in.

a. If anchor loop zigzag stitching is found unraveling, repair as follows:

(1) Trim off loose thread.

(2) Using one turn of size E thread, single and waxed tack each end of zigzag stitching. Tie off.

38. RIGGING OF FOUR-LINE RELEASE LANYARDS FOR THE NC-3, NB-7, -8, AND NES-25.

Support Equipment Required

Part Number	Nomenclature
Refer to WP 005 00	Bodkin

Materials Required

Specification or Part Number	Nomenclature
V-T-295	Thread, Nylon, Size FF, Type I or II, Class A

NOTE

Tie off all tackings with a surgeon's knot topped with a square knot, followed with a binder knot per WP 002 00. Trim off excess leaving 1/2-in.

a. Place parachute canopy under slight tension on packing table.

b. Ensure that release lanyard is free of any entanglement with suspension lines.

c. Rotate top right risers 180-degrees clockwise and top left risers 180-degrees counterclockwise.

d. Using a bodkin or equal tool, insert and pull release lanyard pull loops thru appropriate lanyard flute. Pull loops should extend completely thru flute with top of loops butted up against lower edge of flute.

e. Remove top connector links from tension hooks and position lines 1 and 2 or 27 and 28, as applicable, on top of upper connector link bar, insert lines between bars ensuring continuity is maintained and lanyard remains free of dips and twists. Holding lines in place, rotate top connector links outboard so inside of riser strap with flute faces up.

f. Make two twists in ends of lines 1 and 2 or 27 and 28 as applicable (Figure 16).

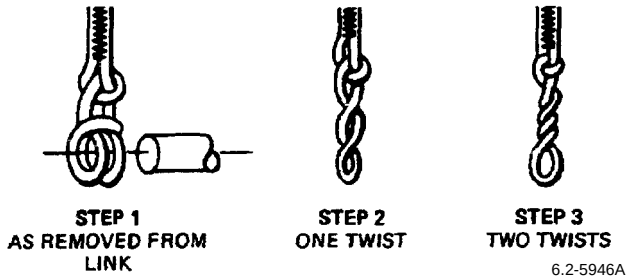


Figure 16. Make Two Twists

NOTE

Do not allow 30-in. mark on release lanyard to be positioned below upper connector link bar after daisy chains have been completed. This will ensure that 30-in. of release lanyard extend above connector links and that slack is present in lanyard as compared to line 3 and 26.

g. With the 30-in. mark positioned at upper connector link bar, form a 3 to 4-in. bight in release lanyard between top of the flute and the 30-in. mark.

h. While maintaining two twists in suspension line ends, route bight in lanyard thru lines 1 and 2 or 27 and 28 as applicable (Figure 17).

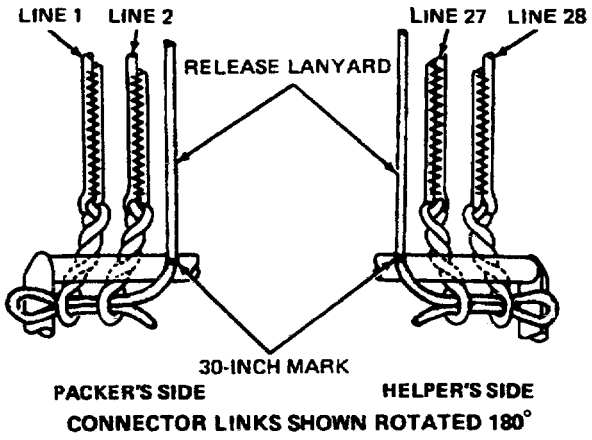


Figure 17. Maintaining Two Twists

i. Route release lanyard bight over upper connector link bar and then thru lines 1 and 2 or 28 and 27 as applicable (Figure 18).

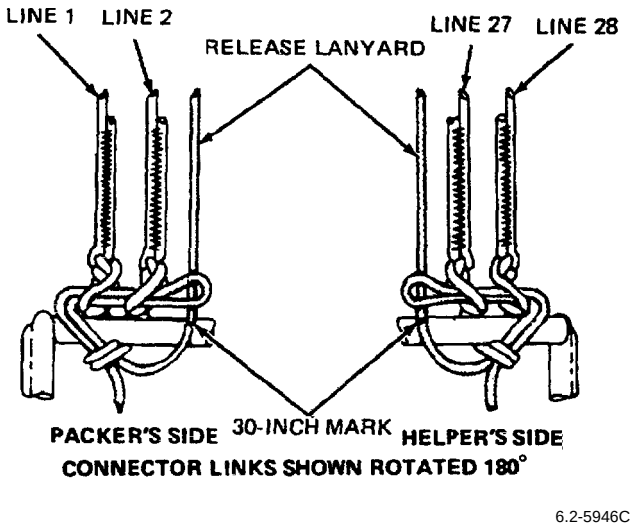


Figure 18. Route Release Lanyard

j. With 30-in. mark positioned at upper connector link bar, construct first daisy chain loop. Form a bight in remaining slack of release lanyard and insert it thru small loop of bight which was routed thru lines 1 and 2 or 27 and 28 (Figure 19).

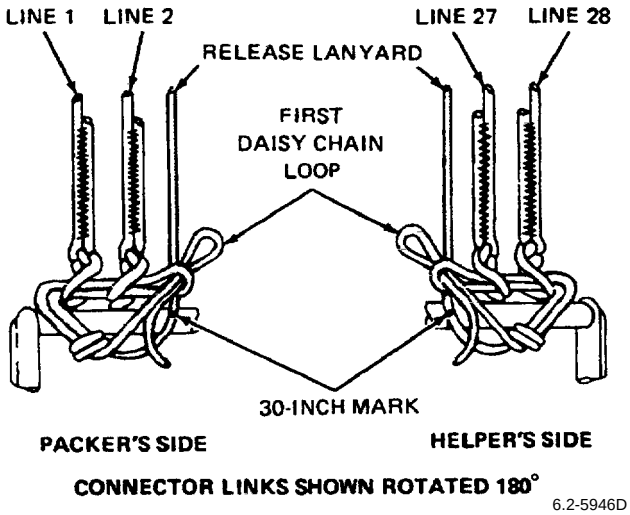


Figure 19. 30-in. Mark Position

k. Continue to form additional daisy chain loops as in step j. Use all available slack in release lanyard between top of flute and 30-in. mark (Figure 20).

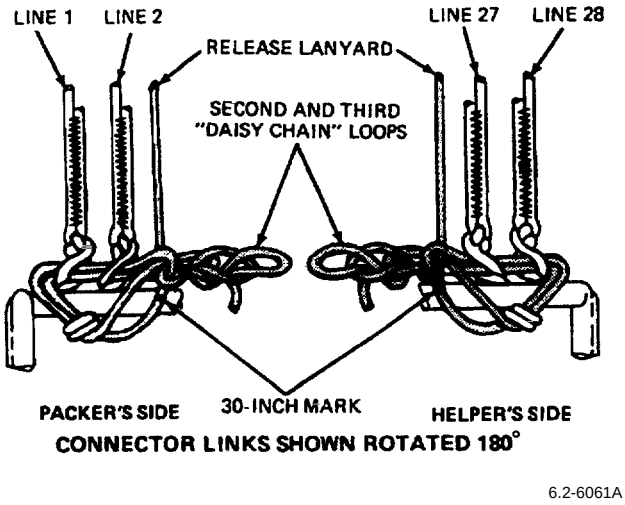


Figure 20. Continue to Form Additional Daisy Chain Loops

l. Tack release lanyard to flute with one turn of size FF thread, single and waxed. There should be 1/8-in. between first flute entry and return flute entry. Tacking shall pass thru the release lanyard, thru and around last daisy chain loop and then back thru flute (Figure 21). (QA)

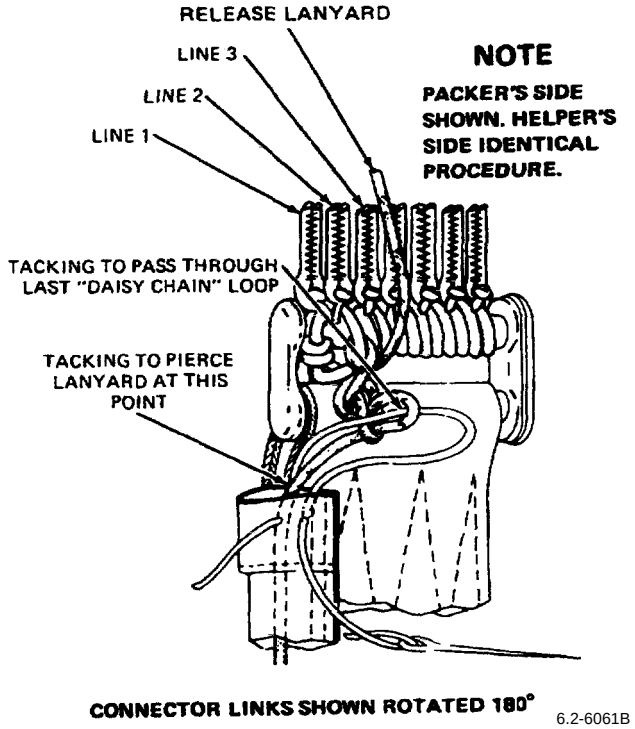


Figure 21. Tack Release Lanyard to Flute

m. Tie off tacking and trim ends at a point 1/2-in. from knot (Figure 22).

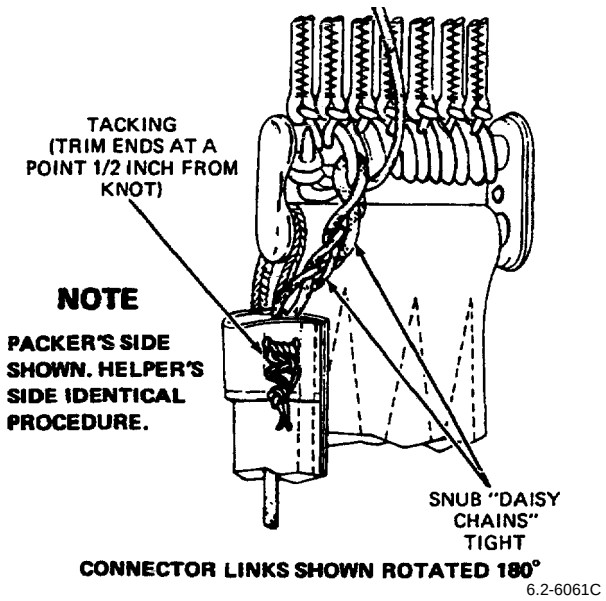


Figure 22. Tie Off Tacking

n. Fully extend lanyard pull loops.

o. Tack risers together at center of riser and 1/2-in. Above bottom of lanyard pull loop with one turn of size FF thread, single and waxed. Tie off (Figure 23).

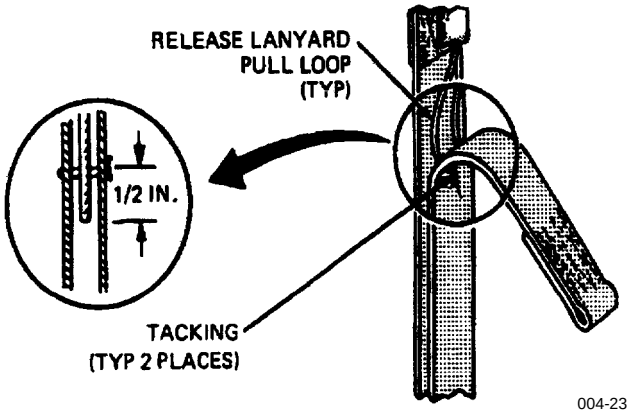


Figure 23. Tack Risers Together

p. Rotate riser straps back to original position and reinstall connector links on tension hooks and then into respective holes in packing table. Pull canopy taut and check suspension line continuity. (QA)

39. RIGGING OF FOUR-LINE RELEASE LANYARDS FOR THE NES-8B, -12 AND -14.

Support Equipment Required

Part Number	Nomenclature
Refer to WP 005 00	Bodkin

Materials Required

Specification or Part Number	Nomenclature
V-T-295	Thread, Nylon, Size FF, Type I or II, Class A

NOTE

Tie off all tackings with a surgeon's knot topped with a square knot, followed with a binder knot per WP 002 00. Trim off excess leaving 1/2-in.

a. Place parachute canopy under slight tension on packing table with lines 1, 2, 28, and 27 removed from connector links.

b. Remove top risers from tension hooks and place outboard of bottom risers.

c. Ensure that release lanyard is free of any entanglement with suspension lines.

d. Using a bodkin or equal tool, insert and pull release lanyard pull loops thru proper lanyard flute. Pull loops should extend completely thru flute with top of loops butted up against lower edge of flute.

e. Make two twists in ends of lines 1 and 2 or 27 and 28 as applicable (Figure 24).

