ORGANIZATIONAL, INTERMEDIATE, AND DEPOT MAINTENANCE

DESCRIPTION AND PRINCIPLES OF OPERATION

NES-8B PERSONNEL PARACHUTE ASSEMBLY

PART NO. 574AS100-4

AND

MK-H7 DROGUE PARACHUTE ASSEMBLY

MBEU38272

List of Effective Work Package Pages

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None

1. DESCRIPTION.

2. GENERAL.

a. The NES-8B Personnel Parachute Assembly and the MK-H7 Drogue Parachute Assembly are part of the MK-H7 Martin-Baker Escape System and are designed for use with a PCU-33/P or PCU-56/P parachute restraint harness (Figures 1 and 2).

b. The NES-8B assembly includes a multicolored (white, olive green, international orange and sand shade), 28 ft. diameter, flat, circular nylon canopy with 28 gores. Water deflation pockets are provided on alternate gores. The canopy is packed in a hardshell horse-shoe type container installed in the ejection seat.

c. The PCU-33/P or PCU-56/P parachute restraint harness incorporates the aircrew's parachute harness and provides attachment points for the lap and shoulder restraint system-s. The harness webbing is channeled thru the torso vest to retain it in position and facilitate donning.

d. When aboard the aircraft and seated, the aircrew connects the canopy release fittings on the parachute riser assembly to the canopy release adapters of the PCU-33/P or PCU-56/P parachute restraint harness.

e. The MK-H7 Drogue Parachute Assembly is used to stabilize and decelerate the seat with a minimum of attitude loss and to position the seat in a altitude for aircrew separation.

f. The Drogue Parachute Assembly consists of two parachutes: a 22-in. diameter controller drogue and a 5 ft. diameter stabilizer drogue parachute, both fabricated of cotton material. Parachutes are interconnected by a connecting line and packed together within the headbox container.

3. CONFIGURATIONS.

a. The only configuration for the NES-8B and MK-H7 parachute assemblies are shown in (Figures 1 and 2). Refer to the Illustrated Parts Break-down WP 014 04 and WP 015 02 for exact configuration requirements.

4. SUBASSEMBLY CONFIGURATIONS.

a. The subassemblies listed below make up the NES-8B parachute assembly and are shown in (Figure 3). Refer to WP 014 04 for detailed information on subassemblies.

Pilot Parachute Assembly

Withdrawal Line Assembly

Canopy Assembly

Line Stowage Board Assembly

Risers, Ripcord and Connector Straps, Ripcord Assembly

Parachute Harness Sensing Release Units

Restraint System Assembly

Pulldown Vent Lines

Container Assembly

5. PRINCIPLES OF OPERATION.

6. AUTOMATIC OPERATION ABOVE 14,000 FT. ALTITUDE.

a. When an aircrew ejects from aircraft above the ejection seat predetermined aircrew/seat separation altitude, the following takes place:

(1) The ejection seat drogue gun fires a piston deploying a 22-in. controller drogue. The controller drogue parachute, in turn, deploys a 5 ft. stabilizer drogue. The duplex drogue parachute system decelerates and stabilizes the seat during descent.

(2) The aircrew continues to free fall restrained in the seat. The stabilizer drogue remains attached to the seat by a scissor shackle. As the preset altitude is reached (14,000 $\pm$ 1000 ft.), and after a 2.25 sec. time delay, a barostat allows the seat time release mechanism to operate which, in turn, opens the scissor shackle. At the same time, the harness restraints, lapbelt, leg restraints, survival kit, and upper block of the personnel services disconnect, and the face curtain is unlocked.

(3) The stabilizer drogue, now free from the seat, pulls the withdrawal line from the parachute container. As the withdrawal line reaches full stretch, the ripcord locking pins are removed from the locking cones, permitting the grommets, locking cones and end tabs to separate. The container spring opening assemblies pull the end and side flaps apart, exposing the canopy and allowing the pilot parachute to deploy.

(4) The stabilizer drogue, still attached to the withdrawal line which is attached to the canopy apex, extracts the canopy followed by the suspension lines. The canopy starts to inflate during this operation. The pulldown vent (PDV) lines, which are shorter than the suspension lines, bear the load of the drogue parachutes and prevent squidding of the canopy. The PDV lines may break during high speed openings.

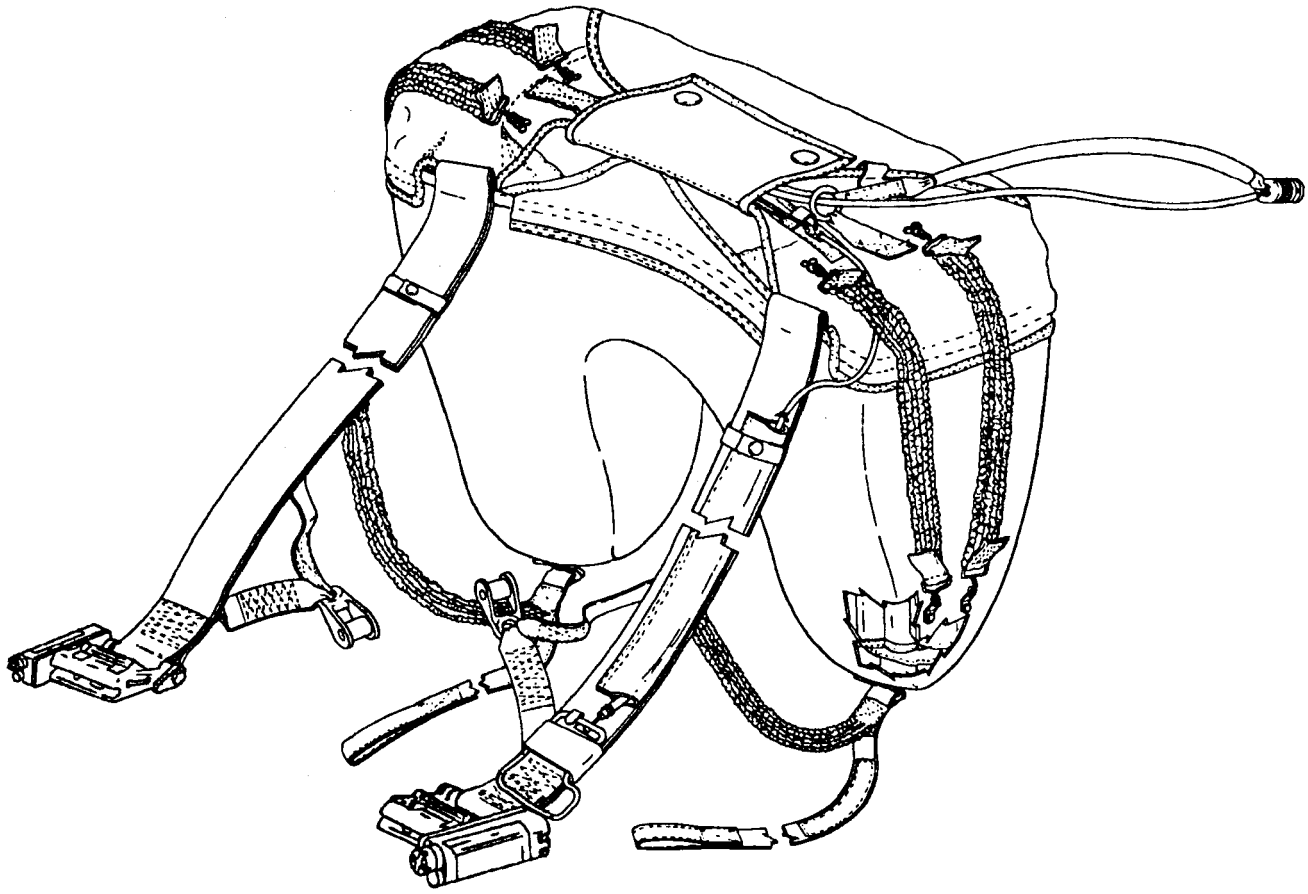

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Figure 1. NES-8B Personnel Parachute Assembly

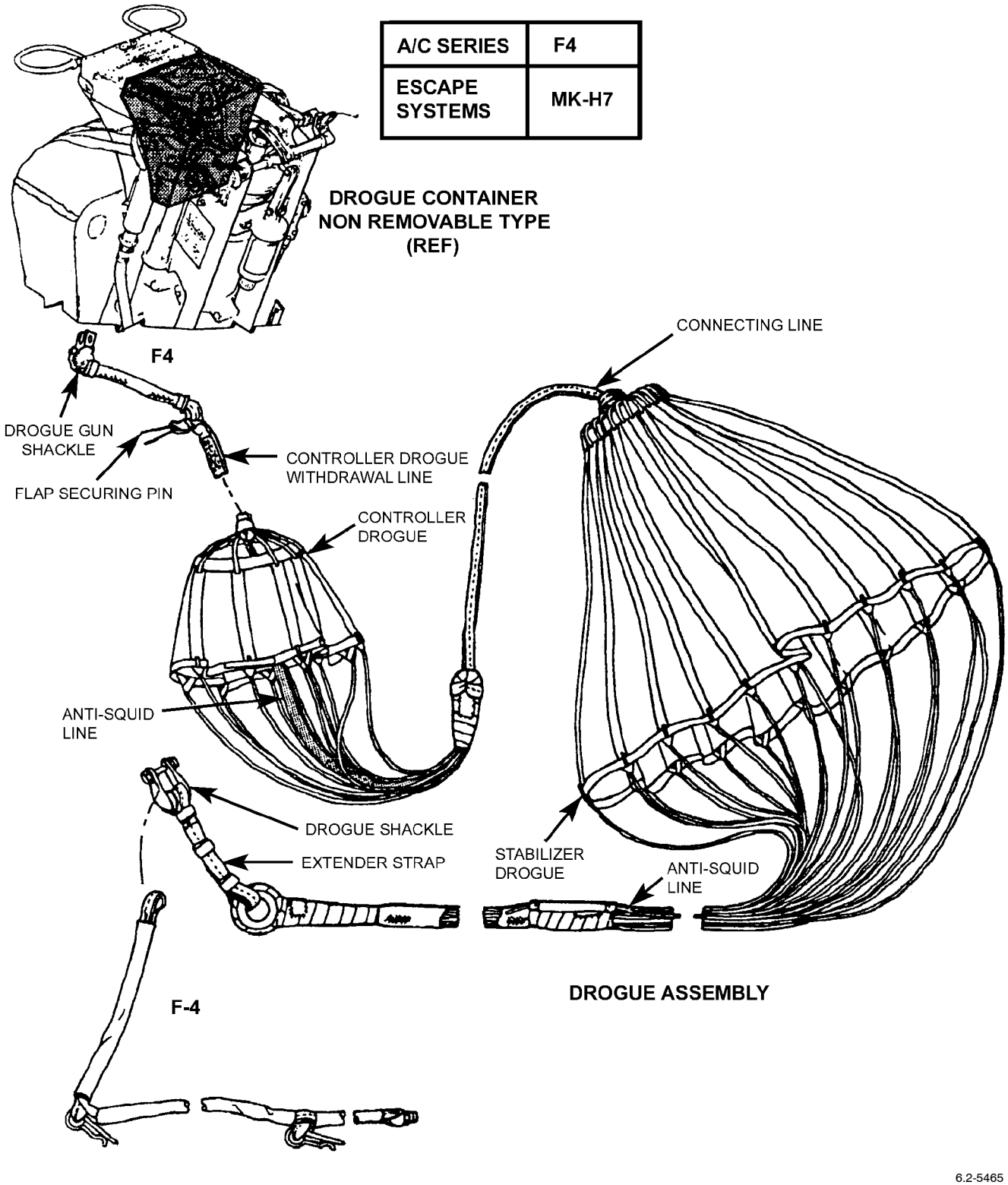
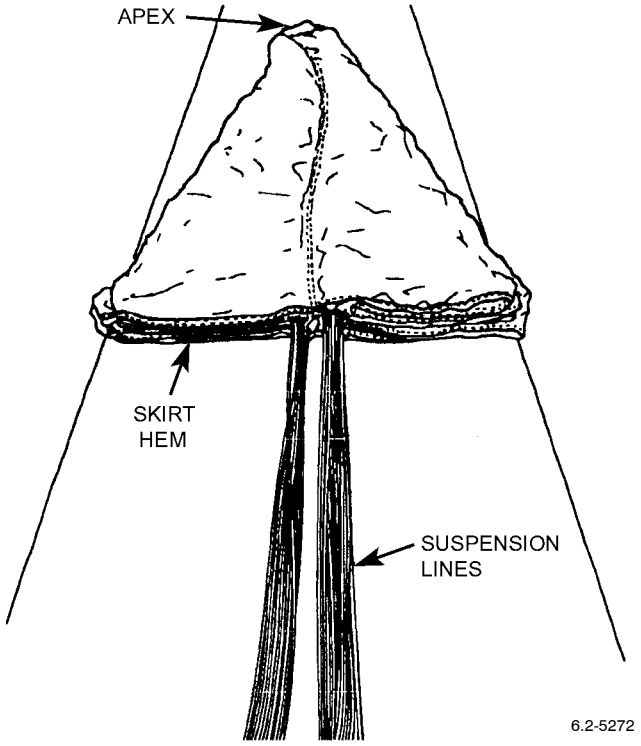
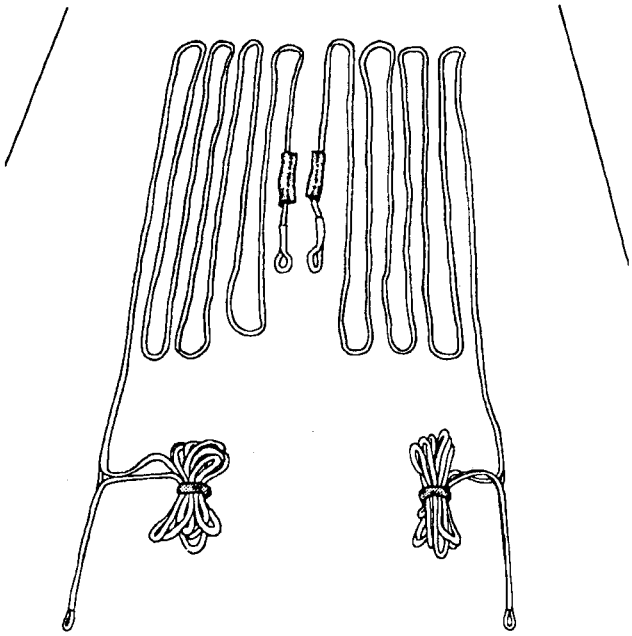