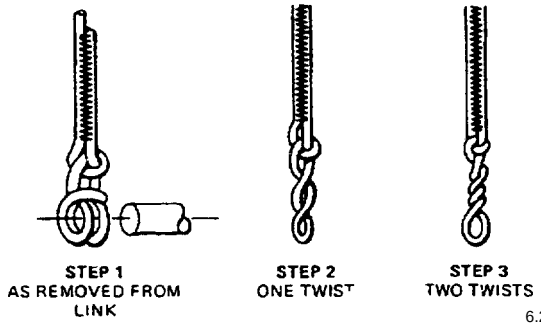


Figure 24. Make Two Twist

f. Remove bottom links from tension hooks and position lines 1 and 2 or 27 and 28, as applicable, under bottom of connector link bar. Insert lines between bars ensuring that continuity is maintained and lanyard remains free of dips and twists.

NOTE

Do not allow the 30-in. mark on the release lanyard to be positioned below the upper connector link bar after the daisy chains have been completed. This will ensure that 30-in. of release lanyard extend above the connector links and that slack is present in the lanyard as compared to lines 3 and 26.

g. With the 30-in. mark positioned at the upper connector link bar, form a 3 to 4-in. bight in release lanyard between the top of the flute and the 30-in. mark.

h. While maintaining two twists in suspension line ends, route bight in lanyard thru lines 2 and 1 or 27 and 28 as applicable (Figure 25).

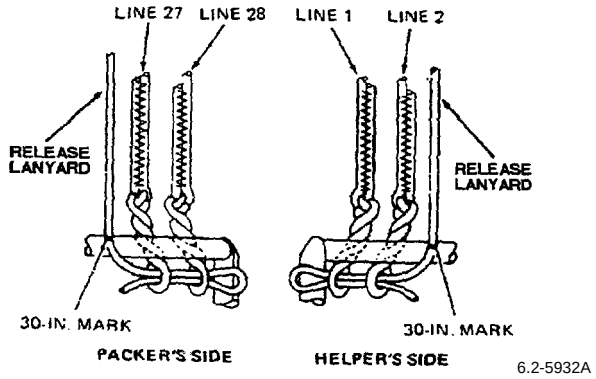


Figure 25. Maintaining Two Twist

i. Route release lanyard bight over upper connector link bar and then thru lines 1 and 2 or 28 and 27 as applicable (Figure 26).

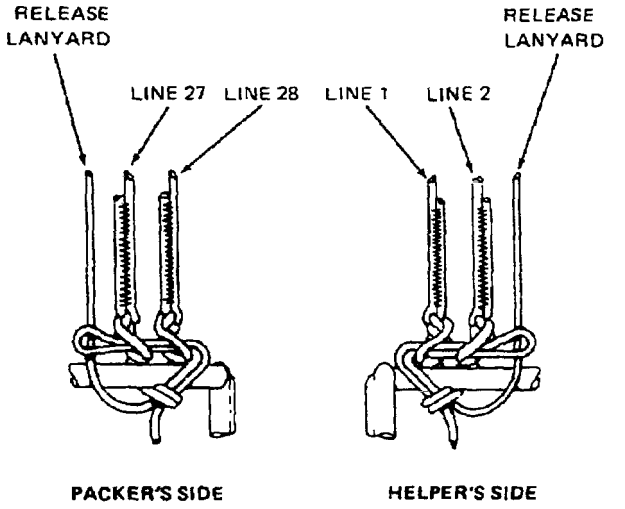


Figure 26. Route Release Lanyard

j. With 30-in. mark positioned at upper connector link bar, construct first daisy chain loop. Form a bight in remaining slack of release lanyard and insert it thru small loop of bight which was routed thru lines 1 and 2 or 27 and 28 (Figure 27).

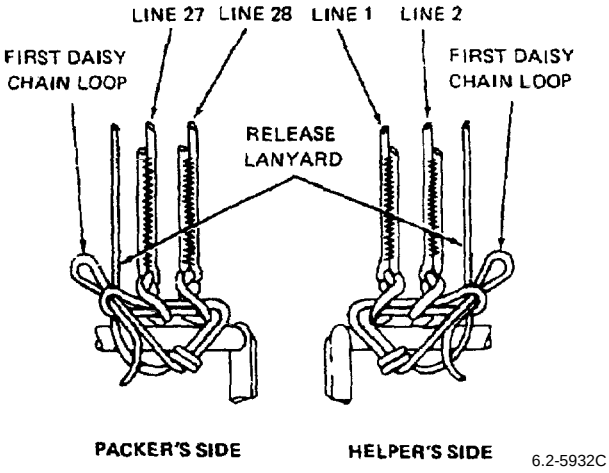


Figure 27. 30-in. Mark Position

k. Continue to form additional daisy chain loops as in step j. Use all available slack in release lanyard between top of flute and 30-in. mark (Figure 28).

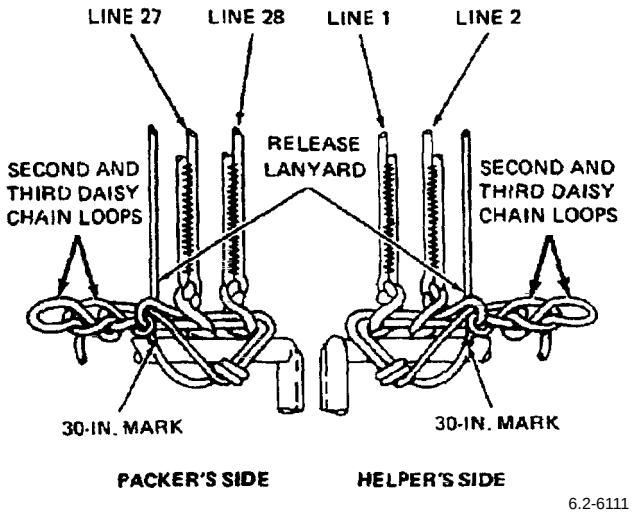


Figure 28. Continue to Form Additional Daisy Chain Loops

l. Tack release lanyard to flute with one turn of size FF thread, single and waxed. There should be 1/8-in. between first flute entry and return flute entry. Tacking shall pass thru outer cover of flute, thru the release lanyard, thru and around last daisy chain loop, and then back thru flute (Figure 29). (QA)

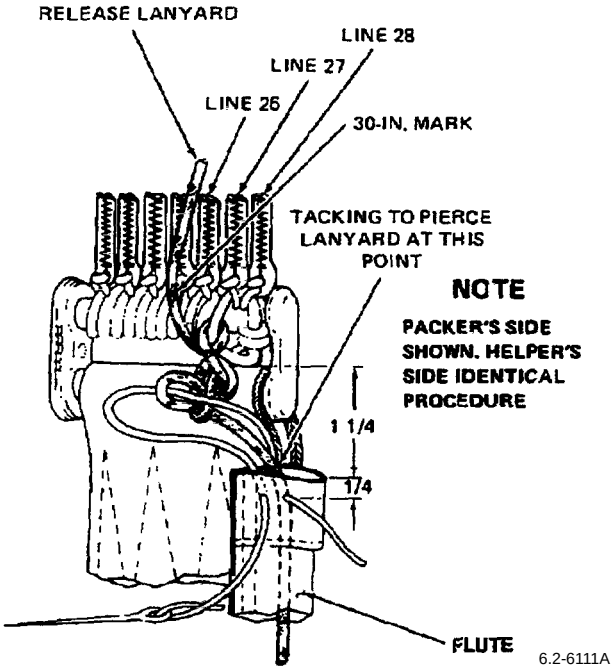


Figure 29. Tack Release Lanyard to Flute

m. Tie off tacking and trim ends at a point 1/2-in. from knot (Figure 30).

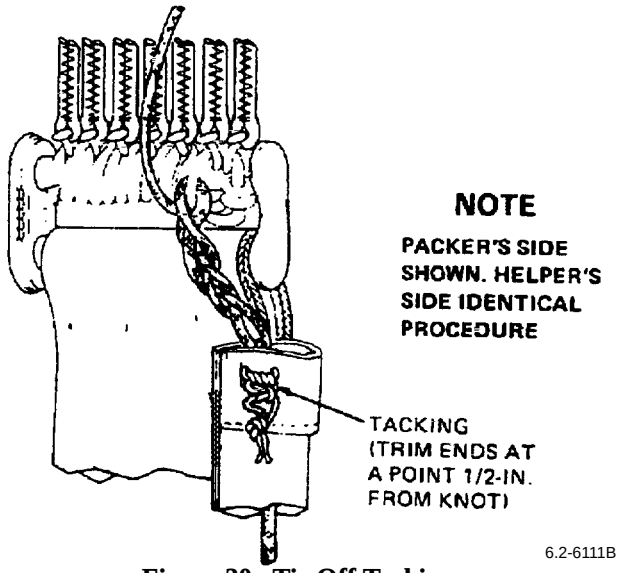


Figure 30. Tie Off Tacking

n. Fully extend lanyard pull loops.

o. Tack risers together at center of riser and 1/2-in. above bottom of lanyard pull loop with one turn of size FF thread, single and waxed; tie off (Figure 31).

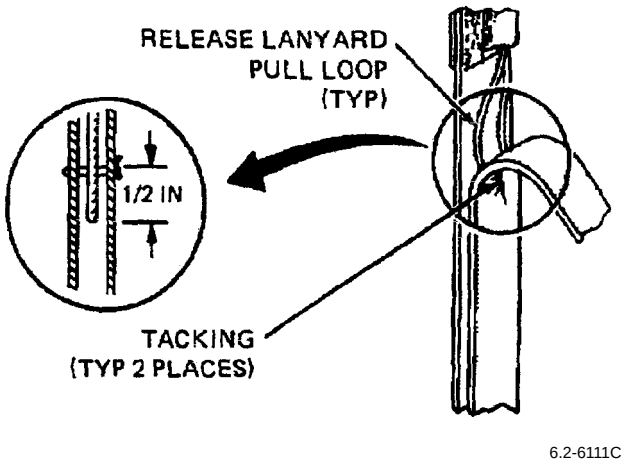


Figure 31. Tack Risers Together

p. Rotate riser straps back to original position and reinstall connector links on tension hooks and then into respective holes in packing table. Pull canopy taut and check suspension line continuity. (QA)

40. REPLACEMENT OF FOUR-LINE RELEASE LANYARD FLUTE TACKING.

Materials Required

Specification or Part Number	Nomenclature
V-T-295	Thread, Nylon, Size FF, Type I or II, Class A

NOTE

Tie off all tackings with a surgeon's knot topped with a square knot, followed with a binder knot per WP 002 00. Trim off excess leaving 1/2-in.

a. Completely remove loose or broken tacking, and ensure daisy chain remains properly constructed and snug.

b. Tack release lanyard to flute with one turn of size FF thread, single and waxed. Tacking shall pass thru outer cover cover of flute, thru the release lanyard, thru and around last daisy loop, and then back thru flute. Tie off.

41. CONTAINER ASSEMBLY REPAIRS.

a. Repair of the container assembly is limited to the following:

(1) Cleaning of contaminated areas.

(2) Replacement of grommets, locking cones, snap fasteners, and eyes.

(3) Repair of loose or broken stitching, holes, tears, and seam separations.

(4) Replace protective container cover on NES-12.

b. Replace container for any of the following:

(1) Service/total life has expired per applicable personnel parachute assembly.

(2) Broken or distorted container stiffeners.

(3) Deterioration, fading, abrasion, or excessive contamination.

42. REPAIR OF LARGE HOLES, TEARS, OR SNAGS.

Materials Required

Specification or Part Number	Nomenclature
V-T-295	Thread, Nylon, Size E, Type I or II, Class A
PIA-C-7219	Cloth, Nylon, Type III, Class 3

NOTE

Container material used shall be same as type used to construct container.

a. Cut patch large enough to fully cover damaged area, overlap 3/4 to 1-in., and allow for edge to be turned under 1/2-in.

b. Place patch over damage and fold edges of patch under 1/2-in. Sew into rows, using size E thread, around edge of patch (Figure 32).