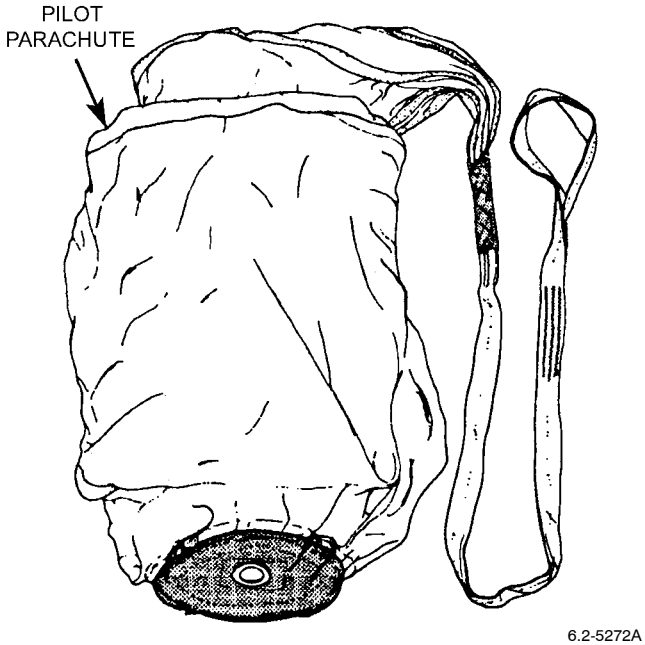
Figure 2. MK-H7 Drogue Parachute Assemblies, Martin-Baker



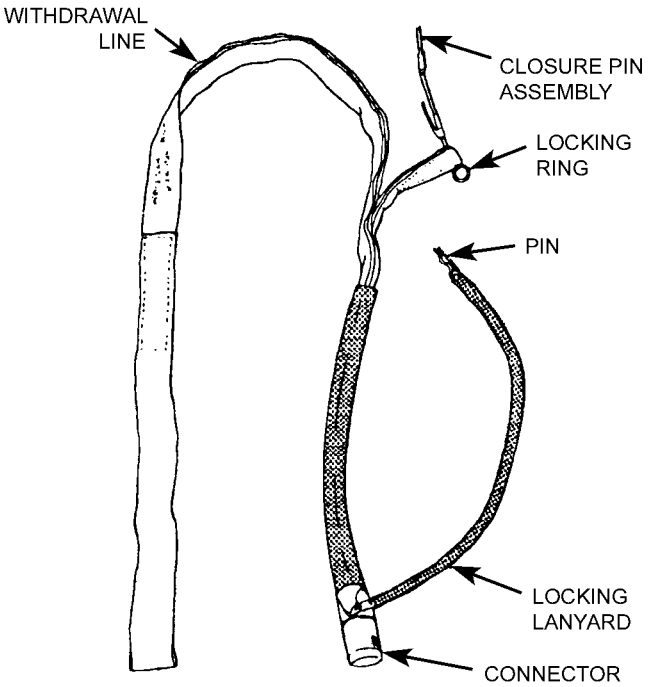
CANOPY ASSEMBLY



PULL DOWN VENT LINES 6.2-5272B

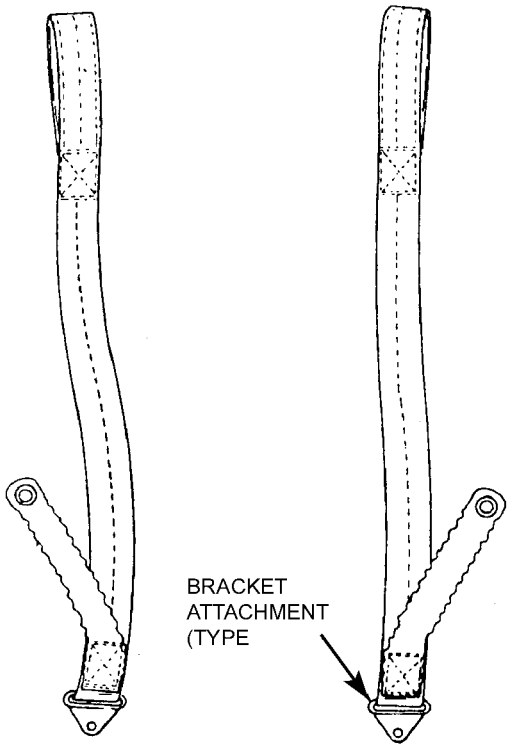


PILOT PARACHUTE ASSEMBLY

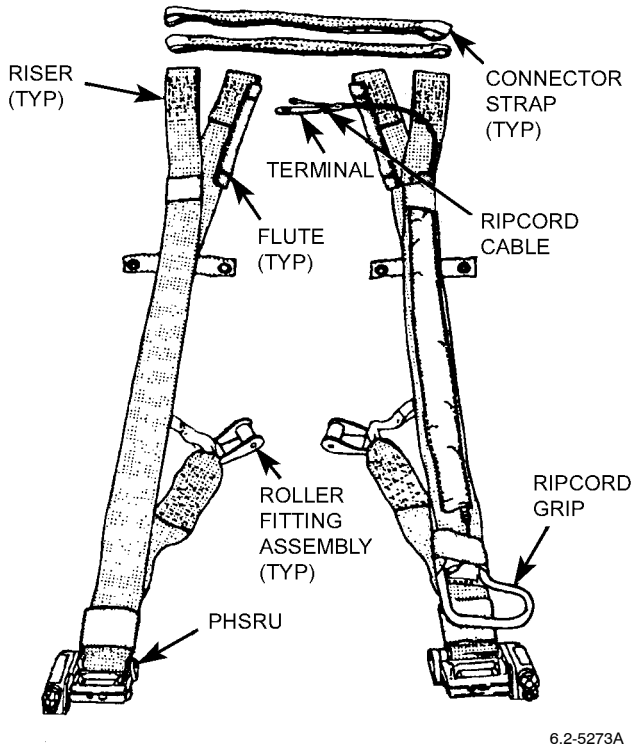


WITHDRAWAL LINE ASSEMBLY 6.2-5272C

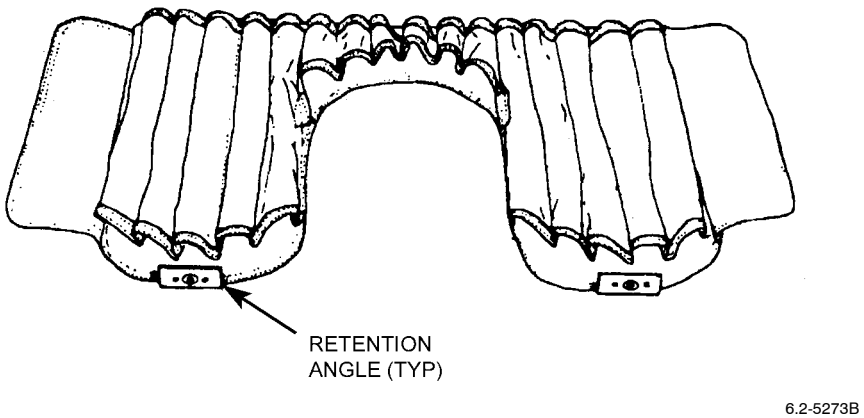
Figure 3. NES-8B Subassemblies (Sheet 1 of 4)



RESTRAINT SYSTEM ASSEMBLY



CONNECTOR STRAPS, RISERS, RIPCORD, PARACHUTE HARNESS SENSING RELEASE UNITS



LINE STOWAGE BOARD ASSEMBLY

Figure 3. NES-8B Subassemblies (Sheet 2 of 4)

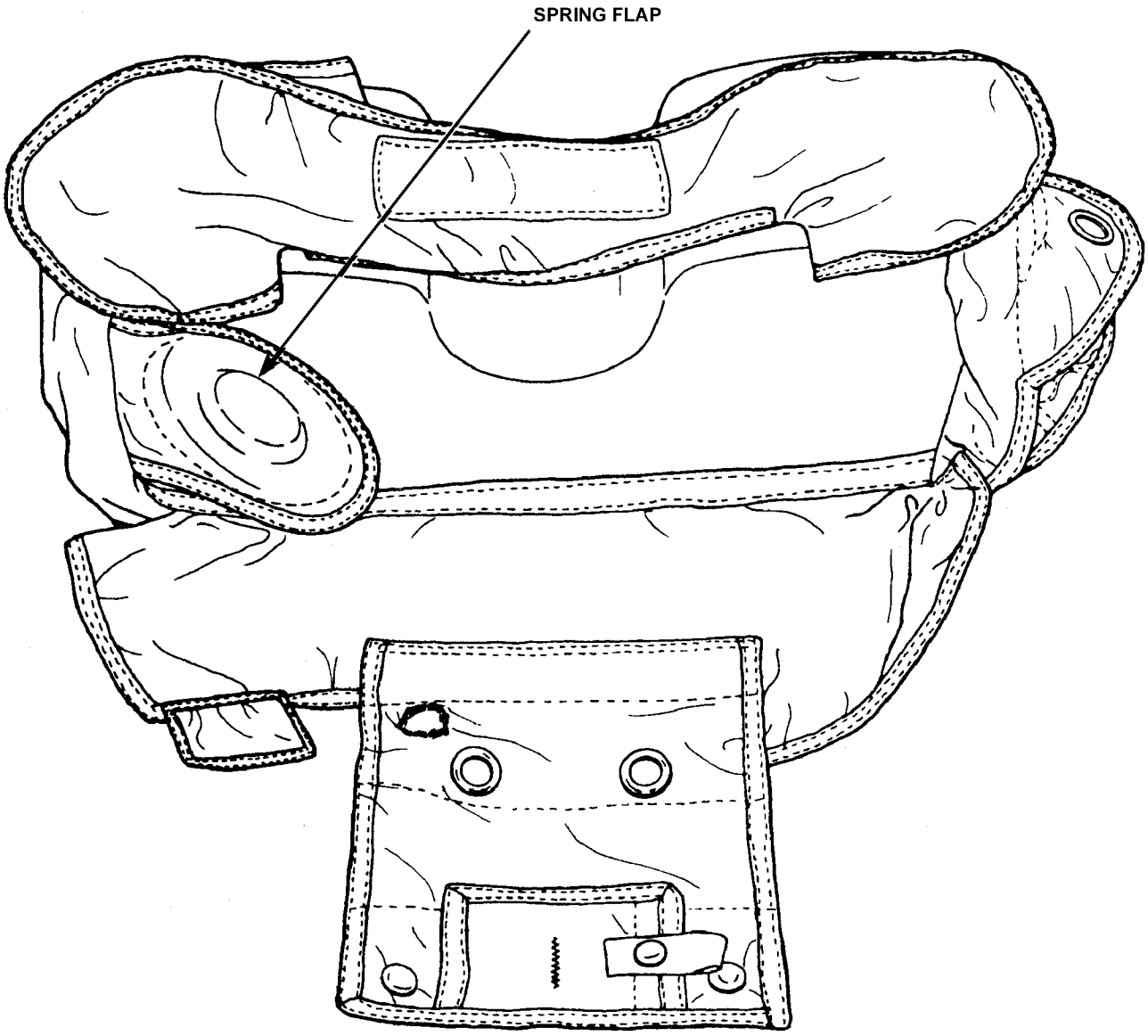


Figure 3. NES-8B Subassemblies (Sheet 3 of 4)

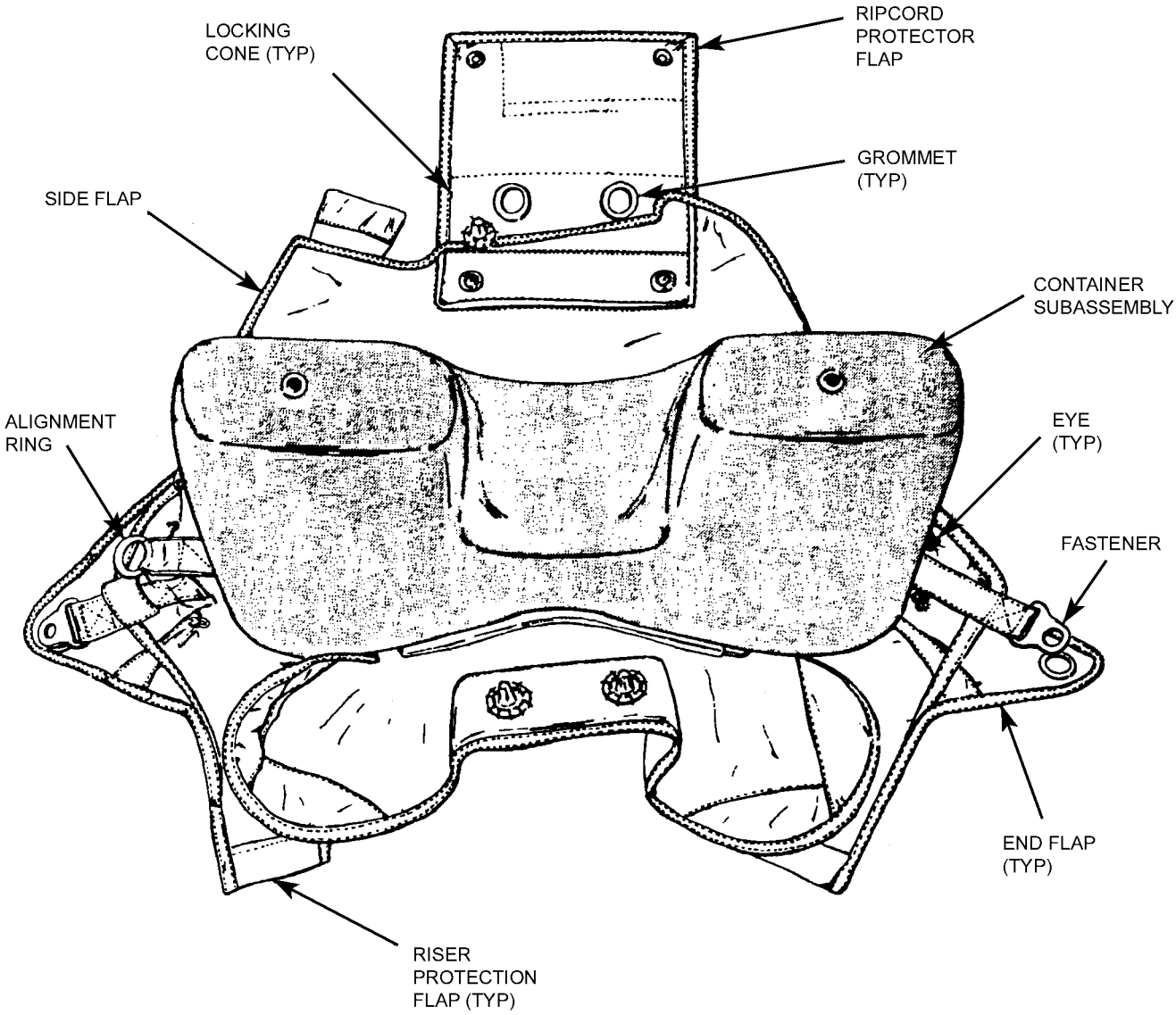


Figure 3. NES-8B Subassemblies (Sheet 4 of 4)

(5) As load is applied, the risers and connector straps separate from their fastener tape connection and are pulled from the container. The connector link ties break and the canopy fully opens, separating the aircrew from the seat.