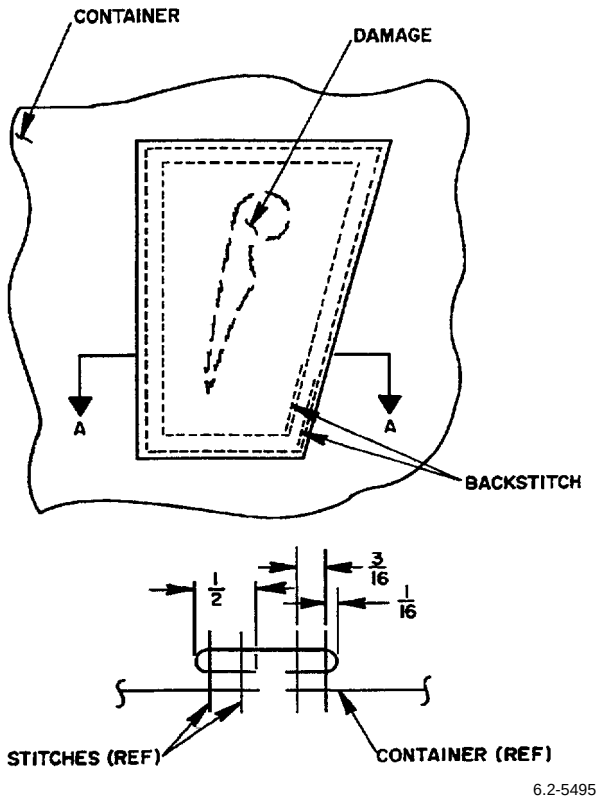


Figure 32. Repair of Large Holes, Tears or Snags

43. REPLACEMENT OF GROMMET AND WASHER ON CONTAINER CONE AND PANEL ASSEMBLY.

Support Equipment Required

Part Number	Nomenclature
PN A172 and PN A1721-2	Chuck and Die Set, 9/16-in.

Materials Required

Specification or Part Number	Nomenclature
MS22048GCI	Grommet
60A113C25-1	Washer
V-T-295	Thread, Nylon, Size E, Type I or II, Class A

a. Remove stitching from washer.

b. Cut crimped edge of grommet at three or four places.

c. Remove grommet and washer.

d. Install new grommet from outside of panel and then set grommet and washer in place with chuck and die.

e. Inspect crimped rolled edge of grommet for sharp edges. If sharp edges are present, repeat steps b, c and d.

NOTE

The washer will be machine stitched from inside of the container. Stitches will be made by manually moving sewing machine balance wheel. As an alternate to machine stitching, handstitching is permitted. If handstitching is used employ the same stitch pattern as in steps h thru i.

f. Set sewing machine at zero stitches per inch.

g. Remove power belt from balance wheel pulley.

h. Prior to starting, ensure enough thread is reserved for final tie off.

i. Stitch thru the nearest hole in washer. Continue stitching thru each hole in series.

j. Make one stitch outside the washer; then return to hole.

k. Make a stitch thru the following hole, then outside the washer; return to hole. Repeat this procedure two times around.

l. Continue sewing thru each hole until returning to starting point (Figure 33).

m. Ensure enough thread is reserved for tie off and then cut.

n. Pull threads thru to inside of panel and tie off with an overhand knot. Trim excess thread.

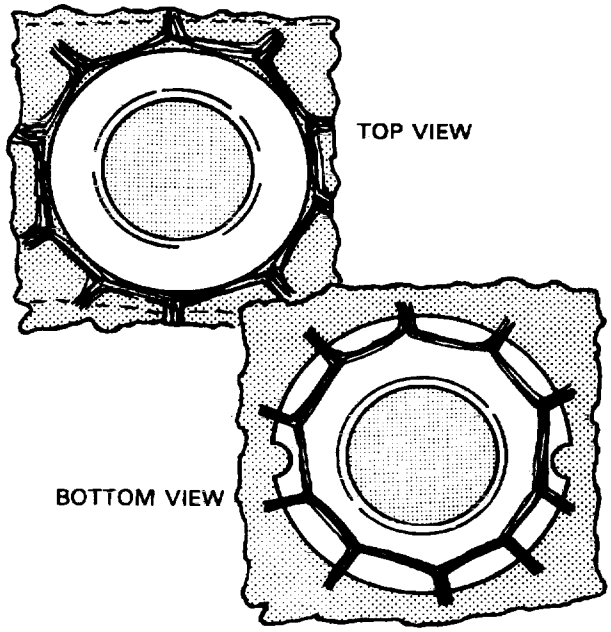


Figure 33. Installation of Grommet and Washer

44. REPLACEMENT OF GROMMET AND WASHER ASSEMBLY ON CONTAINER GROMMET PANEL ASSEMBLY.

Support Equipment Required

Part Number	Nomenclature
—	Chuck and Die Set, 7/16-in.

Materials Required

Specification or Part Number	Nomenclature
MS22048C	Grommet and Washer

a. Cut crimped edge of grommet at 3 or 4 places.

b. Remove gromet and washer.

c. Install new grommet from outside of panel, then set grommet and washer in place with chuck and die.

d. Inspect crimped rolled edge of grommet for sharp edges. If sharp edges are present, repeat steps a, b, and c.

45. REPLACEMENT OF LOCKING CONE ON CONTAINER AND PANEL ASSEMBLY OR BOTTOM FLAP.

Materials Required

Specification or Part Number	Nomenclature
V-T-295	Thread, Nylon, Size 3, Type I or II, Class A
60A116C16-1	Cone, 0.267 Grip

NOTE

Tie off all tackings with a surgeon's knot topped with a square knot, followed with a binder knot per WP 002 00. Trim off excess leaving 1/2-in.

a. Remove tacking retaining damaged cone to container.

b. If fabric retaining locking cone is damaged, repair per Paragraph 42, as applicable.

c. Position replacement locking cone in exact location of damaged or missing cone. Ensure that ripcord locking pin hole is aligned in same direction as that removed.

NOTE

During manufacturing, locking cone was sewn on before container was completely assembled; thus, original locking cone stitching is not visible on finished container. For repairs, it is permissible to sew thru panel with finished stitching present on inside of the panel.

d. Attach locking cone.

e. Using size 3 thread, doubled and waxed push tacking needle up thru panel and thru hole 1 until about 3-in. of thread remains below panel (Figure 34).

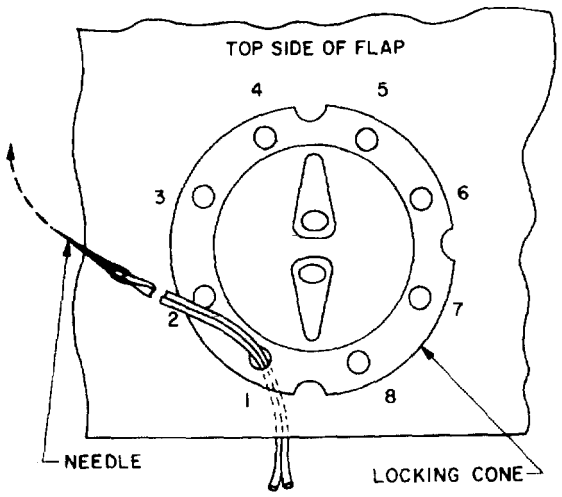


Figure 34. Start Thread Thru Panel

f. Working clockwise, pass needle down thru hole 2, up thru hole 3. Continue until all holes are threaded and needle passes up thru hole 1. Take up all slack in thread (Figure 35).

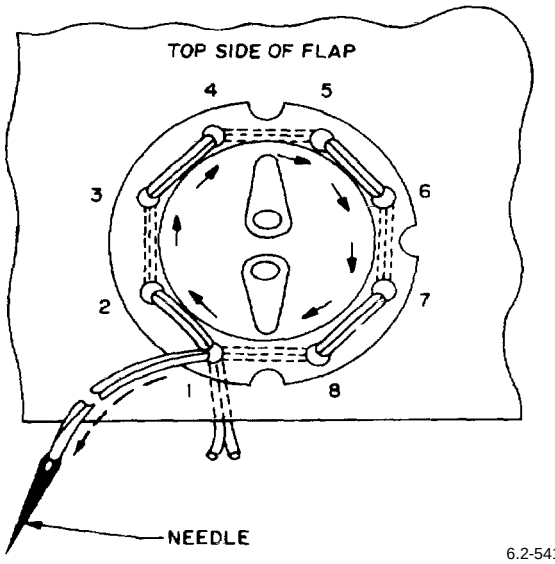


Figure 35. Working Clockwise Pass Needle Thru Hole 2

g. Working counterclockwise, pass needle down thru hole 8, up thru hole 7, continue until needle passes down thru hole 2. Take up all slack in thread (Figure 36).

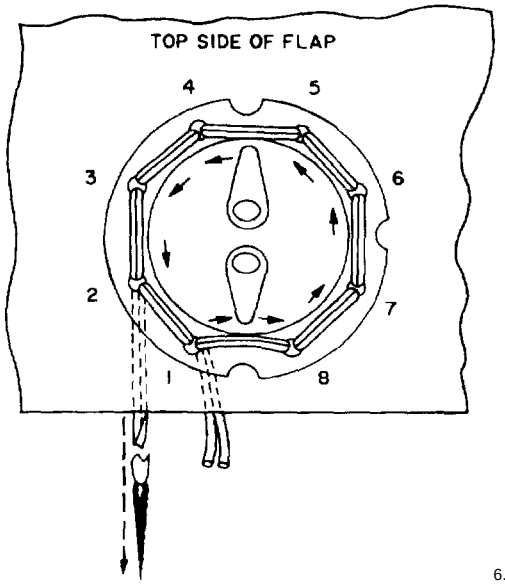


Figure 36. Working Counterclockwise Pass Needle Thru Hole 8

h. Pass needle up thru panel next to outside edge of locking cone, directly in front of hole 1.

i. Working clockwise, pass needle down thru hole 1, up thru panel in front of hole 2, down thru hole 2. Continue stitching in this manner until needle passes down thru hole 8. Take up all slack in thread (Figure 37).

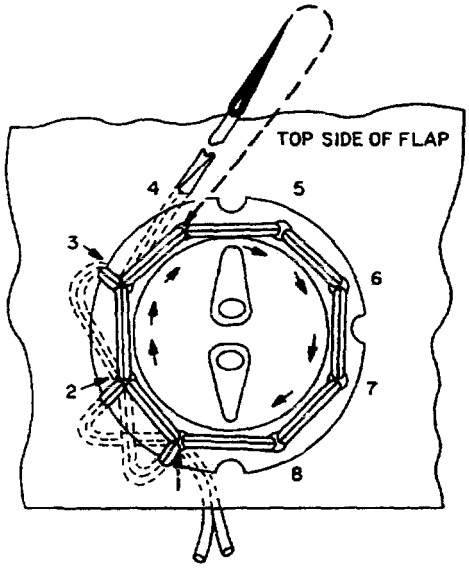


Figure 37. Working Clockwise Pass Needle Thru Hole 1

j. Tie ends of thread on inside of flap; tie off. Trim thread ends to within 1/4-in. of knots. Locking cone, directly in front of hole 1.

46. REPLACEMENT OF SNAP FASTENER.

Support Equipment Required

Part Number	Nomenclature
CAGE 57771	Chuck, Stud and Die, Eyelet,
	-or-
CAGE 57771	Chuck, Socket and Die, Button

Materials Required

Specification or Part Number	Nomenclature
MS27983-1	Fastener, Snap, Button
MS27980-8B	Fastener, Snap, Eyelet
MS27983-2N	Fastener, Snap, Socket
	-or-
MS27983-3	Fastener, Snap, Stud
PIA-T-5038	Webbing,Nylon, Type IV, Class 1 or 1A
V-T-295	Thread, Nylon, Size E, Type I or II, Class A

a. Remove damaged fastener using care not to damage webbing.

b. If material around hole has been damaged, cut a 1-in. piece of Type IV webbing and sew to underside of damaged area using a boxstitch pattern (Figure 1). For stitching, use size E thread. Backstitch 1/2-in.

c. Punch new hole if required.

NOTE

During manufacturing, fasteners on grommet panel were installed before container was completely assembled; thus, bottom of snap fastener stud is not visible on finished container. For repairs, permissible to install stud completely thru the panel.

d. Install new fastener.

47. REPLACEMENT OF EYE.

Materials Required

Specification or Part Number	Nomenclature
60A113C28-1	Eye
V-T-295	Thread, Nylon, Size E, Type I or II, Class A
V-T-295	Thread, Nylon, Size 3, Type I or II, Class A

NOTE

Tie off all tackings with a surgeon's knot topped with a square knot, followed with a binder knot per WP 002 00. Trim off excess leaving 1/2-in.

a. Remove damaged eye and thread.

NOTE

During manufacturing, eyes on cone and grommet panel were sewn on before container was completely assembled thus, stitching is not visible on inside of panels. For repairs, permissible to sew thru panels with finished stitching present on inside of each panel.

There are three holes provided in grommet stiffener for sewing each eye on grommet panel. Optional to machine stitch with size E thread, using nine single stitches per grouping in lieu of two turns doubled.

b. Sew replacement eye to container in stitch pattern shown in (Figure 38), with two turns of size 3 thread, doubled and waxed; tie off.

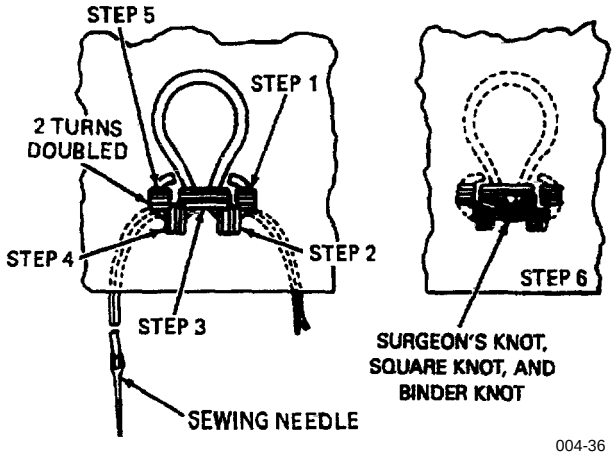


Figure 38. Eye Replacement

48. REPAIR OF LOOSE OR BROKEN CONTAINER STITCHING.

Materials Required

Specification or Part Number	Nomenclature
V-T-295	Thread, Nylon, Size E, Type I or II, Class A

a. Trim off only loose thread ends.

b. Machine stitch over loose or broken stitching on original stitch line. New stitch shall begin and extend 3/4-in. beyond affected area.

49. RIPCORD ASSEMBLY REPAIRS.

50. GENERAL.

a. Repair of the ripcord assembly is limited to the following:

(1) Cleaning contaminated areas per Paragraph 11.

(2) Replacement of loose or broken tackings.

b. Replace ripcord assembly for any of the following:

(1) Bent, broken, or cracked locking pins.

(2) Corroded, frayed, or permanently bent cable.

(3) Loose cable swage ball or housing ferrule.

(4) Corroded, cracked, or bent handle or housing.

51. REPLACEMENT OF RIPCORD ASSEMBLY.

a. Inspect replacement ripcord assembly per applicable personnel parachute assembly.

b. Replace ripcord assembly in the proper step of packing procedures.

52. SPREADING GUN REPAIRS.

a. Repair of spreading gun is limited to following:

(1) Replacement of spreading gun.

(2) Replacement of cartridge.

(3) Replacement of torque seal on plate screws.

(4) Replacement of retainer cord and/or tackings.

(5) Repair/replacement of safety pin assembly.

(6) Replacement of french spiral.

b. Replace spreading gun for the following:

(1) Service/total life per applicable personnel parachute assembly.

(2) Fails pull force check failed.

(3) Service life expires.

(4) Ball bearings unseat.

53. REPLACEMENT OF SPREADING GUN ASSEMBLY FOR THE NES-12, -25, A/P28S-28, -30 AND -31.

Support Equipment Required

Part Number	Nomenclature
ST86-0064-1	Test Fixture
56B9914	Torque Screwdriver
TSQ-050	Torque Meter
—	C-Clamp (2)
DPP-50	Scale, Spring

Materials Required

Specification or Part Number	Nomenclature
O-E-760	Alcohol, Denatured
PIA-C-5040	Cord, Nylon, Type III, 20 ft.
F-900 Torque Seal (Color Optional)	Sealing Compound
MIL-S-45180	Compound, Sealing, Type III

WARNING

The spreading gun employs an explosive cartridge. Failure to observe procedures in this paragraph could result in serious injury.

a. Replacement of the spreading gun assembly consists of removal of the cartridge and removal of the spreading gun from the canopy, followed by the pull force check, attachment of the spreading gun to the canopy and cartridge installation

54. REMOVAL OF SPREADING GUN CARTRIDGE.

WARNING

Safety pin must be installed in spreading gun.

NOTE

Use only special tools furnished for cartridge removal. A helper assist person doing the cartridge removal.

A firing pin pull force check shall be made each time the parachute assembly is packed.

a. Ensure safety pin is installed in spreading gun. (QA)

CAUTION

Cartridge extractor wrench surface must mate with cartridge. Resurface wrench if required.

b. Helper will place spreading gun on packing table, with cartridge opening in upright position and hold (Figure 39).

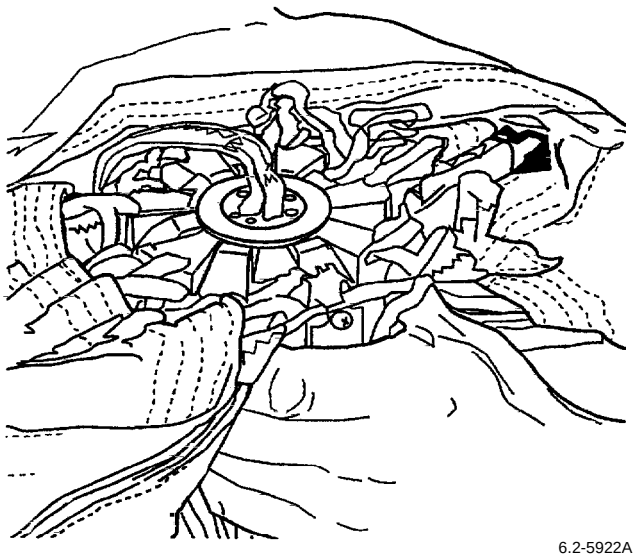


Figure 39. Positioning of Spreading Gun on Packing Table

c. Packer will place pins of cartridge extractor wrench in holes in cartridge. Loosen cartridge (Figure 40).

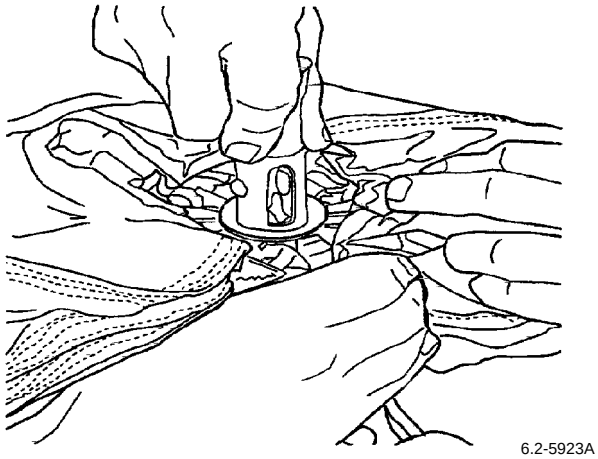


Figure 40. Placement of Cartridge Extractor Wrench

NOTE

Ensure that proper malfunction description code is recorded. If difficulty occurs in removal of cartridge using extractor wrench, request assistance of Explosive Ordnance Disposal (EOD) personnel.

d. Manually unscrew and remove cartridge from chamber.

e. Remove cartridge from retainer cord by removing pin. Retain pin for reinstallation.

f. Store cartridge per NAVAIR 11-100-1.1.

55. REMOVAL OF SPREADING GUN FROM CANOPY.

a. Loosen screws holding plates to spreading gun slugs a sufficient amount to allow suspension lines to be removed.

b. Slip all suspension lines and attached loops from under plates.

c. Remove spreading gun from canopy.

d. Attach free end of new retainer cord to old cord and pull both cords thru canopy apex. Remove old retainer line from apex and discard.

e. Attach new retainer cord to apex per Paragraph 57.

56. INSTALLATION OF PULL FORCE CHECK AND CARTRIDGE.

a. Clamp spreading gun test fixture to packing table (Figure 41). Use one C-clamp positioned as closely as possible to clamp assembly.

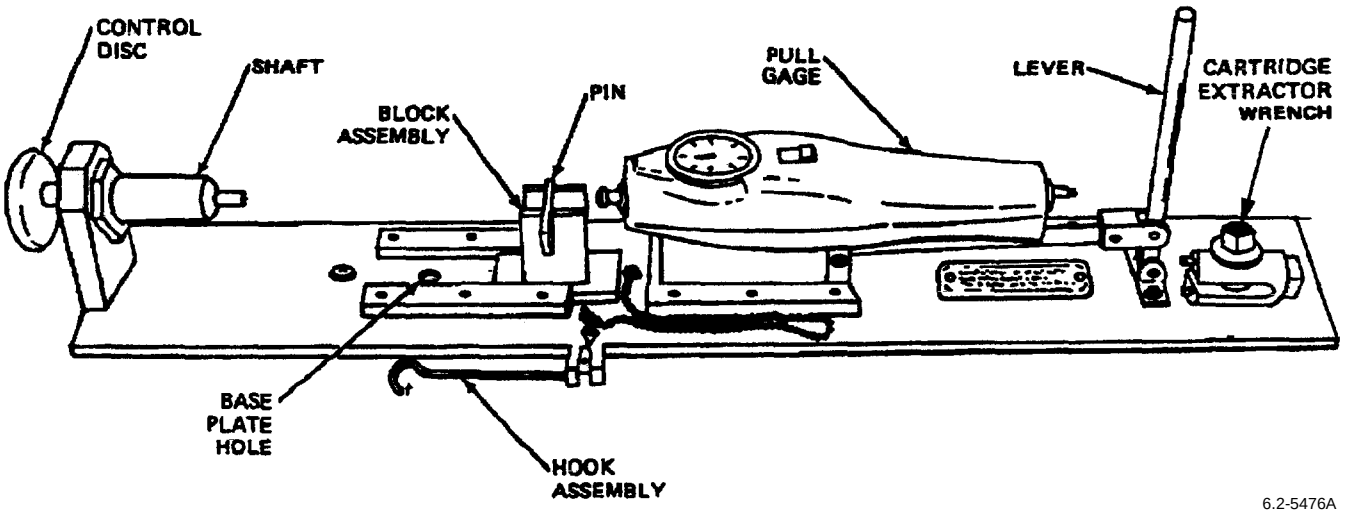


Figure 41. Spreading Gun Test Fixture

b. Examine replacement spreading gun chamber to ensure that no pistons are protruding into chamber and that no foreign matter is present.

c. Slide spreading gun onto test fixture so that shaft butts against bottom of cartridge chamber (Figure 42).

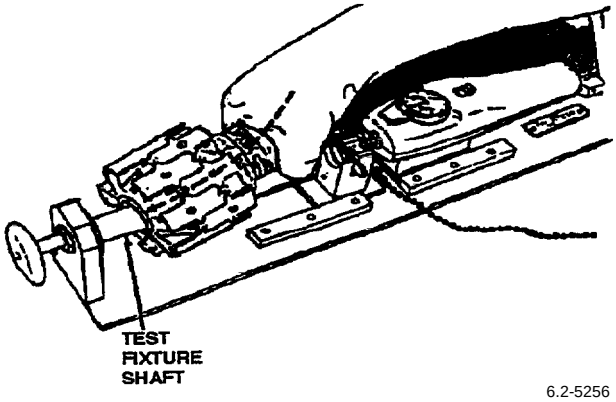


Figure 42. Slide Spreading onto Test Fixture

d. Open snap fasteners on spreading gun extractor sleeve and expose firing pin housing.

e. Slide block assembly at center of test fixture under firing pin housing until block assembly pin slides into base plate hole. Align firing pin subassembly so that eye is horizontal and firing lanyard is located on top (Figure 43).

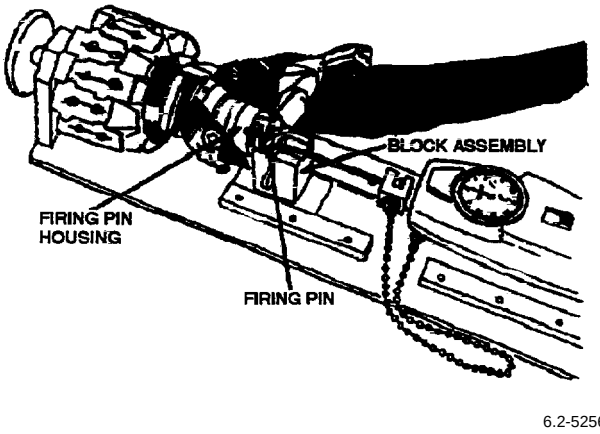


Figure 43. Slide Block Assembly at Center of Test Fixture

f. Attach hook assembly to firing pin eye and slide hook assembly block over nut attached to spring scale.

g. Move switch on spring scale to center position. Zero scale by rotating bezel. Move switch to full down position away from meter to observe pull force.