(6) The aircrew descends suspended from the canopy by the risers and on the PCU-33/P or PCU-56/P parachute restraint harness.

(7) During descent, the aircrew may manually actuate the four-line release system which will reduce oscillation and allow the aircrew to maneuver the parachute to a less hazardous landing site.

(8) Upon landing, the aircrew disengages the parachute assembly from the PCU-33/P or PCU-56/P parachute restraint harness by actuating the canopy release fittings.

(9) The parachute harness sensing release unit (PHSRU) provides an automatic backup method of releasing the risers after the aircrew makes a seawater entry.

7. AUTOMATIC OPERATION BELOW 14,000 FT. ALTITUDE.

a. When an aircrew ejects from aircraft at or the below ejection seat predetermined aircrew/seat separation altitude, the following takes place:

(1) The ejection seat drogue gun fires a piston deploying a 22-in. controller drogue. The controller drogue parachute in turn, deploys a 5 ft. stabilizer drogue. The duplex drogue parachute system decelerates and stabilizes the seat during descent.

(2) After a 2.25 sec. time delay, the seat time release mechanism opens the scissor shackle. At the same time, the harness restraints, lapbelt, leg restraints, survival kit, and upper block of the personnel services disconnect, and the face curtain is unlocked.

(3) The stabilizer drogue, now free from the seat, pulls the withdrawal line from the parachute container. As the withdrawal line reaches full stretch, the ripcord locking pins are removed from the locking cones, permitting the grommets, locking cones and end tabs to separate. The container spring opening assemblies pull the end and side flaps apart, exposing the canopy and allowing the pilot parachute to deploy.

(4) The stabilizer drogue, still attached to the withdrawal line, which is attached to the canopy apex, extracts the canopy followed by the suspension lines. The canopy starts to inflate during this operation. The PDV lines, which are shorter than the suspension lines, bear the load of the drogue parachutes and prevent squidding of the canopy. The PDV lines may break during high speed openings.

(5) As load is applied, the risers and connector straps separate from their fastener tape connection and are pulled from the container. The connector link ties break and the canopy fully opens, separating the aircrew from the seat.

(6) The aircrew descends suspended from the canopy by the risers and on the PCU-33/P or PCU-56/P parachute restraint harness.

(7) During descent, the aircrew may manually actuate the four-line release system which will reduce oscillation and allow the aircrew to maneuver the parachute to a less hazardous landing site.

(8) Upon landing, the aircrew disengages the parachute assembly from the PCU-33/P or PCU-56/P parachute restraint harness by actuating the canopy release fittings.

(9) The parachute harness sensing release unit (PHSRU) provides an automatic backup method of releasing the risers after the aircrew makes a seawater entry.

8. MANUAL OPERATION.

a. If the aircrew should have to manually separate from the seat or if forced to select manual bailout, the following functions take place once clear of the seat/aircraft:

(1) Manually pulling the ripcord grip removes the ripcord pins from the locking cones, permitting the grommets, locking cones, and end tabs to separate. The container spring opening assemblies pull the end and side flaps apart, exposing the canopy and allowing the pilot parachute to deploy.

(2) The aircrew falling away from the inflated pilot parachute causes the canopy to be extracted from the container, followed by the suspension lines. The canopy begins to inflate during this operation.

(3) As load is applied, the risers and connector straps separate from their fastener tape connection and are pulled from the container. The connector link ties break and the canopy fully opens.

(4) The aircrew descends suspended from the canopy by the risers and on the PCU-33/P or PCU-56/P parachute restraint harness.

(5) During descent, the aircrew may manually actuate the four-line release system which will reduce oscillation and allow the aircrew to maneuver the parachute to a less hazardous landing site.

(6) Upon landing, the aircrew disengages the parachute assembly from the PCU-33/P or PCU-56/P parachute restraint harness by actuating the canopy release fittings.

(7) The parachute harness sensing release unit (PHSRU) provides an automatic backup method of releasing the risers after the aircrew makes a seawater entry.

ORGANIZATIONAL MAINTENANCE

REPAIR PROCEDURES

NES-8B PERSONNEL PARACHUTE ASSEMBLY

PART NO. 574AS100-4

List of Effective Work Package Pages

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Reference Material

None

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None

1. INTRODUCTION.

2. This work package (WP) contains instructions for organizational level repair to ensure that the parachute assembly remains in ready-for-issue status.

3. When performing the repairs detailed in this WP, follow these guidelines:

a. Review applicable instructions prior to starting repair.

b. Ensure all necessary support equipment and materials required are available.

c. When required remove enough material from it's source for immediate use only. Ensure material identification ticket remains with the source material at all times. Material that cannot be identified will not be used.

d. To ensure conformity all repair work shall be carefully inspected and compared to applicable instructions at completion of work.

e. A quality assurance (QA) inspector shall examine the finished work.

4. RISER ASSEMBLY.

5. FOUR-LINE RELEASE LANYARD PULL LOOP TACKINGS REPLACEMENT.

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 followed by a square knot and a binder knot.

a. Fully extend pull loop and position the loop between risers.

b. Tack at centerline of riser and 1/2-in. above bottom of pull loop with one turn of size FF thread, single and waxed; tie off (Figure 1).

6. RIPCORD GRIP RETAINER REPLACEMENT.

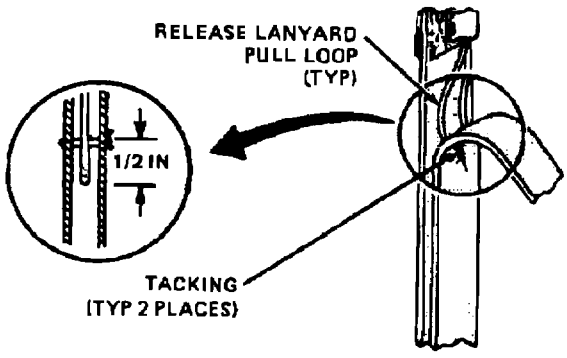

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Figure 1. Replacement of Four-Line Release Lanyard Pull Loop Tackings

Support Equipment

Part Number	Nomenclature
Refer to WP 005 00	Pinlock, Ripcord
DPP-50	Scale

Materials Required

Specification or Part Number	Nomenclature
MIL-C-5040	Cord, Nylon Type I or IA
V-T-295	Thread, Nylon, Size FF, Type I or II, Class A
V-T-295	Thread, Nylon, Size 6, Type I or II, Class A

NOTE

Tie off all tackings with a surgeon's knot followed by a square knot and a binder knot.

a. Remove stitching securing grip retainer cover to riser assembly and slide cover back.

b. Remove stitching securing ripcord grip retainer to webbing riser.

c. Measure 3 1/4 ± 1/8-in. from end of riser assembly and mark for reference.

d. Place grip retainer on riser assembly with lower edge positioned at 3 1/4-in. reference mark.

e. Handstitch grip retainer to riser assembly using a running stitch with size 6 thread, doubled and waxed. Start handstitch by placing an overhand knot 5-in. from bitter end of thread, starting and ending underside of riser assembly at the same hole location; tie off. Repeat procedure for remaining set of holes (Figure 2). (QA)

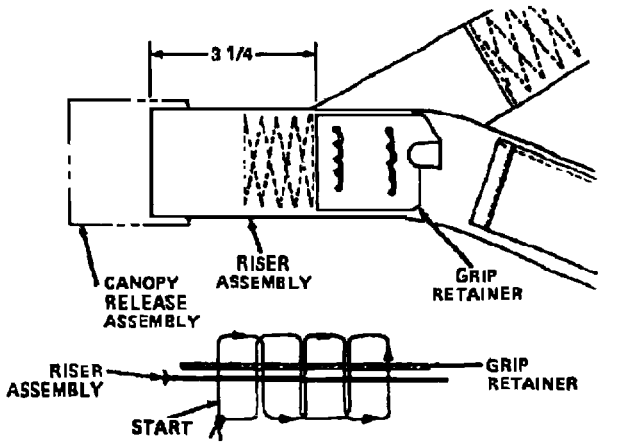

Figure 2. Retainer Replacement Ripcord Grip

f. Ensure grip is fully seated in ripcord retainer.

g. Insert ripcord pinlock on bottom ripcord pin (Figure 3).

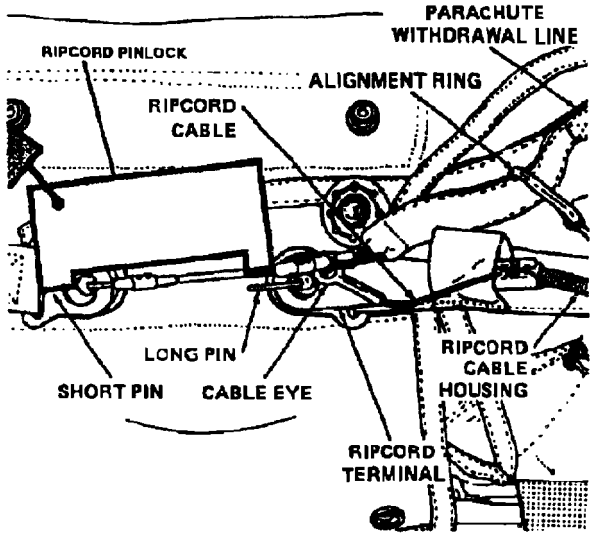

Figure 3. Inserting Ripcord Pinlock

h. Set gage to zero.

i. Attach gage to grip using nylon cord.

j. Apply a straight steady pull, remove grip from retainer. The force required to remove grip from retainer shall be 15 ± 5 lb.

WARNING

Ripcord pinlock must be removed

k. Remove ripcord pinlock. Install ripcord grip in retainer. (QA)

l. Replace cover per Paragraph 7, below.

7. RIPCORD GRIP RETAINER COVER REPLACEMENT.

Materials Required

Specification or Part Number	Nomenclature
MIL-W-4088	Webbing, Nylon, Type XII, 1 3/4-in. Wide, Class 1, 1A or 2
V-T-295	Thread, Nylon, Size FF, Type I or II, Class A

NOTE

Tie off all tackings with a surgeon's knot followed by a square knot and a binder knot.

a. Remove defective or loose retainer cover.

b. Cut a 7-in. length of webbing.

c. Sear both ends of the webbing, to prevent fraying.

d. Mark 1 3/4-in. from bitter ends.

NOTE

Do not wrap cover around harness restraint strap.

e. Wrap webbing around riser assembly over lapping the 1 3/4-in. mark (Figure 4).

f. Tack retainer cover to lower riser in four places with size FF thread, doubled and waxed (Figure 4). (QA)

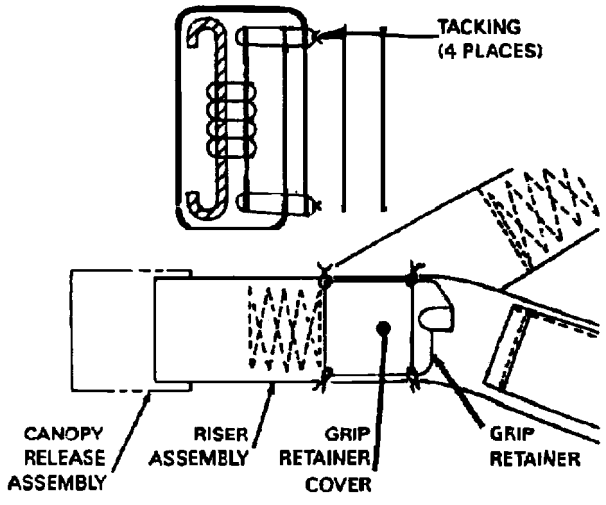

Figure 4. Ripcord Grip Retainer Cover Replacement

8. RISER RESTRAINT STRAP TACKINGS REPLACEMENT.

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 followed by a square knot and a binder knot.

a. Ensure snap fastener on riser restraint strap is secured to snap fastener on riser.

b. Tack thru both riser risers and thru riser restraint strap using two turns size E thread, single and waxed; tie off (Figure 5).

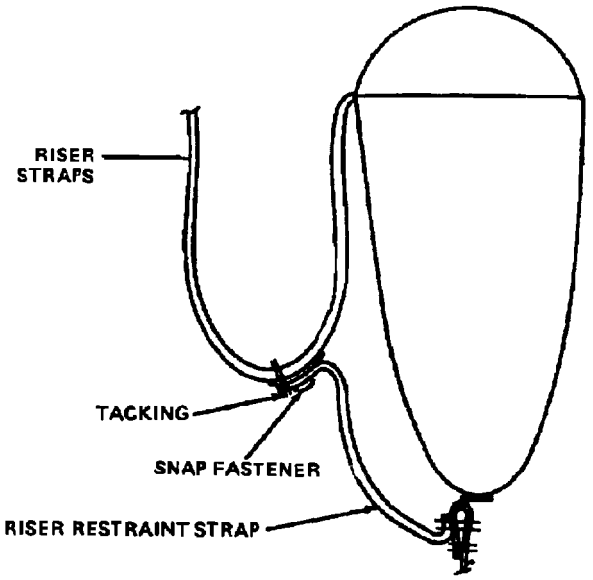

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Figure 5. Replacement of Riser Restraint Strap Tackings

9. RIPCORD HOUSING TACKINGS REPLACEMENT.

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 followed by a square knot and a binder knot.

a. Measure 1/2-in. down from bottom of ripcord grip tunnel. Tack ripcord cable housing to riser with three turns of size 6 thread, doubled and waxed; tie off (Figure 6).

b. Measure 1/2-in. up from top of ripcord tunnel and tack ripcord housing to riser with three turns of size 6 thread, doubled and waxed; tie off (Figure 6).

c. Tack bottom of ripcord tunnel closed with two turns of size 6 thread, doubled and waxed; tie off (Figure 6).

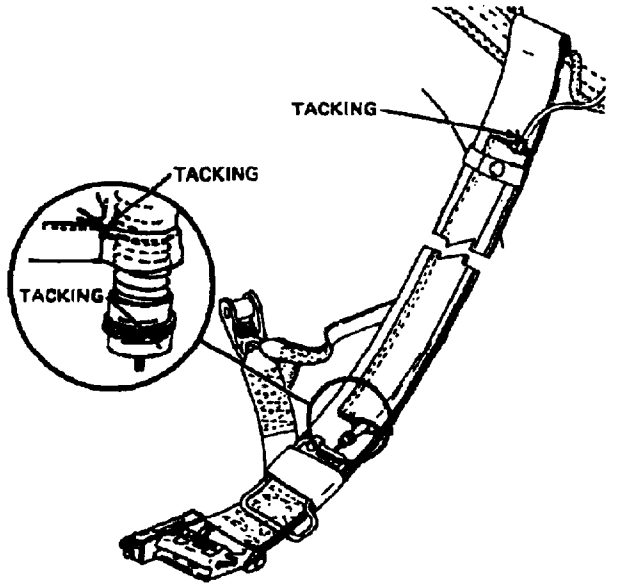

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Figure 6. Replacement of Ripcord Housing and Channel Tackings

10. CONTAINER ASSEMBLY.

11. SPRING OPENING ASSEMBLY REPLACEMENT.

Materials Required

Specification or Part Number	Nomenclature
60A113D11-7 or MS70105-6	Spring Assembly, Container Opening

a. Measure length of replacement spring opening assembly. Required length is 7 7/8 ± 1/8-in. when measured from end of one hook to end of other hook with no tension applied.

b. Inspect spring opening assembly for broken springs, contamination, corrosion, cuts, fraying, bent or broken hooks, elasticity, and loose or broken stitching.

c. With hook facing down, attach end of spring opening assembly without pull tab to lower eyelet on side of container. Crimp hook to eyelet.

d. Attach opposite end of spring opening assembly to eyelet on end flap and crimp.

12. RIPCORD PIN RETENTION TIE REPLACEMENT.

Materials Required

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

a. Loop a 12-in. length size E thread, single and waxed under short pin (Figure 7). Secure pin by bringing thread ends together and forming three to five half-hitches around ripcord cable directly behind ripcord pin ferrule ending with a binder knot.

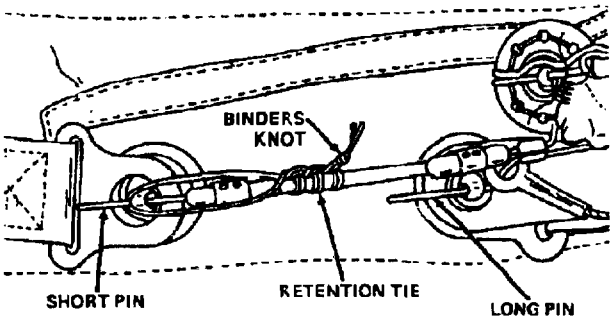

Figure 7. Replacement of Ripcord Pin Retention Tie

b. Trim excess within 1/2 to 3/4-in. from binder knot.

13. SPECIAL PIN RETENTION TIE REPLACEMENT.

Materials Required

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

a. Route withdrawal line sleeve assembly thru alignment ring. Place ring on closure pin line over locking cone and then insert the sleeve assembly special pin. (Figure 8).

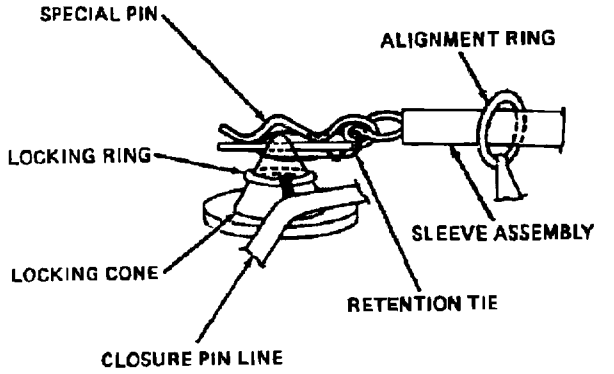

Figure 8. Replacement of Special Pin Retention Tie

b. Safety-tie special pin by passing a length of size A thread, single and unwaxed, under end of pin and thru loop formed at back of pin.

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INTERMEDIATE AND DEPOT MAINTENANCE

PACKING PROCEDURES

NES-8B PERSONNEL PARACHUTE ASSEMBLY

PART NO. 574AS100-4

List of Effective Work Package Pages

Reference Material

Alphabetical Index

Record of Applicable Technical Directives

None

1. GENERAL.

a. This Work Package (WP) provides packing instructions for the NES-8B Personnel Parachute Assembly.

b. Packing instructions are provided with the assumption that they will be carried out under ideal conditions in a parachute loft WP 003 00. When a parachute assembly must be packed under unfavorable conditions, provisions must be made to protect it from possible damage and excessive humidity.

c. In no case shall the packing of a parachute assembly be interrupted after the packing operation has been started. If the packing operation is interrupted due to unforeseen circumstances, the parachute assembly shall be completely repacked per the instructions contained in this WP.

d. Quality Assurance (QA) points have been included in the packing procedures. When a procedural step is followed by "(QA)" there is a quality assurance requirement. Witnessing of QA steps may be delayed by QA if their satisfactory completion is verified in later steps.

e. During packing procedures, packer shall be positioned on left side of packing table, and helper on right side when viewed from harness/riser end of table.

2. PRELIMINARY PROCEDURES.

Support Equipment Required

Part Number	Nomenclature
Refer to WP 005 00	Fid
Refer to WP 005 00	Guide Tube
TMA2	Hex Head Driver 1/16-in Bit
Refer to WP 005 00	Long Bar
FLUKE 77	Multimeter
TQS6	Torque Meter
Refer to WP 005 00	Pinlock, Ripcord
DPP-50	Scale, Spring
Refer to WP 005 00	Shot Bag (4)
11-1-3512	Small Line Separator
Refer to WP 005 00	Temporary Locking Pin (4)

Materials Required

Specification or Part Number	Nomenclature
PIA-C-5040	Cord, Nylon, Type I or IA
PIA-C-5040	Cord, Nylon Type IIA or III
MIL-R-1832	Rubberbands, Retaining Type I
MS27039-0810	Screw, Machine (2)
MIL-S-22473	Sealing Compound, Grade H
V-T-295	Thread, Nylon, Size A, Type I or II Class A
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
AN960PD10	Washer, Flat (2)

a. Ensure that all support equipment and materials required are available prior to starting.

b. Inspect packing tools for nicks, burrs, or sharp edges which may cause damage to the parachute assembly.

c. Count and record number of packing tools.

d. Clean packing table.

3. LAYOUT OF RIGGED PARACHUTE ASSEMBLY.

a. Completely open parachute container and detach spring opening assemblies.

b. Remove two screws securing stowage board to container.

c. Remove canopy and stowage board evenly from inside of container.

d. Disconnect the pull down vent (PDV) lines, pilot parachute, and withdrawal line from apex.

e. Connect one end of a 16 ft. Type IIA or III nylon cord to vent lines and other end to large loops of PDV lines.

f. Remove suspension lines from stowage board.

g. Lay out canopy and suspension lines and stretch full length on a clean packing table.

h. Locate gore 28 (nameplate gore) and place bottom-most in center of packing table.

i. Attach tension strap hook to canopy vent lines.

j. Separate suspension lines into two equal groups with lines 15 thru 28 on packer's side and lines 1 thru 14 on helper's side. Grasping each group of lines, walk from skirt hem to connector links removing any twists between the two groups (Figure 1).

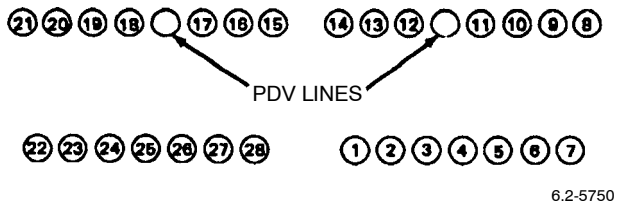


Figure 1. Arrangement and Orientation of Suspension Lines on Connector Links

k. Insert tension hooks into connector links and then into packing table.

l. Apply slight tension to canopy using tension strap.

m. Pull canopy vent collar below vent hem. Ensure that vent hem is even.

n. Straighten vent hem if necessary.

o. Pull vent collar back to original position.

p. Remove rubberbands from PDV lines.

q. Remove connector link ties.

r. Tension canopy.

4. INSPECTION (SPECIAL).

a. Maximum scheduled repack cycle is 630 days.

5. SERVICE LIFE CHECK AND CONFIGURATION UPDATING.

NOTE

Unless otherwise noted, parachute component life shall start on the month of the date of manufacture and expire on the last day of that month.

a. All internal service life components, including cartridges, shall be replaced if service life expires prior to the next repack cycle. Repack cycles may be shortened to correspond to the first component that is expiring prior to the next inspection cycle. An external overage component (i.e. Parachute Harness Sensing Release Unit Cartridge) can be replaced without a parachute repack.

NOTE

Upon initiation of any Quality Deficiency Report (QDR), contact the In-Service Support Team at NAWCWD, China Lake, CA.

b. When replacing an external overage component without a parachute repack, draw a single red line through any information pertaining to that component on the Parachute Record (OPNAV 4790/101). The replacement component will be annotated on the next available line. The QA who witnessed the task shall apply the QA stamp to the right of the entry and complete the VIDS/MAF (OPNAV 4790/60).

c. A parachute assembly may be opened to permit compliance with a Technical Directive. After completion of directive, the parachute assembly repack cycle may be re-based if all parachute components have the necessary life available or may be returned with the original repack date in order to keep it aligned with the actual aircraft inspection cycle.

d. When a component reaches the service/total life limit, it shall be returned to supply for disposition.

e. If parts received from supply are lacking a date of manufacture and are new in manufacturer's packaging, they may be used for one complete repack cycle, then removed. Place "No Date of Manufacture" in the Date of Manufacture's block on the Parachute Record (OPNAV 4790/101). Submission of a Quality Deficiency Report (QDR) shall follow each occurrence.

f. Components without a service/total life shall be removed from service if the components do not pass inspection, as determined by Quality Assurance Representative (QAR) or Collateral Duty Inspector (CDI).

g. Check date placed in-service and date of manufacture on each parachute part for service/total life as follows:

Nomenclature	Service Life (Yr)	Total Life (Yr)
Battery	4	4
Canopy Assembly	None	15
Cartridge MW19	Refer to NAVAIR 11-100-1.1	
Cross-Connector Strap	(See Note 1)	(See Note 1)
Electronics Package Assembly	None	8
Pilot Parachute		15
Pilot Parachute Connector Strap		15
Riser Assembly	None	15
Withdrawal Line	2	None

Note 1: Replace at Canopy Assembly replacement.

(1) Markings for completeness, legibility, and agreement with information on Parachute Record (OPNAV 4790/101).

(2) Compare configuration of parachute assembly to that shown in NAVAIR 13-1-6.2 Record of Applicable Technical Directives, and Illustrated Parts Breakdown.

6. SUSPENSION LINE CONTINUITY CHECK.

a. Grasp line 15 on left side of gore 14 and raise line to a height sufficient to ensure that the line is free of dips and twists from skirt hem to connector links. Continue this procedure with lines 16 thru 28. (QA)

b. Use same procedure as in paragraph a, above on right side of gore 14 except that packer shall start with line 14 and work thru line 1.

c. Pass PDV lines under top group of suspension lines and attach to top connector links between lines 11 and 12, and 17 and 18 (Figure 1).

7. CANOPY ASSEMBLY.

a. Canopy skirt hem, fabric surface, diagonal seams, radial seams, vent hem, water deflation pockets, for cuts, holes, ruptures, contamination, deterioration, and loose or broken stitching.

b. Suspension lines and canopy apex lines for fraying, ruptures, protruding inner core lines, burns, contamination, and presence of twists.

c. Attachment of suspension lines at skirt hem for security and condition of V-tabs.

d. Attachment of four-line release anchor loops to suspension lines 3 and 26.

e. Attachment of four-line release lanyard to anchor loops on suspension lines 3 and 26.

f. Activate the four-line release and retacking per WP 004 00. (QA)

g. PDV lines for the following:

(1) Lines for cuts, tears, ruptures, or contamination.