CAUTION

Do not withdraw firing pin subassembly further than distance needed for release of firing pin. Complete removal of firing pin is not required for this test. Complete removal would cause ball bearings to unseat, thus requiring a depot overhaul.

h. Pull test fixture lever until firing pin subassembly releases. Verify that the pull force is 32 ± 6 lbs. If spreading gun fails first test it shall be tested twice more. Spreading gun must pass both retests. (QA)

NOTE

If spreading gun fails pull force check, do not place gun into service.

i. After pull force measurement has been obtained, remove hook assembly from firing pin subassembly.

j. Push firing pin subassembly back into housing. Push control disc firmly inward, forcing firing pin subassembly out of housing. Apply inward hand pressure to firing pin subassembly as it moves out. Continue to move control disc inward, applying hand pressure to firing pin subassembly until it clicks into place. When click is heard, gun is cocked. Gently release control disc while still exerting pressure on firing pin subassembly.

k. Tug gently on firing pin subassembly until effect of spring loading is felt. If firing pin subassembly moves without any spring tension, the gun is not cocked and steps f and g must be repeated. (QA)

l. Inspect spreading gun safety pin for ease of operation, presence of two locking balls, and condition of flag and flag stowage strap.

WARNING

Safety pin must be installed.

m. Install safety pin. (QA)

n. Remove spreading gun from test fixture as follows:

(1) Release block assembly by pulling pin out of hole in base plate and sliding away from spreading gun

(2) Remove gun from shaft. Do not remove gun by pulling on firing lanyard.

o. Attach spreading gun to canopy assembly. Align top of spreading gun with skirt hem (Figure 44).

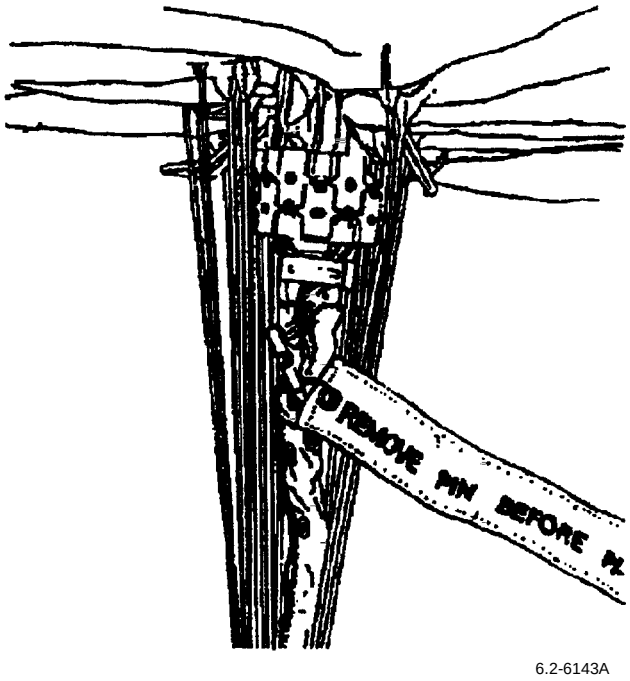


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Figure 44. Align Top of Spreading Gun

p. Loosen screws and plate on slug 14-13. Place suspension line number 13 and a single length of attached spreading gun loop in closed slot of slug. Place suspension line 14 in open slot of same slug (Figure 45).

q. (For NES-25, A/P28S-28, -30, and -31) Loosen screws and plate on slug 28-27. Place suspension line number 27 and a single length of attached spreading gun loop in closed slot of slug. Place suspension line 28 in open slot of same slug.

r. Pass loop around plate and over suspension line in slug. Secure plate to slug with screw provided and ensure that suspension lines move in slots and not trapped by plate assembly. Torque plate screws to 6 ± 1/2 in-lbs. (Figure 46).

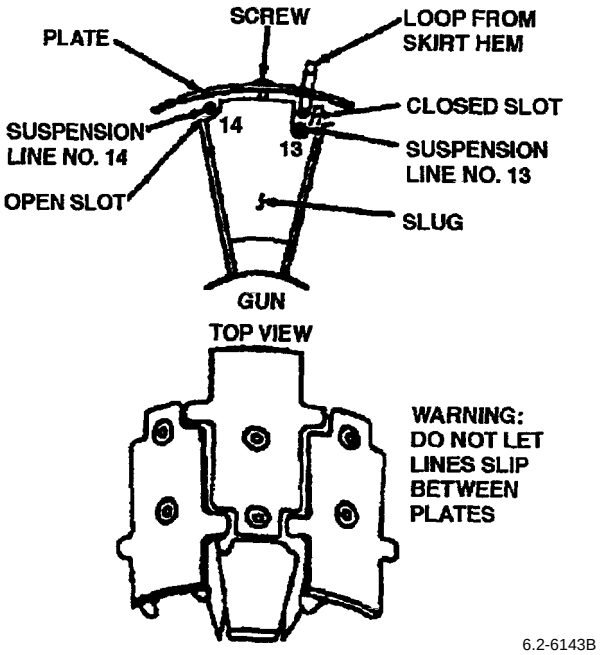

Figure 45. Loosen Screws and Plate

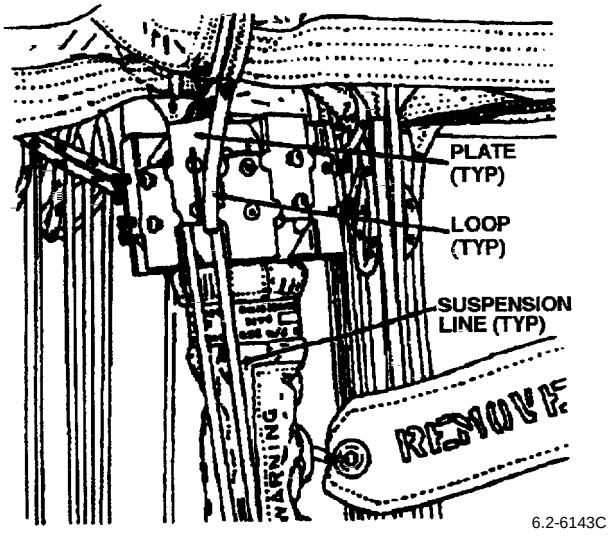

Figure 46. Pass Loop Around Plate

s. Secure remainder of suspension lines and loops to corresponding slugs in same manner as in step r. Work from suspension line 12 thru 1 and from line 15 thru 28 (Figure 47). (QA)

CAUTION

Do not allow alcohol to flow inside gun as this could damage O-rings and lubrication.

Denatured Alcohol **9**

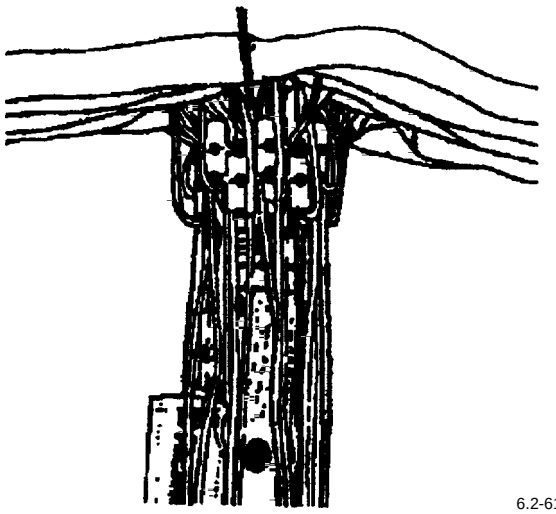

Figure 47. Secure Remainder of Suspension Line

t. Clean cartridge chamber and threads with a small amount of denatured alcohol. Ensure that the old sealing compound and all foreign matter are removed. Gun shall be tilted to allow denatured alcohol to run out of gun. Allow at least 2 min. drying of time for denatured alcohol to evaporate.

u. Compare type of cartridge, part number, lot number and service life expiration date on Parachute Record (OPNAV 4790/101) to that marked on cartridge. (QA)

v. Apply sealing compound to top two threads of cartridge (Figure 48).

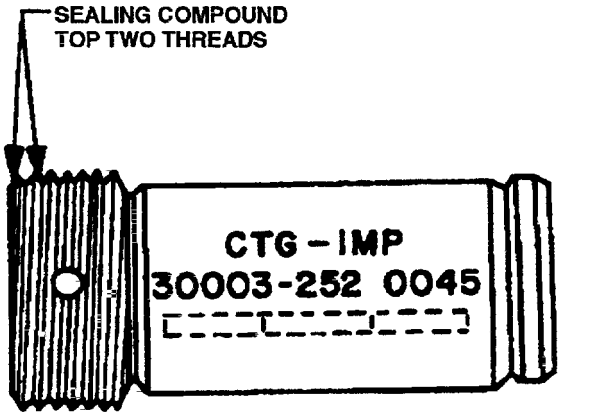

Figure 48. Spreading Gun Cartridge

w. Attach cartridge to retainer cord by passing pin thru screw base of cartridge and loop in end of retainer cord (Figure 49).

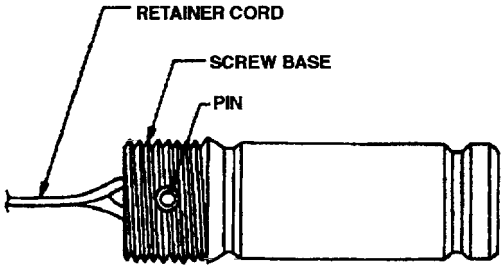

Figure 49. Attachment of Retainer Cord to Cartridge

WARNING

Do not force cartridge into chamber. Safety pin must be installed.

NOTE

Use only special tools furnished for cartridge installation. It is recommended that a helper assist the person performing cartridge installation by verifying procedures as each step is accomplished.

When a cartridge is properly installed, base should be about even with top edge of chamber. If cartridge is more than one thread above edge, remove cartridge and check bottom of chamber for any obstruction, (i.e., slug pistons). If cartridge is damaged, replace it with a new cartridge.

x. Insert cartridge into chamber. Manually tighten cartridge into chamber. If cartridge stops before threads are engaged, remove cartridge and check for any protruding slug pistons; push back as necessary.

y. Place pins of cartridge extractor wrench into holes in cartridge and torque to a value of 84 ± 12 in-lbs. (QA)

z. Apply torque seal to each screwhead.

WARNING

Spreading gun employs an explosive cartridge. Failure to observe procedures in this paragraph could result in serious injury.

57. REPLACEMENT OF RETAINER CORD.

Materials Required

Specification or Part Number	Nomenclature
V-T-295	Thread, Nylon, Size 6, Type I or II, Class A

NOTE

Tie off all tackings with a surgeon's knot topped with a square knot, followed with a binder knot per WP 002 00. Trim off excess leaving 1/2-in.

WARNING

Safety pin must be installed.

a. Ensure that the safety pin is installed. (QA)

b. Remove cartridge per Paragraph 54.

c. Attach free end of new retainer cord to old cord and pull both cords thru canopy apex.

d. Remove old retainer cord from apex lines.

e. Insert loop end of new retainer cord into end of cartridge, and reinsert retainer cord securing pin (Figure 49). (QA)

f. Perform spreading gun pull force check and cartridge installation per Paragraph 56.

g. Route retainer cord thru lark's head knot in internal bridle and under all vent lines. Center retainer cord plastic sleeve over indexing line on retainer cord and then align indexing line above apex lines (Figure 50).

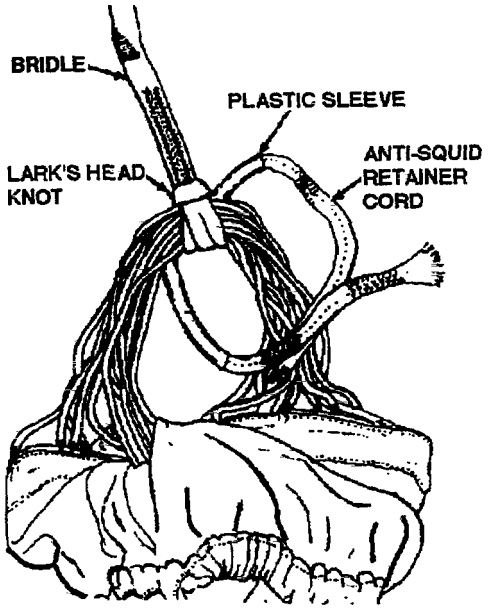

Figure 50. Route Retainer Cord

h. Using a bodkin, telescope 2-in. of retainer cord into itself, forming a 3 ± 1/4-in. loop around apex lines. Cut off 1-in. of retainer cord at a 45-degree angle (Figure 51).