(2) Weak link for cuts, tears, ruptures, or contamination.

(3) Proper attachment to connector links.

(4) Lines for twists.

h. Connector links for corrosion, distortion, nicks, burrs, sharp edges, and cracks.

NOTE

For Double "L" Connector Link, refer to WP 014 03 for disassembly, assembly, and inspection instructions.

i. Connector links for defective yoke and plate assemblies. Maximum of 1/32-in. play allowable in plate.

j. Torque seal unbroken with yoke and plate assemblies installed with knurled portion facing up and screw heads facing outboard (Figure 2). (QA)

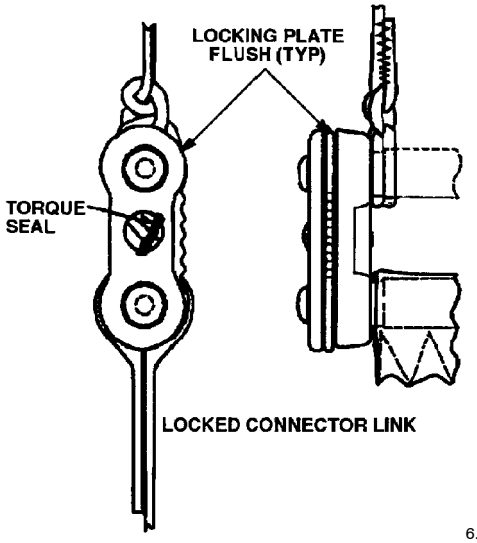


Figure 2. Torque Seal Unbroken

8. PILOT PARACHUTE ASSEMBLY.

a. Fabric surfaces and seams for cuts, tears, fraying, and loose or broken stitching.

b. Seam area at crown for seam separation.

c. Spring assembly for distortion.

d. Loose or broken tackings (4 places) at bottom of coil spring.

e. Locking cone and grommet for cracks, condition and security of attachment.

f. Bridle for cuts, fraying, and loose or broken stitching.

9. WITHDRAWAL LINE.

a. Webbing for contamination, cuts, fraying, deterioration, and loose or broken stitching.

b. Cable and closure pins for corrosion, broken strands, nicks, loose swage fittings, bends, or burrs.

c. Quick release connector assembly fitting for corrosion, cracks, bends, dents, nicks, burrs, sharp edges, stripped threads, damaged swivel, and presence of spring assembly.

d. Special pin and ring for security of attachment, corrosion, burrs, and distortion.

e. Sleeve assembly for contamination, deterioration, and security of stitching; markings for presence and clarity (Figure 3).

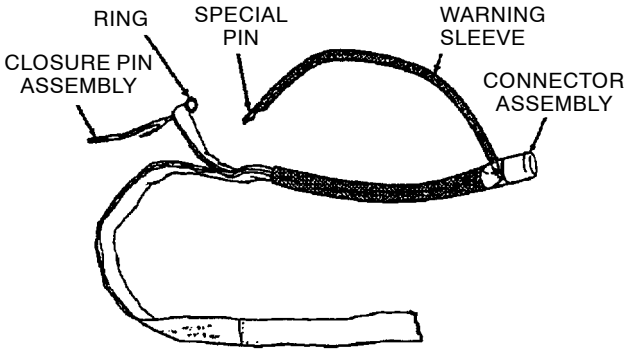


Figure 3. Withdrawal Line

10. RISERS AND CROSS-CONNECTOR STRAPS.

a. Webbing for contamination, rust at points of contact with metal parts, cuts, twists, fading, wear, fraying, burns, abrasions and loose or broken stitching tackings.

b. Four-line release lanyard flute and ripcord tunnel for wear and proper attachment.

c. Four-line release and release lanyard pull loops for loose or broken tackings.

d. Ripcord grip retainer for corrosion, damage, and security of attachment.

e. Ripcord grip retainer cover for condition and tackings.

f. Roller fitting assembly for corrosion, damage, and security of attachment.

g. Cross-connector straps for contamination, cuts, fraying, burns, and loose or broken stitching.

h. Cross-connector straps for proper attachment to connector links.

11. RIPCORD ASSEMBLY.

a. Grip, cable housing, terminal, and terminal ball for signs of corrosion, bends, dents, cracks, loose swaged joints, and breaks.

b. Cable eyelet for cracks.

c. Housing to riser tacking for security of attachment.

12. CONTAINER ASSEMBLY.

a. Hardware, fabric, seams, and webbing, for holes, cuts, tears, fraying, contamination, and deterioration.

b. Grommets, cones, snap fasteners and end tab fasteners for security of attachment, cones for cracks, corrosion, nicks, and gouges.

c. Container for crazing and cracks.

d. Spring opening assemblies for broken springs, contamination, corrosion, cuts, fraying, bent or broken hooks, elasticity, and loose or broken stitching.

e. Spring opening eyes (8) for security of attachment.

f. Snap fastener for nicks, gouges, corrosion, security of attachment, and proper operation.

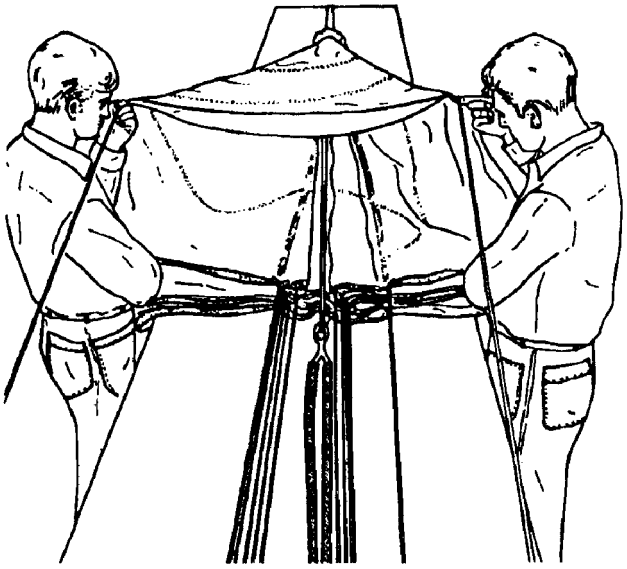
g. Suspension line storage board assembly for condition, corrosion and contamination.

h. Restraint straps for deterioration and wear, brackets for corrosion; riser straps for elasticity.

13. PACKING.

14. WHIPPING AND FOLDING OF CANOPY.

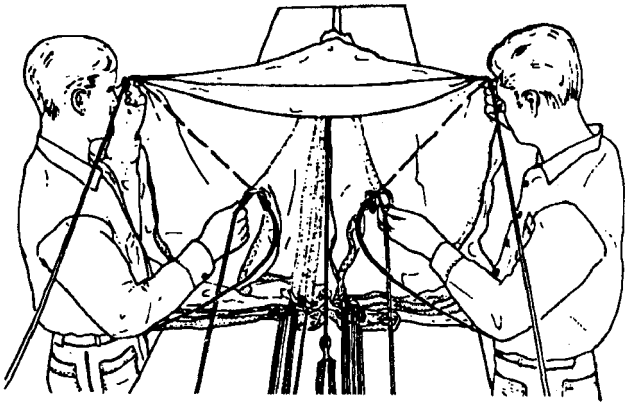
a. Packer and helper shall lift suspension line on each side of top gore up and out. Skirt hem between lines shall be taut so that canopy apex can be seen on inside, while holding suspension lines up. Packer and helper shall whip gore hanging from line outwards to prepare canopy for folding (Figure 4).



6.2-5179A

Figure 4. Lift Suspension Line on Each Side of Nameplate

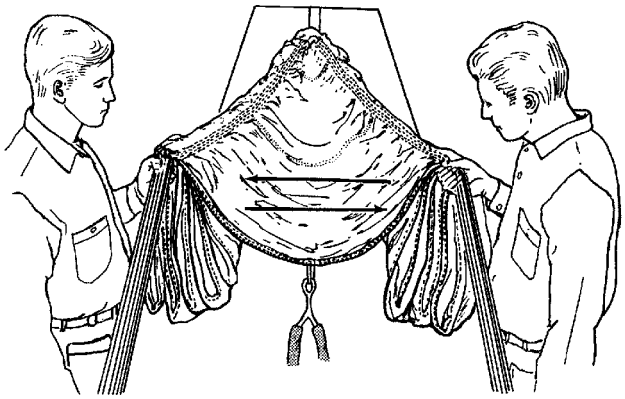
b. Draw next suspension line upwards to suspension line in hand, using a rapid, circular motion (Figure 5).



6.2-5179B

Figure 5. Draw Next Suspension Line Upwards

c. Continue whipping operation for all gores. Ensure that radial seams are not overlapped by gore material. Move whipped gores rapidly back and forth across packing table (Figure 6).

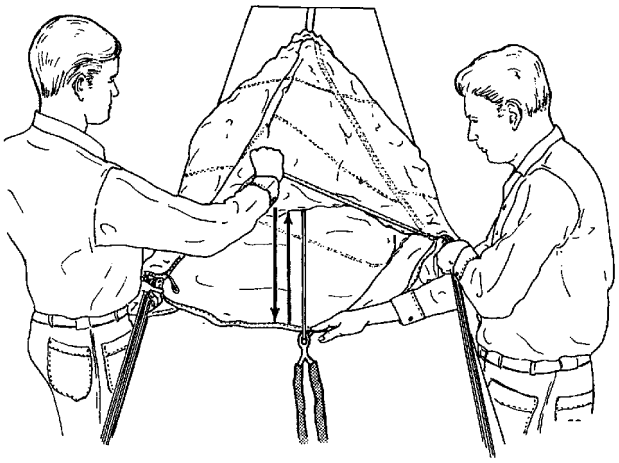


6.2-5179C

Figure 6. Continue Whipping Operation

d. The two groups of suspension lines shall be stretched to edges of packing table with folded gores hanging over sides. Packer and helper shall grasp all folds at outer edges on skirt hem and hold suspension line groups at edges of packing table. Packer and helper shall simultaneously move folds up and down rapidly, in a whipping motion, to end wrinkles.

e. Packer shall flap top gore up and down at skirt hem center as helper holds bottom gore at skirt hem center (Figure 7).



6.2-5179D

Figure 7. Packer Shall Flap Top Gore

f. On signal, both packer and helper shall draw their respective gores, at skirt hem centers, towards table edge while at same time bringing suspension line groups to center of packing table (Figure 8).

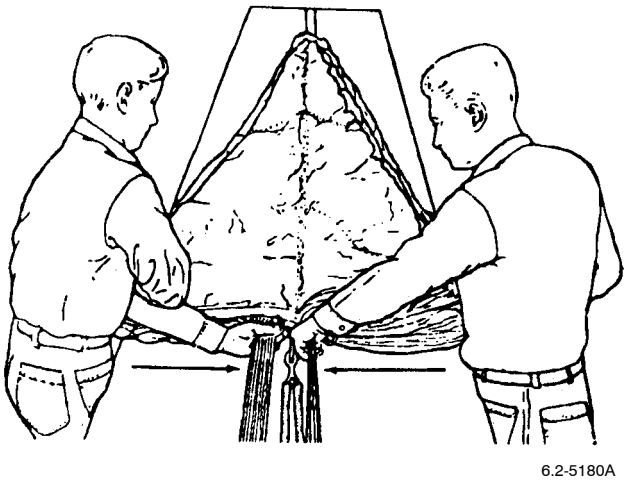


Figure 8. Draw Respective Gores to Center

g. Insert suspension line groups into their respective slots in small line separator and place shot bag on lines. Packer shall place second shot bag across skirt hem on left side of suspension lines. PDV lines are routed under the small line separator.

h. Helper shall rotate all gores as a group, except bottom gore, from helper's side to packer's side of packing table (Figure 9).

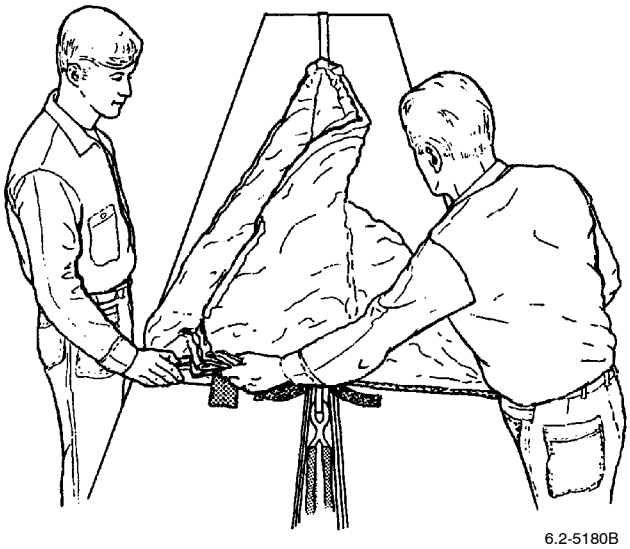


Figure 9. Helper Rotate All Gores to Packer's Side

i. Helper shall straighten and smooth bottom gore on helper's side of packing table throughout its length to apex (Figure 10).

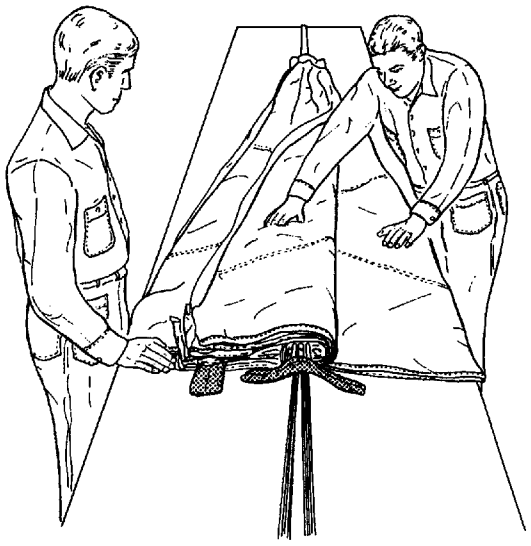


Figure 10. Helper Shall Straighten and Smooth Gores

j. Packer shall return folded gores about shot bag to helper's side of packing table. Helper shall straighten and smooth top gore and place a shot bag on skirt hem (Figure 11).

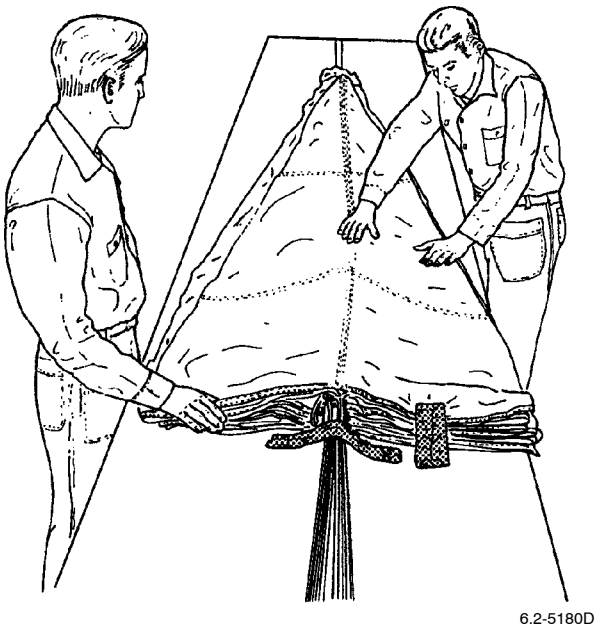


Figure 11. Packer Shall Return Folded Gores Above Shot Bag

k. Packer shall rotate all gores as a group, except bottom gore, from packer's side to helper's side of packing table (Figure 12).

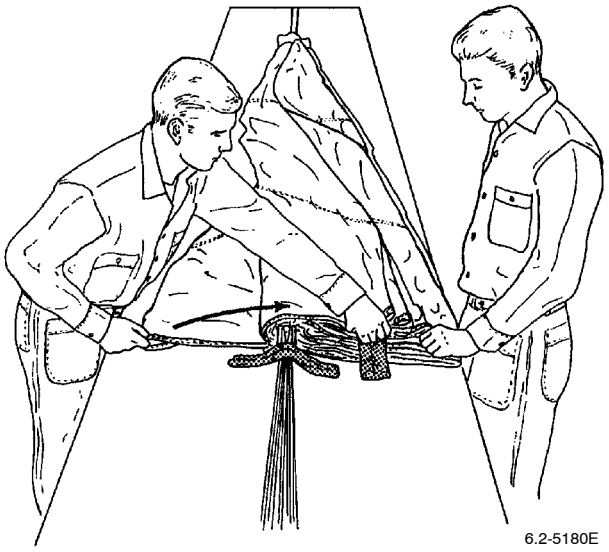


Figure 12. Packer Shall Rotate All Gores

l. Packer shall straighten and smooth bottom gore on packer's side of packing table throughout its length to apex (Figure 13).

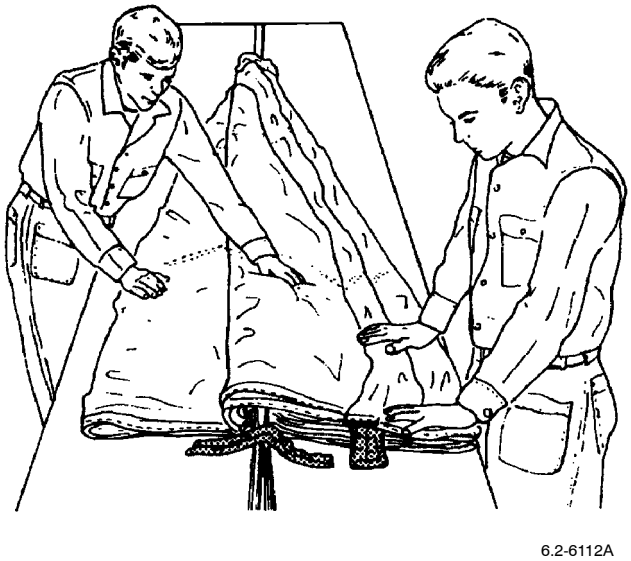


Figure 13. Packer Shall Straighten and Smooth Gores

m. Helper shall return folded gores above shot bag to helper's side of packing table. Packer shall straighten and smooth top gore. Remove shot bag from canopy (Figure 14).

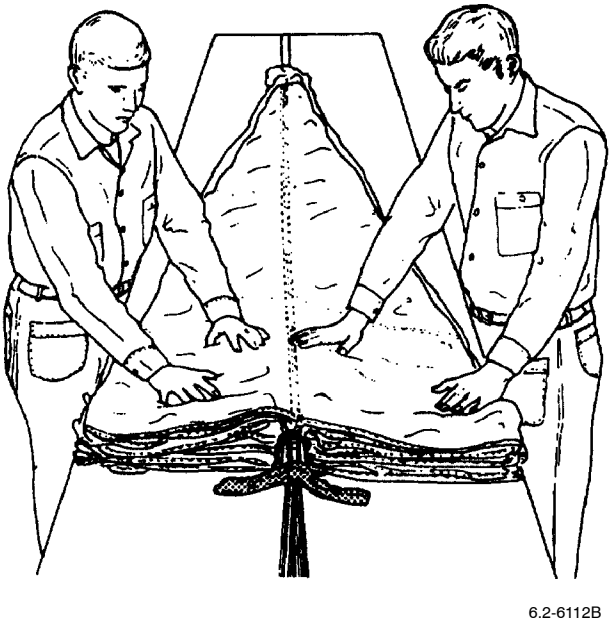


Figure 14. Helper Shall Return Gores Above Shot Bag

n. Packer and helper shall grasp skirt hem at midsections of gores and rotate towards suspension lines (Figure 15).

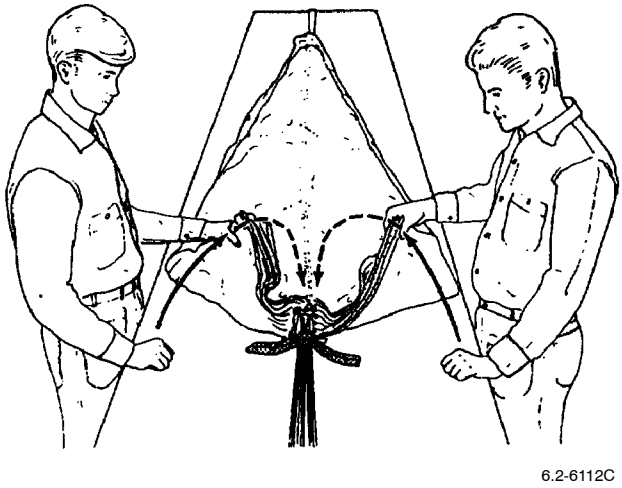


Figure 15. Grasp Skirt Hem and Rotate Towards Suspension Lines

o. Packer and helper shall grasp the bottommost gore fold and extend outwards aligning the edge of the skirt hem and suspension line V-tab reinforcements. The remaining 13 gores shall be aligned in a similar manner. Ensure that all V-tab reinforcements face same direction and that 14 gores have been counted on each side (Figure 16).

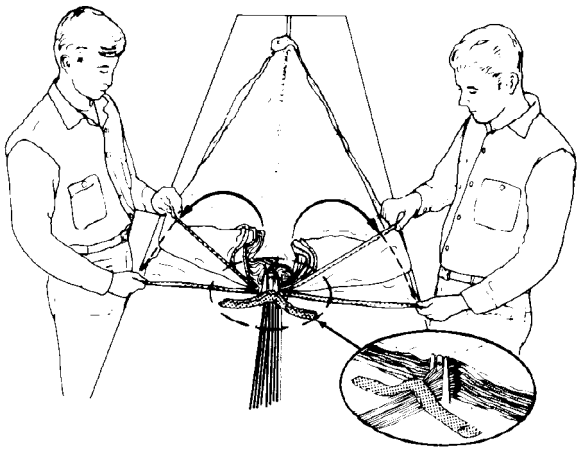


Figure 16. Grasp Gore Fold and Extend Outwards

p. Packer and helper shall grasp skirt hem and folded gores and S-fold canopy towards center. Butt S-folds together. The canopy cannot be S-folded throughout entire length, but will break two-thirds the distance to apex. Place two shot bags on folded canopy (Figure 17).

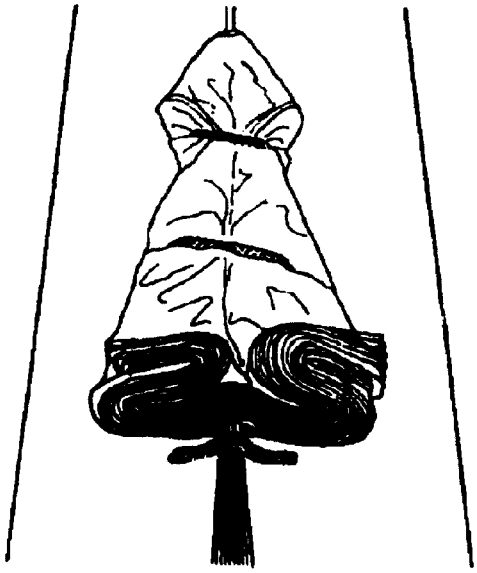


Figure 17. Grasp Skirt Hem and Folded Gores and S-Folds Towards Center

15. ATTACHMENT OF PULLDOWN VENT LINES, PILOT PARACHUTE, AND WITHDRAWAL LINE TO CANOPY APEX.

a. Accordion fold PDV lines at weak links into 5-in. folds and secure with rubberbands (Figure 18).

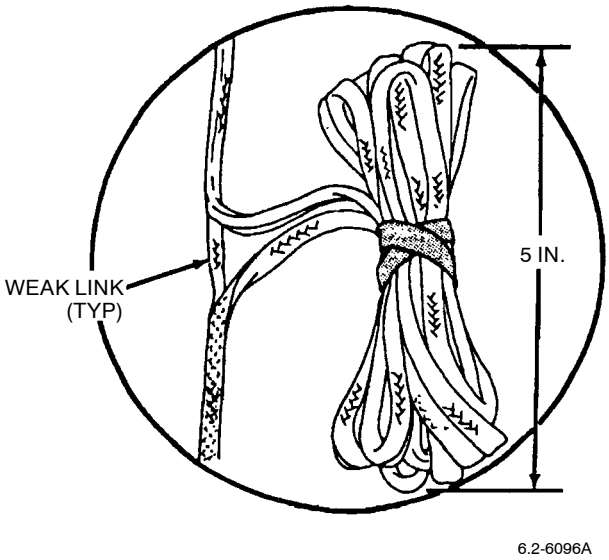


Figure 18. Accordion Fold PDV Lines

b. Release tension from canopy and remove tension strap from canopy apex but not from PDV line tension cord.

c. Separate suspension lines from PDV lines about 14 ft. from connector links and spread each group to edge of table.

d. While helper holds suspension lines at edges of table, packer shall draw canopy down center of table, between suspension lines, to a point where suspension lines between helper's hands and skirt hem become taut and PDV lines protrude thru vent hem (Figure 19).

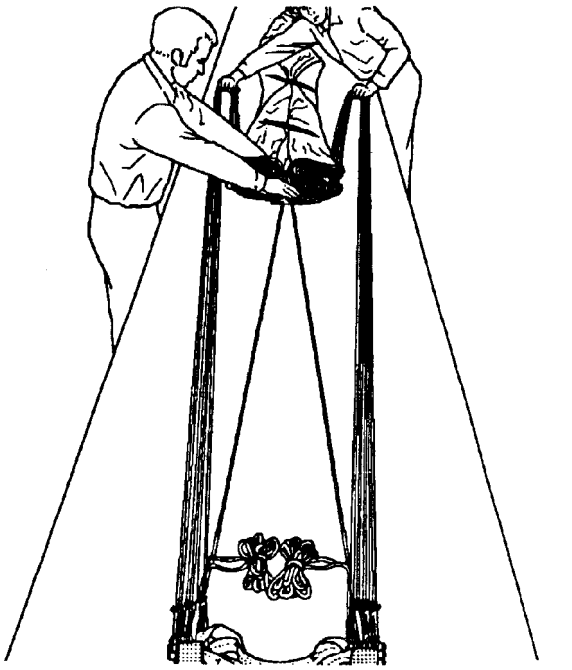


Figure 19. Helper Holds Suspension Lines at Edges of Table

e. Remove messenger cord from PDV lines at apex.

f. Count 14 vent lines in sequence. pass pilot parachute connector strap around vent lines and thru loops in PDV lines. Form a lark's head knot by passing pilot parachute thru loop end of connector strap and drawing tight (Figure 20).

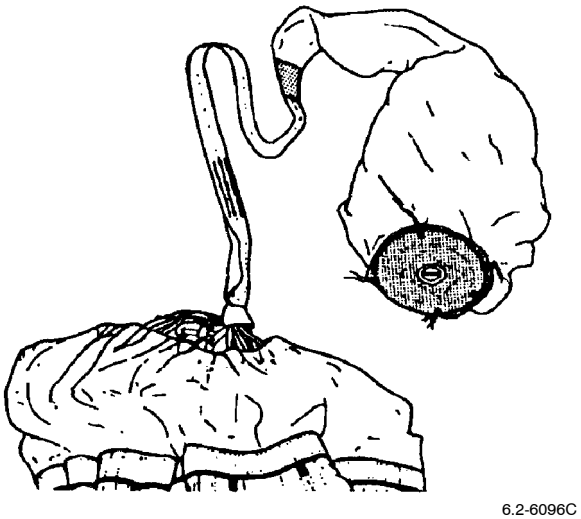


Figure 20. Pass Pilot Parachute Connector Strap Around Vent Lines

g. Pass loop end of withdrawal line around vent lines and thru loops in PDV lines to left of pilot parachute. Form a lark's head knot by passing free end of withdrawal line thru withdrawal line loop and pulling tight. Closure pins must be facing up when withdrawal line is drawn tight. Place pilot parachute and withdrawal line on top of canopy (Figure 21). (QA)

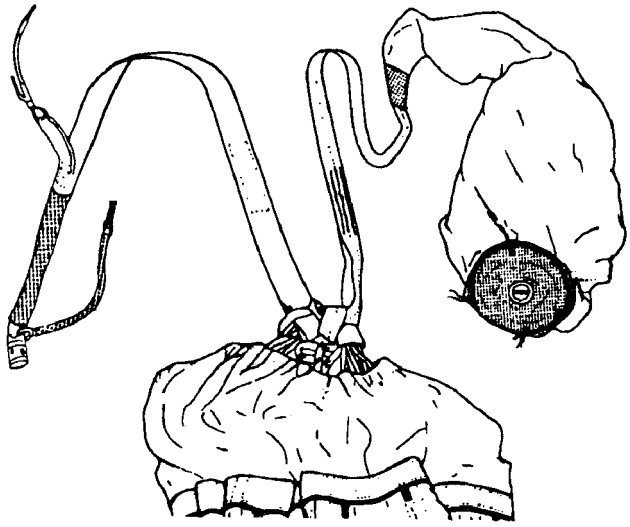


Figure 21. Pass Loop End of Withdrawal Line Around Vent Lines

16. INSTALLATION OF CONNECTOR LINK TIES.

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 tension hooks from packing table. Remove connector links from tension hooks.

b. Tie each group of connector links together on each side with one turn size FF thread, single and waxed; tie off (Figure 22).