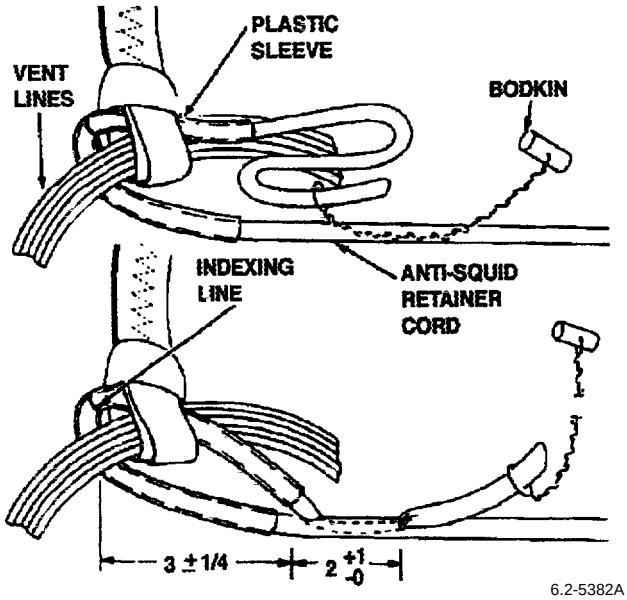

Figure 51. Using a Bodkin Telescope Retainer Cord

i. Tie a half-hitch around retainer cord and telescope remainder of end into retainer cord. Work line smooth on inside of casing (Figure 52).

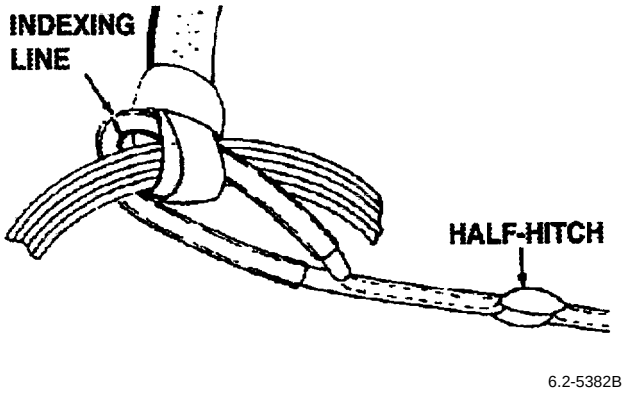

Figure 52. Tie a Half-Hitch Around Retainer Cord

j. Tack end inside retainer cord with two turns of size 6 thread doubled and waxed. Tie off (Figure 53).

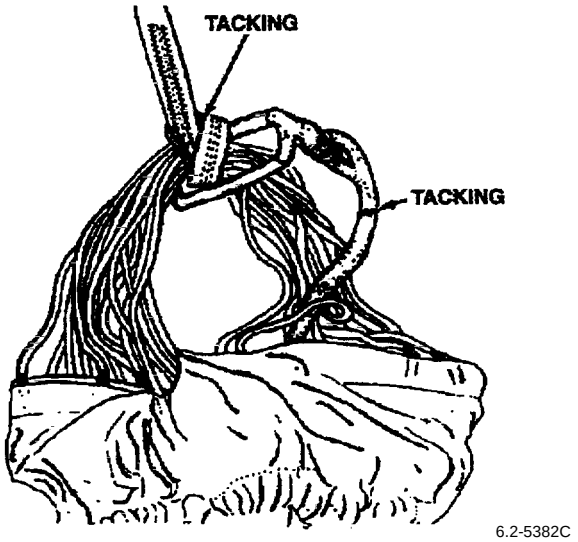

Figure 53. Tack End Inside Retainer Cord

58. STOWAGE OF FIRING LANYARD IN STOWAGE SLEEVE.

NOTE

Tie off all tackings with a surgeon's knot topped with a square knot, followed with a binder knot per WP 002 00. Trim off excess leaving 1/2-in.

a. Cut a 30-in. length of Type I or IIA cord to use as a stowage aid. Beeswax may be lightly applied to cord as a lubricant.

b. Starting at 7-in. mark on firing lanyard, form a bight in lanyard the length of stowage sleeve. Position stowage sleeve end with pull-the-dot fastener facing connector links. Socket of fastener faces table (Figure 54).

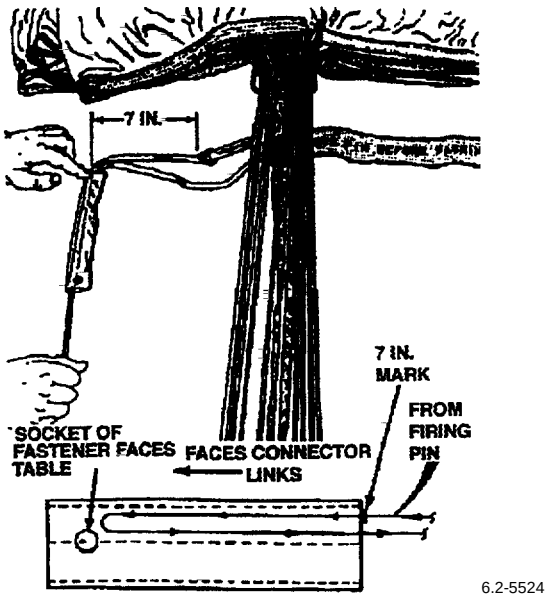

Figure 54. Stowage of Firing Lanyard in Stowage Sleeve

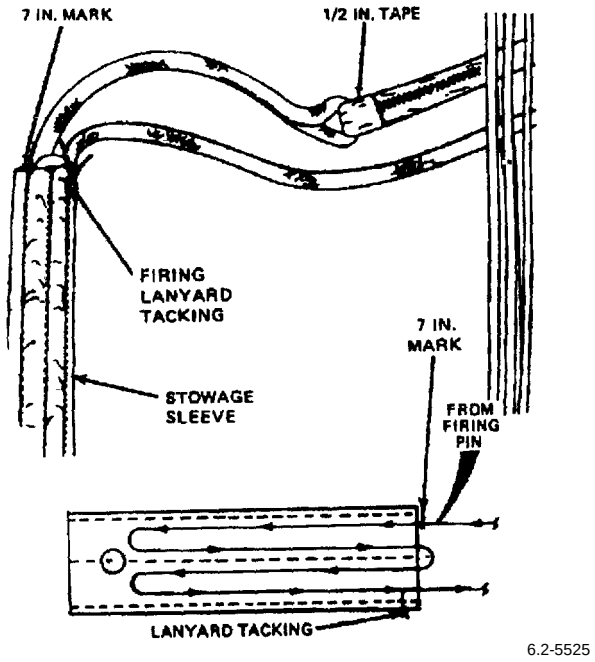

Figure 55. Tacking Firing Lanyard to Stowage Sleeve

c. With button on stowage sleeve facing up, route stowage aid thru bight in firing lanyard. Draw stowage aid thru left stowage sleeve channel with a bodkin from end opposite snap fastener to end with snap fastener (Figure 54).

d. Draw firing lanyard thru stowage channel to bottom using stowage aid (Figure 54).

CAUTION

Rapid removal of stowage aid from firing lanyard bight could damage lanyard.

e. Slowly remove stowage aid from firing lanyard bight.

f. Form an 8-in. bight in firing lanyard and stow in remaining stowage sleeve channel.

g. Tack second stow of firing lanyard to stowage sleeve at end opposite snap fastener with one turn of size A thread, single and waxed or one turn of cotton 30/3 thread. Tie off (Figure 55). (QA)

WARNING

The 1/2-in. tapes must not be twisted around firing lanyard.

h. Ensure 1/2-in. tapes are not twisted around firing lanyard (Figure 55).

59. TACKING OF ANTI-SQUID RETAINER CORD.

Materials Required

Specification or Part Number	Nomenclature
V-T-295	Thread, Nylon, Size FF, Type I or II, Class A

NOTE

Tie off all tackings with a surgeon's knot topped with a square knot, followed with a binder knot per WP 002 00. Trim off excess leaving 1/2-in.

a. Remove loose or broken tacking.

b. Measure length of internal bridle line. Proper length is 30 ± 1/2-in. unattached.

c. Measure length of cross-connector strap. Proper length is 16 ± 1/4-in. unattached.

d. Measure length of anti-squid retainer cord. Proper length is 157 ± 1 1/2-in. Ensure that tackings (two) are present and line is properly stowed in stowage sleeve (Figure 56).

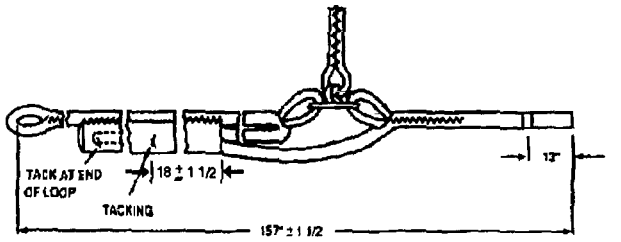

Figure 56. Tack End of Sleeve

e. Tack 18 ± 1 1/2-in. from end of sleeve and at end of loop. Use one turn of size FF thread single and waxed, tack thru sleeve anti-squid retainer cord and sleeve. Tie off (Figure 56).

60. FABRICATION OF SAFETY PIN FLAG.

Support Equipment Required

Part Number	Nomenclature
1412	Chuck, Fastener
1401	Chuck, Fastener
1407	Die, Fastener
1410	Die, Fastener
M-100	Press
GGG-S-00278	Scissors

Materials Required

Specification or Part Number	Nomenclature
MIL-C-22787	Fabric, Red, Type IV, USAF 1556, 22-in.
	-or-
MIL-C-20696	Cloth, Coated Type I, Class 2, No. 21136 Red Color

Materials Required

Specification or Part Number	Nomenclature
PIA-W-4088	Webbing, Nylon, 6 1/2-in., Type I or IA, Class 1, 1A or 2
PIA-T-5038	Tape, Textile Type IV, 3/4-in. 3/4 x 3/4 (1 ea)
MS27983-1	Buttons (2 ea)
MS27983-2N	Sockets (2 ea)
MS27983-3	Studs (2 ea)
MS27983-4	Eyelets (2 ea)
MS20230B10	Grommet Assembly, Size 0 (1 ea)
TT-L-50	Lacquer, Black Lusterless No. 37875

a. Cut a 22-in. length of red fabric and fold ends over 1-in.

b. Using dimensions shown, install a size 0 grommet at one folded end and a pull-the-dot button and socket at other end with dot on centerline facing inboard (Figure 57).

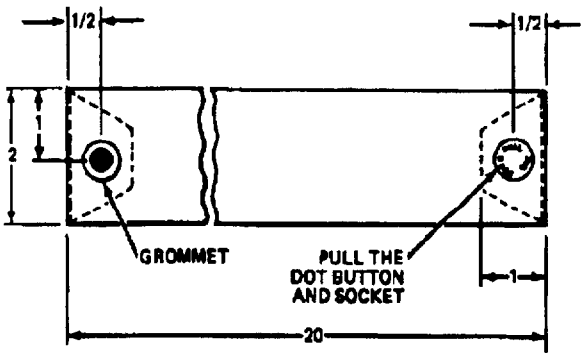

Figure 57. Install a Size 0 Grommet

c. Using dimensions shown, cut a 6 1/2-in. length of olive drab webbing and install a pull-the-dot button and socket at one end (Figure 58).

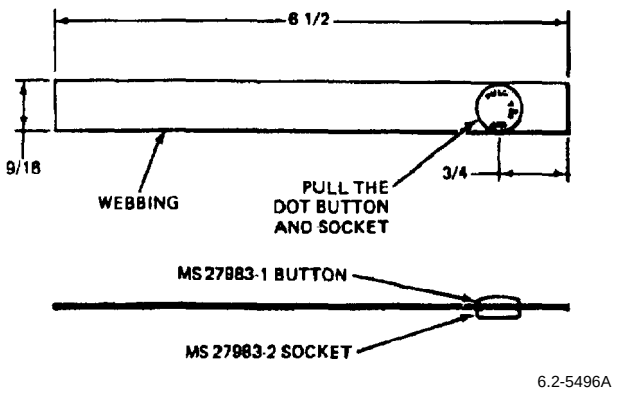

Figure 58. Cut a Length of Webbing

d. Secure a piece of webbing to flag with eyelet and stud as shown (Figure 59).

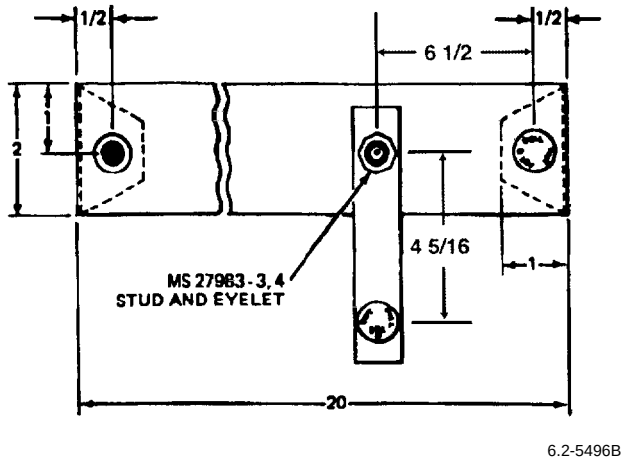

Figure 59. Secure Piece of Webbing to Flag

e. Install eyelet, stud and tape 5 1/2-in. from centerline of pull-the-dot button at folded end of pennant.

f. Using black lusterless lacquer, mark "REMOVE PIN BEFORE PACKING" in 1/2-in. high letters as shown (Figure 60).

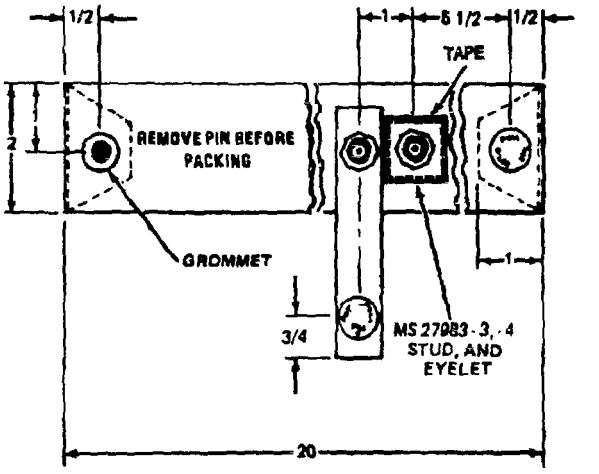

Figure 60. Marking of Pennant

61. CORROSION REMOVAL.

Materials Required

Specification or Part Number	Nomenclature
Break-Free CLP Liquid (Oper Purchase)	Cleaner, Lubricant Preservative
MIL-A-9962	Mat, Abrasive
H-B-491	Soft Brush

a. Inspect parachute hardware for corrosion (red, rust, gray to black discoloration, and white deposits).

b. White deposits shall not be cause for rejection, except for deposits on actuating parts/mechanisms.

NOTE

Do not reject hardware for cosmetic purposes.

c. Gray to black discoloration on parts/mechanisms shall not be cause for rejection. Staining and discoloration of cadmium plating is a normal result of its protective action. Removal of this discoloration will damage the plating and decrease its ability to prevent corrosion of the metal base.

d. Remove minor red rust and white deposits from non-actuating parts/mechanism surfaces only, using mildest methods possible and necessary to remove deposits. Rub off with soft rag, pencil eraser, or non metallic abrasive pad (MIL-A-9962); do not use surface treatments or metal cleaning compounds, such as, alodine or harsh abrasive metal polishes.

CAUTION

Ensure dirt and corrosion particles are not brushed or wiped into actuating parts/mechanisms.

e. Remove dirt and corrosion particles with a soft brush or clean dry cloth.

NOTE

Do not spray lubricant onto hardware or use lubricant on hardware inside parachute container.

f. Wipe general parachute hardware and canopy release assemblies with cloth dampened with MIL-L-63460, lubricant. Shield nylon webbing from contract with lubricant during application. Allow lubricant to dry 2 min. Remove excess lubricant by wiping with clean dry cloth.

g. Manually operate hardware, such as, canopy release fittings, ripcord release handle, V-rings, quick release snaps, etc. to determine functionality. If results of functional tests are questionable, sluggish, hesitant, or rough functioning of hardware shall be cause for rejection.

62. DISASSEMBLY OF AUTOMATIC PARACHUTE RIPCORD RELEASE.

a. Remove cover locking screw and washer (Figure 61).

NOTE

Cover and power cable assembly and receiver and barrel assembly are serialized, matched sets. Do not mix assemblies.

b. Slide cover off receiver and barrel assembly.

c. Disengage barrel by pushing down on snap-lock; slide back and release (Figure 62).

d. Remove temporary pin and discard.

63. AUTOMATIC PARACHUTE RIPCORD RELEASE (APRR) REPAIRS.

a. Repair of ripcord release is limited to following:

(1) Replacement of torque seal on leaf spring retaining screw.

(2) Superficial cleaning.

b. Replace ripcord release for any of following:

(1) Fired ripcord releases.

(2) Failure to meet requirements of firing altitude check.

(3) Failure of firing pin to cause indent on dummy cartridge during firing altitude check.

(4) Flattening, gouges, or any other damage to firing pin and hammer.

(5) Excessive nicks, cracks, gouges, distortion, corrosion, or any other damage to receiver and barrel assembly which could cause a malfunction.

(6) Insecure attachment of power cable housing to cover.

(7) Broken, bent, corroded, or frayed arming or power cable.

(8) Loose power cable swage ball or eye.

(9) Loose power or arming cable housing ferrules.

(10) Binding of power cable, preventing free movement.

(11) Insecure retention of arming pin in arming pin retainer.

(12) Damage to socket or insecure retention of socket and piston by shear pin.

(13) Damage to snaplock and snaplock pins.

(14) Damage to leaf springs.

(15) Broken sealing compound on aneroid (cracks due to normal aging are acceptable).

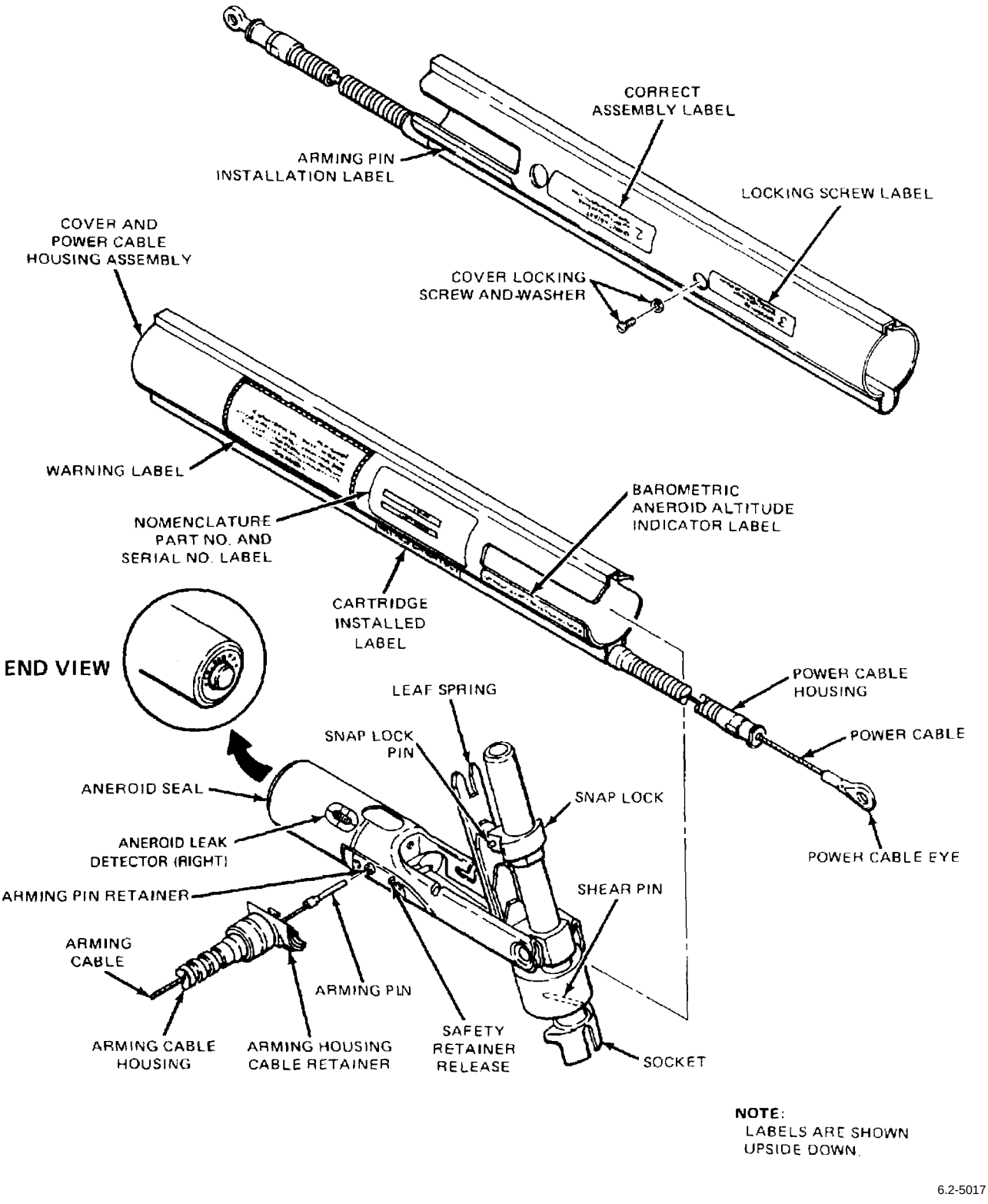

Figure 61. Automatic Parachute Ripcord Release, Model 7000

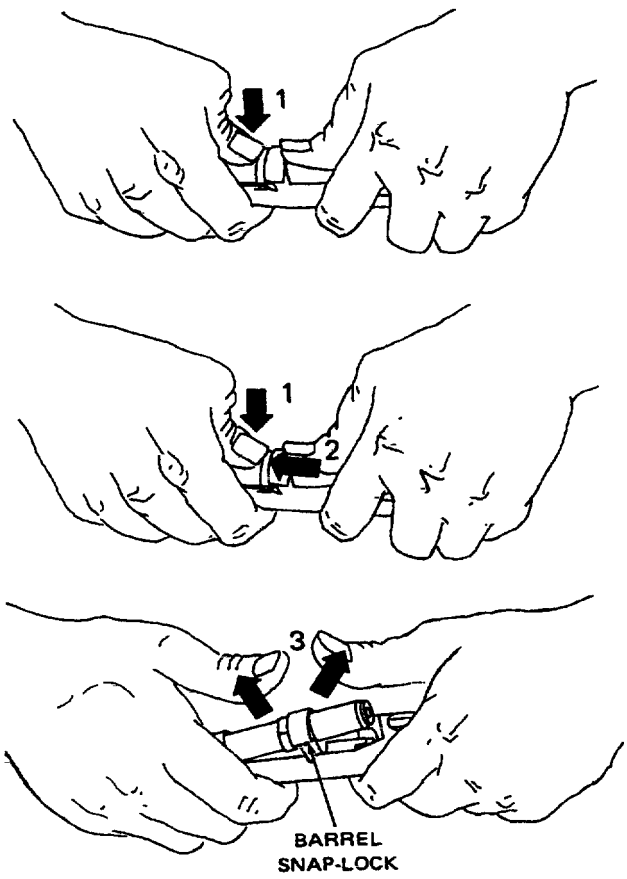

Figure 62. Disassembly of Automatic Parachute Ripcord Release

(16) Improper placement of teflon seal inside barrel.

(17) Loose arming cable pin or swages.

(18) Distortion, corrosion, or other damage to arming cable retainer clip.

(19) Damage to arming cable housing retainer.

(20) Mismatched serial numbers on cover and receiver and barrel assembly.

64. REPLACEMENT OF AUTOMATIC PARACHUTE RIPCORD RELEASE.

a. Inspect replacement ripcord release per applicable personnel parachute assembly and then reinstall at proper point in packing procedure.