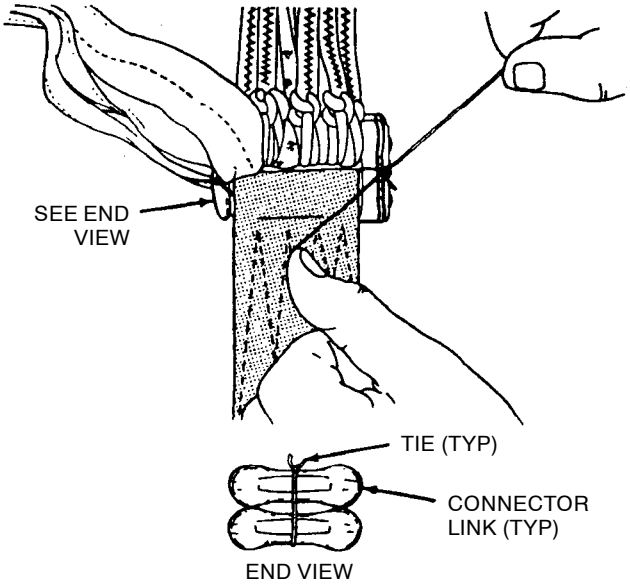


Figure 22. Installation of Connector Link Ties

17. STOWAGE OF SUSPENSION LINES.

NOTE

When stowing suspension lines, incorporate the use of a suspension line stowing aid as shown in WP 005 00. Helper shall hold suspension lines with stowing aid in stowage compartment until the stows are inserted properly.

Beeswax may be lightly applied to the stowage aids as a lubricant.

Connector links may be attached to tension hooks to hold in place.

a. Position line stowage board under suspension lines, 5-in. from connector links. Retention angles with dome nut affixed are turned upward (Figure 23).

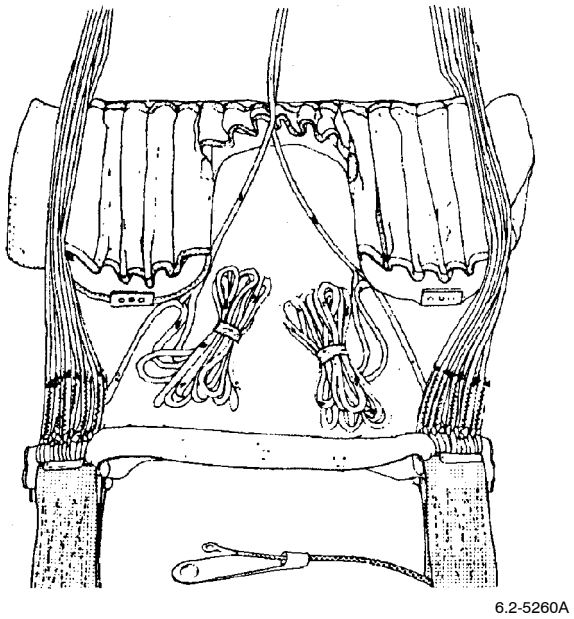


Figure 23. Positioning of Line Stowage Board

b. Packer and helper shall each pass a length of line stowage aid thru outboard stowage channels and form first bight in suspension lines. Do not stow PDV lines. Ensure line stowage board remains 5-in. from connector links (Figure 24).

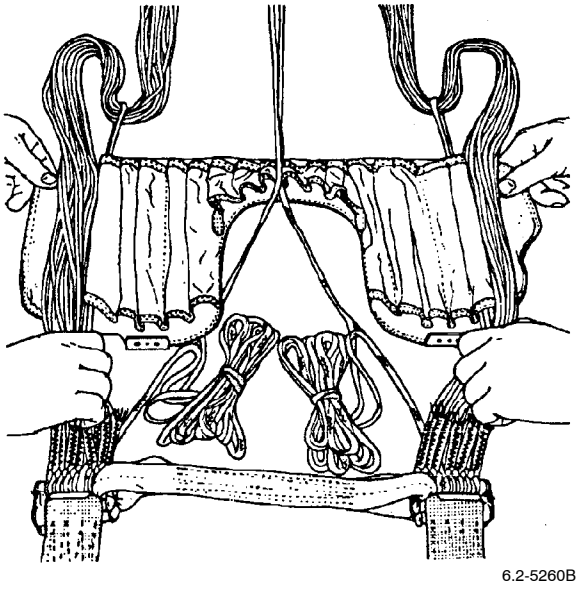
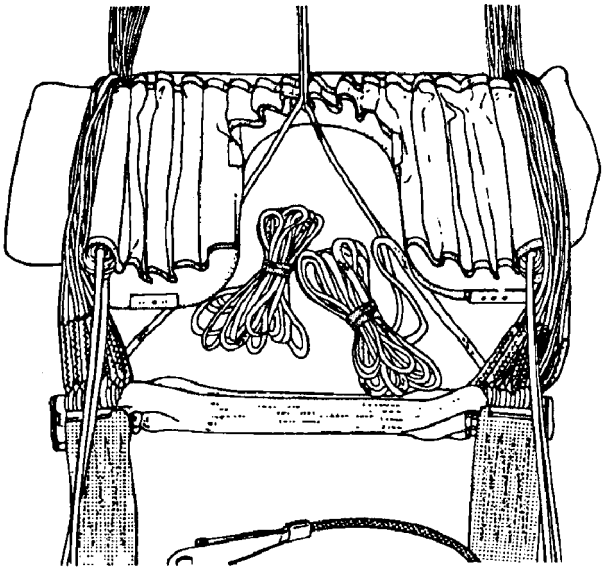


Figure 24. Pass a Length of Line thru Stowage Channel

CAUTION

Rapid removal of line stowage aids can cause damage to suspension lines.

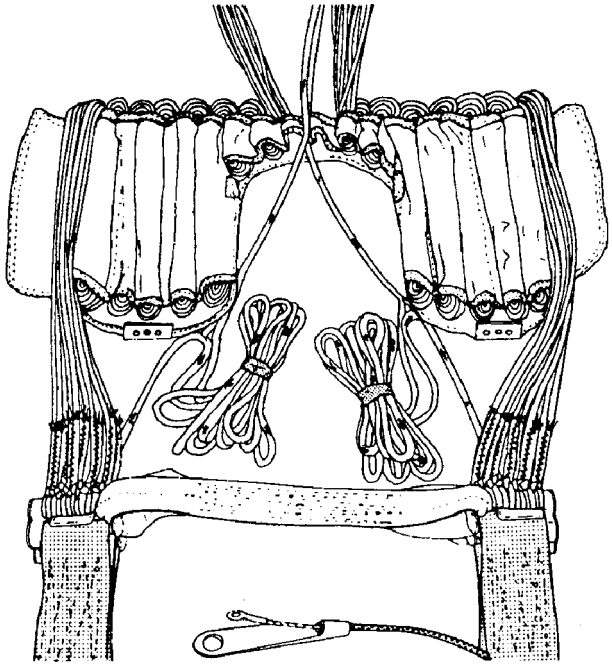
c. Packer and helper shall draw bights thru outboard channels to edge of stowage board. Remove line stowage aids slowly (Figure 25).



6.2-5260C

Figure 25. Draw Bights Thru Channels

d. Continue stowing suspension lines to center of board excluding PDV lines. Do not stow two center stowage board channels (Figure 26).



6.2-5260D

Figure 26. Continue Stowing Lines

e. Turn stowage board toward canopy so retention angles face down (Figure 27).

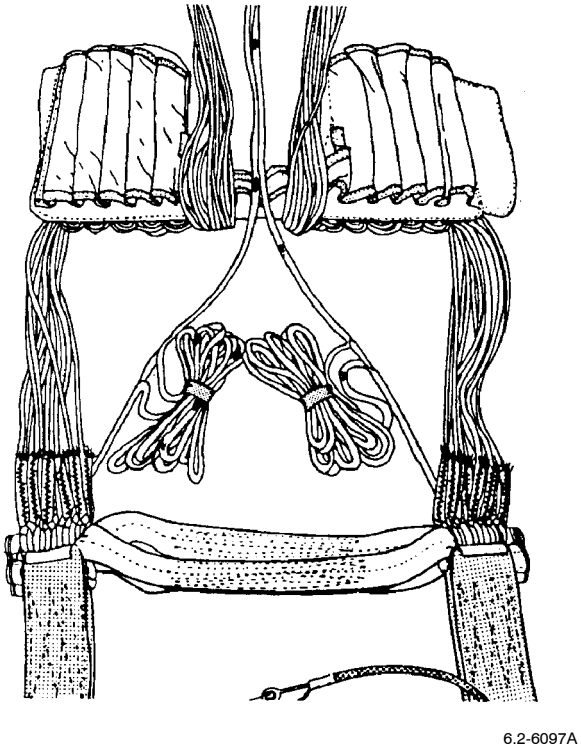


Figure 27. Turn Stowage Board

f. Begin stowing suspension lines in sixth stowage channel from outboard edge of stowage board. Do not stow PDV lines (Figure 28).

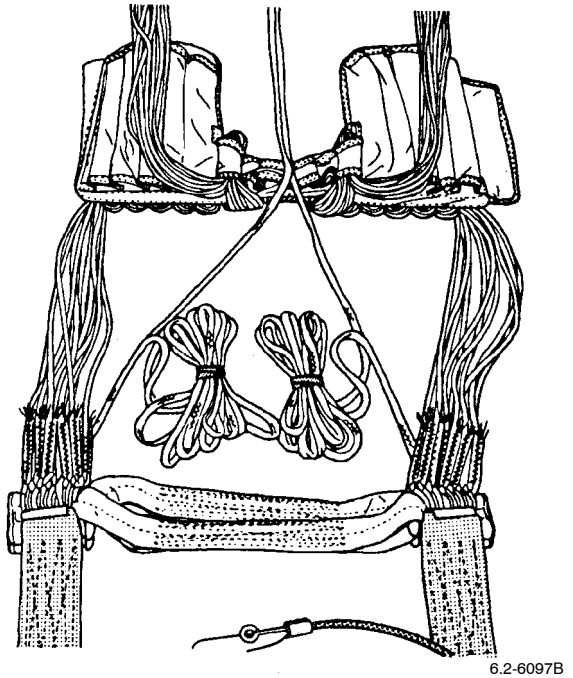


Figure 28. Begin Stowing in Sixth Channel

g. Continue stowing suspension lines to outboard edges of stowage board. Begin stowing PDV line in third stowage channel from outboard edges of stowage board (Figure 29).

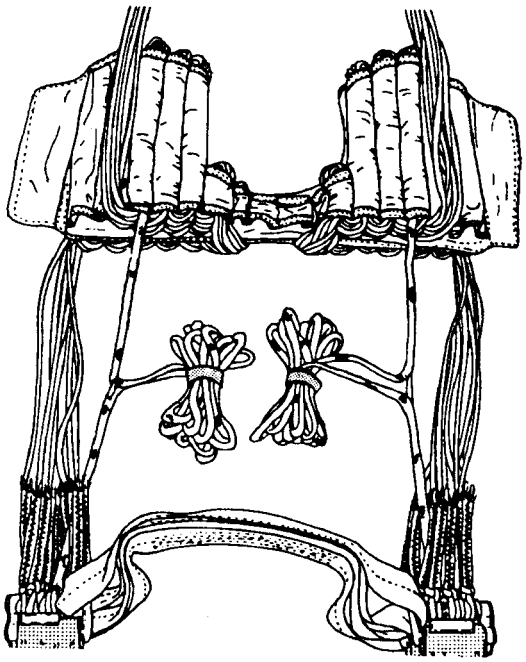


Figure 29. Continue Stowing

h. When suspension lines are stowed, there shall be about 18-in. of unstowed lines (Figure 30). (QA)

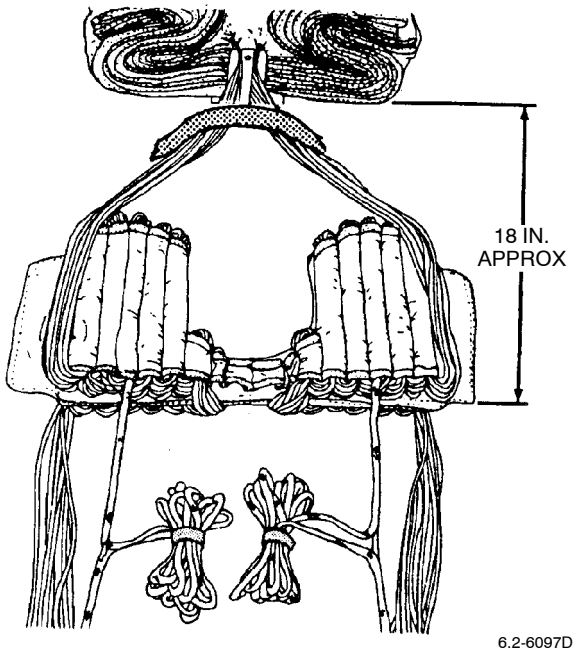


Figure 30. 18-in. of Unstowed Lines

18. INSTALLATION OF LINE STOWAGE BOARD INTO CONTAINER.

a. Rotate risers and line stowage board over toward canopy, so retention angles with dome nuts affixed face up and turned away from canopy. Position container on table with open end facing line stowage board and side ripcord protector flap facing packing table (Figure 31). (QA)