65. REPLACEMENT OF TORQUE SEAL ON LEAF SPRING RETAINING SCREW.

Support Equipment Required

Part Number	Nomenclature
—	Screwdriver, Torque

Materials Required

Specification or Part Number	Nomenclature
F-900 Torque Seal (Color Optional)	Sealing Compound

a. Torque retaining screw to a value of 15 ± 1/2 in-lbs. (QA)

b. Apply torque seal to screwhead and leaf spring (Figure 63). (QA)

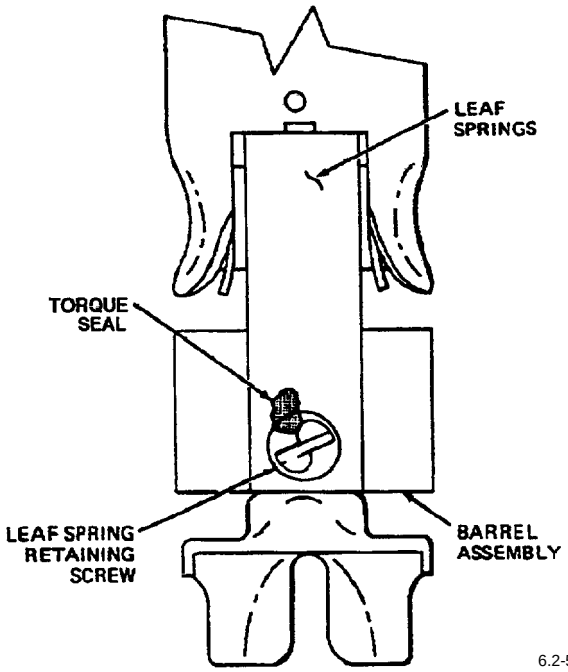

Figure 63. Application of Torque Seal

66. HARNESS REPAIRS.

67. FABRICATION AND REPLACEMENT OF ELASTIC STRAP KEEPER.

Materials Required

Specification or Part Number	Nomenclature
PIA-W-5664	Webbing, Elastic, Type I, 1 1/2-in. Class 2
V-T-295	Thread, Nylon, Size E, Type I or II, Class A

a. Cut a 5-in. length of elastic webbing.

b. Pass webbing around harness. Place both ends together and sew in place 1/4-in. from end and 1/8-in. from edges, in a box stitch, and backstitch 1/2-in. (Figure 64).

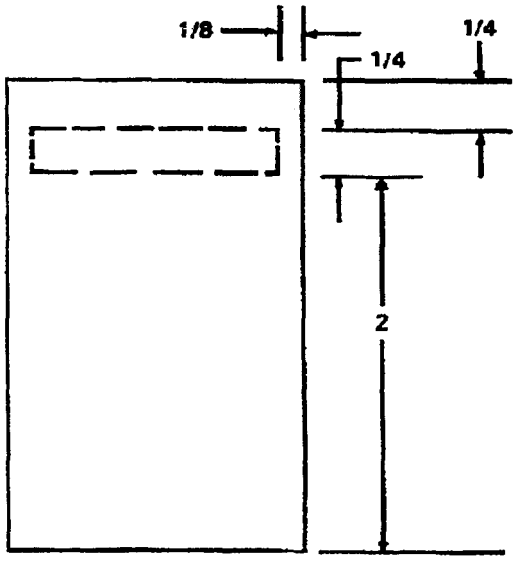

Figure 64. Fabrication of Keeper Strap

c. Turn webbing inside out.

68. REPAIR OF LOOSE OR BROKEN HARNESS/ RISER STITCHING.

Materials Required

Specification or Part Number	Nomenclature
V-T-295	Thread, Nylon, Size 6, Type I or II, Class A

a. Sew over loose or broken stitching on original stitch line. New stitching shall extend 3/4-in. beyond affected area (Figure 65).

69. REPLACEMENT OF LEG STRAP EJECTOR SNAP.

Materials Required

Specification or Part Number	Nomenclature
MS22018	Snap, Parachute Harness Quick Fit Ejector

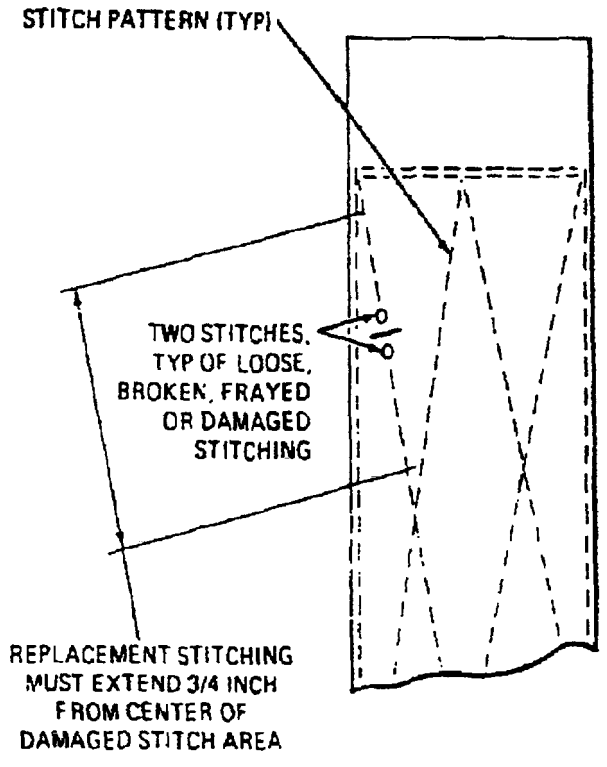

Figure 65. Typical Repair of Harness Loose or Broken Stitching

a. Remove defective ejector snap by unreeving leg strap from ejector snap adapter.

b. Inspect replacement ejector snap per for proper function, corrosion, sharp edges, and damage.

c. Reeve leg strap thru ejector snap per (Figure 66). Ejector snap must be facing wearer.

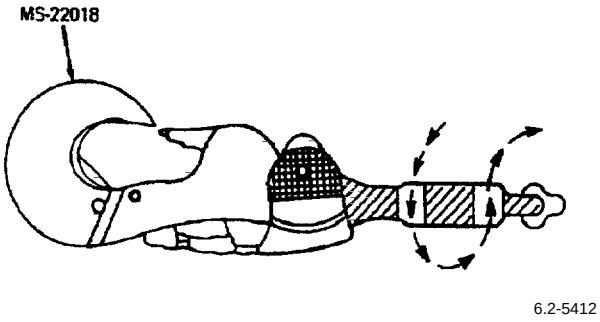

Figure 66. Leg Strap Ejector Snap Replacement

70. REPLACEMENT OF CHEST STRAP EJECTOR SNAP.

Materials Required

Specification or Part Number	Nomenclature
MS22017	Snap, Parachute Harness Ejector

a. Remove defective ejector snap by unreeving chest strap from adapter (MS22014-2) and ejector snap.

b. Inspect replacement ejector snap for proper function, corrosion, sharp edges, and damage.

c. Reeve chest strap thru adapter and ejector snap per (Figure 67). Ejector snap must be facing wearer.

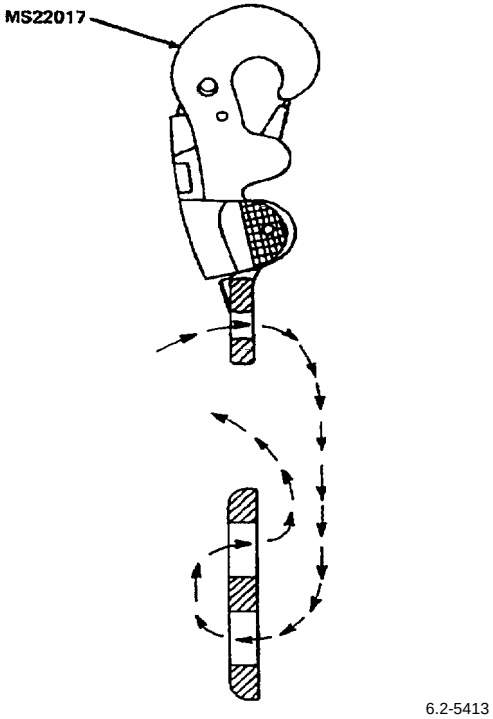

Figure 67. Chest Strap Ejector Snap Replacement

71. REPLACEMENT OF CHEST STRAP TRIANGLE LINK.

Materials Required

Specification or Part Number	Nomenclature
MS22020-1	Link, Parachute Harness Triangle

a. Remove defective triangle link by unreeving chest strap from adapter (MS22014-2).

b. Inspect replacement triangle link for any damage or corrosion.

c. Reeve chest strap thru adapter and triangle link per (Figure 68).

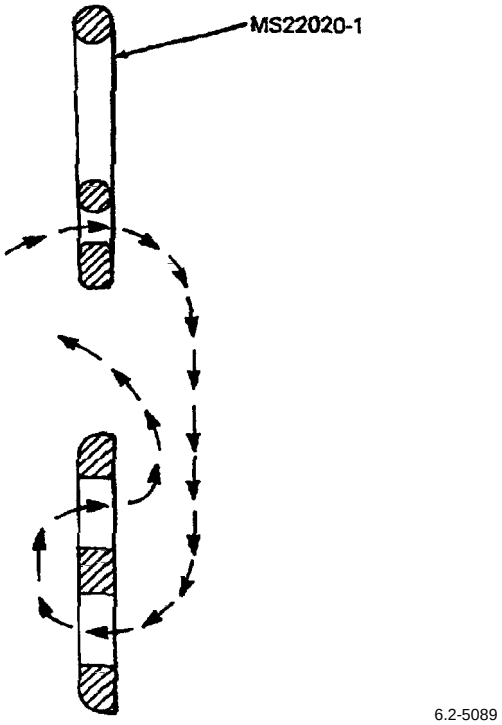

Figure 68. Chest Strap Triangle Link Replacement

72. REPLACEMENT OF RIPCORD POCKET AND RIPCORD HOUSING TACKING.

Materials Required

Specification or Part Number	Nomenclature
V-T-295	Thread, Nylon, Size E, Type I or II, Class A
	-or-
V-T-295	Thread, Nylon, Size 6, Type I or II, Class A

NOTE

Tie off all tackings with a surgeon's knot topped with a square knot, followed with a binder knot per WP 002 00. Trim off excess leaving 1/2-in.

a. Remove ripcord assembly from ripcord pocket and housing.

b. Cut tackings and stitching securing pocket to harness and remove.

c. Inspect replacement pocket fabric areas and elastic for contamination, cuts, tears, burns, fraying and loose or broken stitches.

d. Insert free end of ripcord housing thru loop of ripcord handle pocket. Tack housing to pocket loop using four turns of size 6 thread, doubled and waxed; tie off (Figure 69).

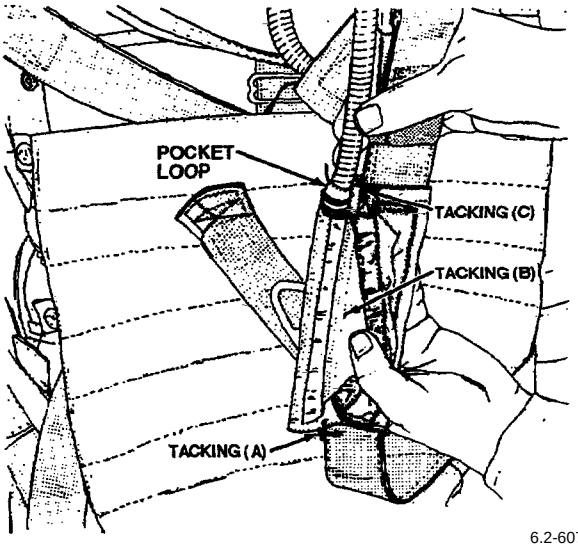

Figure 69. Replacement of Ripcord Pocket and Housing

e. Ensure pocket is positioned so that ripcord housing is on inside edge of harness webbing.

f. Fold ripcord pocket around left main sling of harness so that housing is on inside edge of harness webbing. Secure both sides of pocket together by machine stitching with size E thread. Sew with two rows of stitching to outboard edge of stiffener and pocket edge, back stitch 1/2-in. (QA)

g. Tack both sides of pocket together between stiffener and harness at points A and C (Figure 69) tack with two turn of size 6 thread, doubled and waxed; tie off. (QA)

h. Tack both sides of pocket together at point B (Figure 69) between harness and stiffener with two turn of size 6 thread, doubled and waxed; tie off. After tacking, pocket must move freely. (QA)

73. ATTACHMENT OF RIPCORD HOUSING TO RIPCORD POCKET.

Materials Required

Specification or Part Number	Nomenclature
V-T-295	Thread, Nylon, Size 6, Type I or II, Class A

NOTE

Tie off all tackings with a surgeon's knot topped with a square knot, followed with a binder knot per WP 002 00. Trim off excess leaving 1/2-in.

a. Remove tacking securing housing to ripcord pocket.

b. Loosen ripcord housing clamp and remove housing from clamp.

c. Remove ripcord assembly from ripcord pocket and housing.

d. Remove ripcord housing from ripcord pocket loop

e. Inspect replacement ripcord housing for corrosion permanent bends, dents, breaks, cracks and loose ferrules.

f. Insert free end of housing thru loop of ripcord handle pocket. Tack housing to pocket loop using four turns of size 6 thread, doubled and waxed. Tie off.

g. Pass other end of housing thru shoulder tab sleeve and clamp to base plate with housing clamp.

h. Reinstall ripcord.

74. PARACHUTE HARNESS SENSING RELEASE UNITS (PHSRU) INSTALLATION.

a. Install per WP 024 01.

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