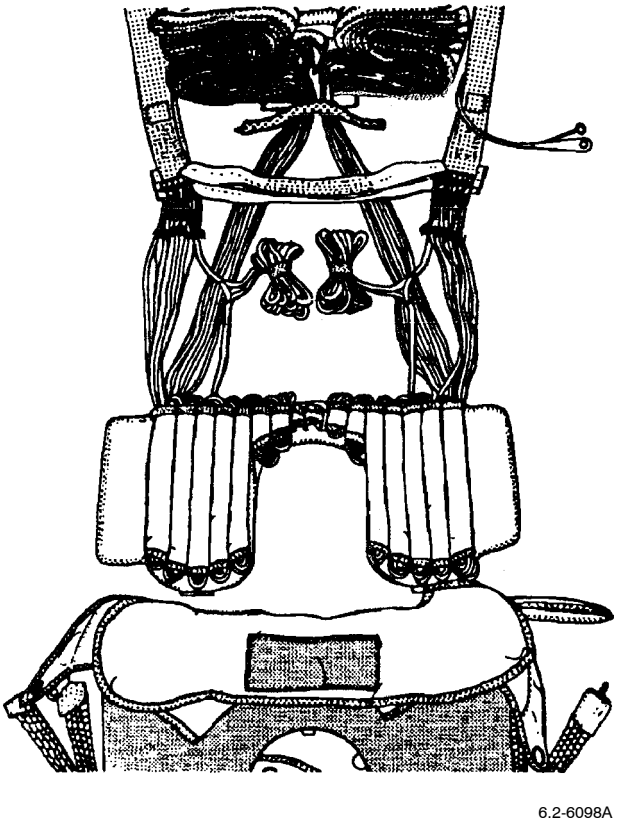


Figure 31. Rotate Risers and Stowage Board

WARNING

Ensure that suspension lines are not trapped between suspension line stowage tray retention angles and container.

b. Remove small line separator and shot bag. Slide container toward line stowage board inserting line stowage board into container. Do not move line stowage board toward container. Ensure suspension lines do not become trapped under line stowage board retention angles. Pilot parachute flap shall not be wedged between line stowage board and container. (QA)

c. Align holes in line stowage board retention angles with grommets in bottom of container legs. Align brackets on container restraint system assemblies above grommets in bottom of container legs. Ensure restraint assembly bracket is turned downward in relation to top of container. Insert screw thru one washer, restraint assembly bracket, and grommet and then into each container leg. Lightly apply sealing compound to screwheads and tighten screws in line stowage board affixed dome nuts (Figure 32). (QA)

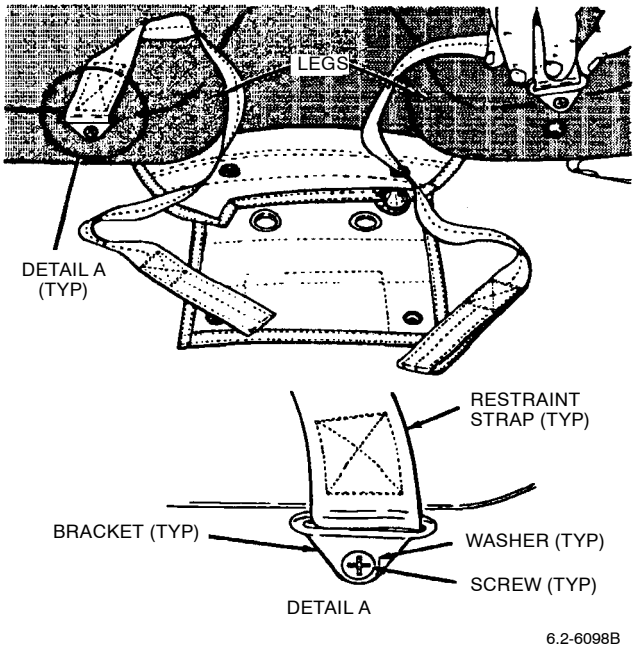


Figure 32. Alignment of Holes

19. STOWAGE OF CANOPY.

a. Place container in container stand. Attach hook tape patch on risers to pile tape patches on inside of container. Stow PDV lines between connector links and stowage board in bottom of container legs. Stow suspension line between stowage board and canopy skirt hem behind stowage board (Figure 33). (QA)

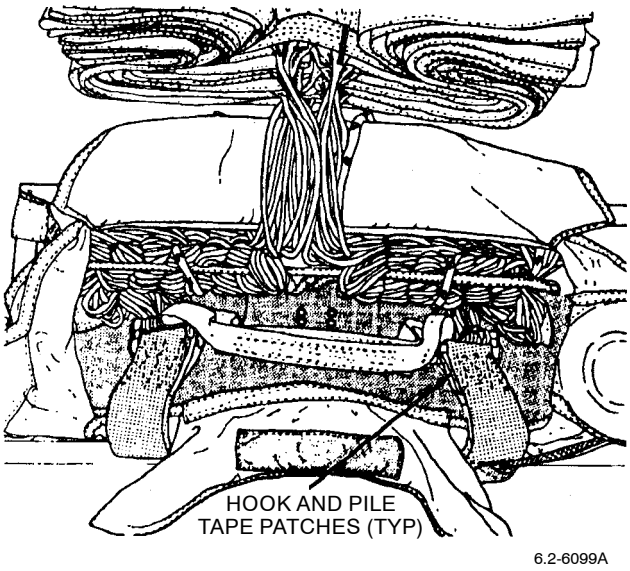


Figure 33. Place Container in Stand

b. Remove shot bag from skirt hem. (QA)

c. Stow all but about 6 ft. of canopy into container. Use the following illustration as a guide while stowing canopy (Figure 34).

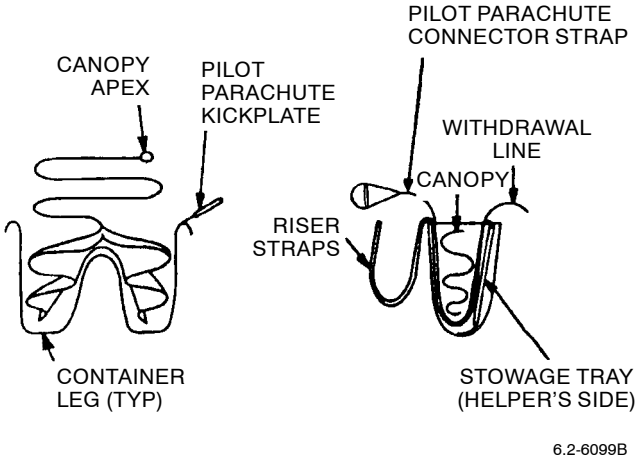


Figure 34. Stow All But 6 ft.

d. Spread suspension line groups about 6-in. Fold skirt hem under 4-in. and tuck into container legs (Figure 35).

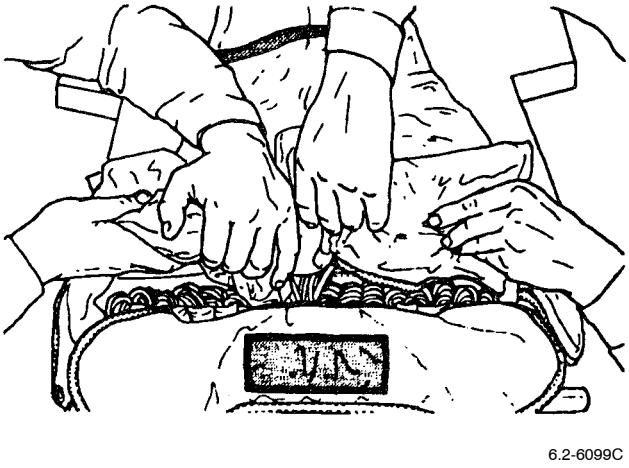


Figure 35. Spread Suspension Line Group

e. Continue to accordion-fold all but about 6 ft. of canopy into container. Separately press each accordion-fold firmly into legs of container. Accordion-fold remainder of canopy on packing table, starting with first fold on packer's side and ending with apex on helper's side. Folds shall extend 3-in. over sides of container. Ensure shot bags are removed from canopy (Figure 36). (QA)

Figure 36. Continue to Accordion Fold

f. Place withdrawal line and pilot parachute back onto packing table. Position remaining accordion-folded canopy on top of canopy in container. Ensure apex is positioned on helper's side of container. (QA)

20. CLOSING OF CONTAINER.

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. Pull side of flap with locking cones over top of folded canopy. Pull side flap with grommets over top side flap with locking cones and place grommets over locking pins (Figure 37).

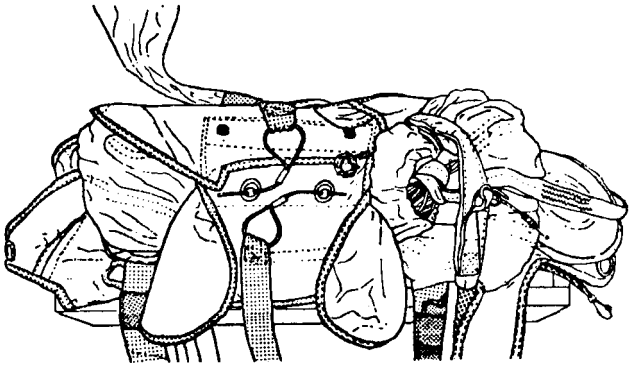


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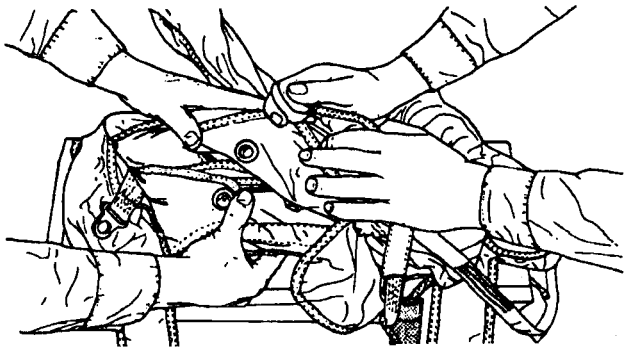
Figure 37. Pull Flap With Locking Cone Over Folded Canopy

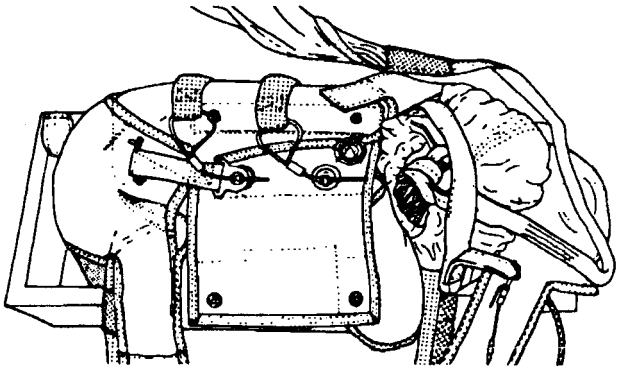
b. Remove temporary locking pin on packer's side and place grommet on end flap over locking cone, between side flaps (Figure 38).



6.2-5265B

Figure 38. Remove Temporary Locking Pin

c. Place side flap grommet back over locking cone and place metal end tab over grommet and locking cone. Reinsert temporary locking pin as shown (Figure 39).



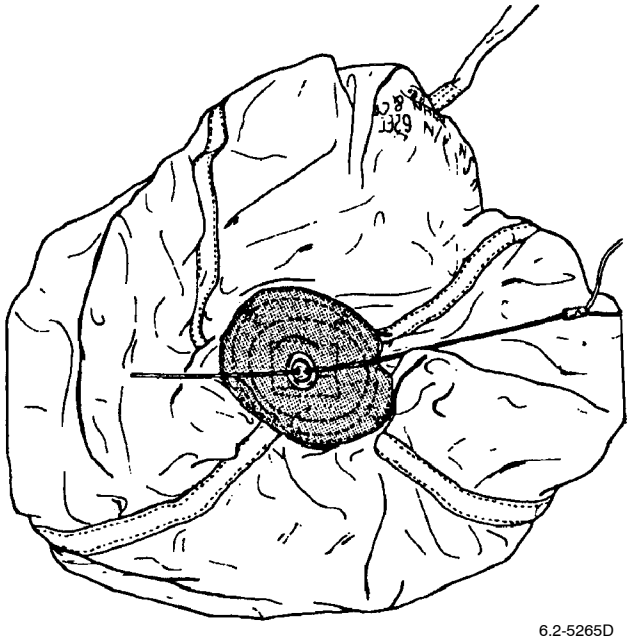
6.2-5265C

Figure 39. Place Metal End Tab Over Grommet

CAUTION

Ensure that pilot parachute cloth is not twisted around or entangled in compressed pilot parachute spring.

d. Insert guide tube thru grommet in crown of pilot parachute and place it over the locking cone on the spring baseplate. Compress pilot parachute fully, remove guide tube, and insert pilot parachute temporary locking pin into locking cone hole (Figure 40).



6.2-5265D

Figure 40. Insert Guide Tube Thru Grommet

e. Accordion-fold withdrawal line about 5-in. width, allowing free end to exit container at semicircular cutout on side flap containing grommets, opposite alignment ring on end flap. Wrap one turn of size E thread, doubled and waxed, around these folds; tie off. (QA)

f. S-fold pilot parachute connector strap over canopy apex on helper's side. Ensure connector strap emerges toward the front of container (Figure 41). (QA)

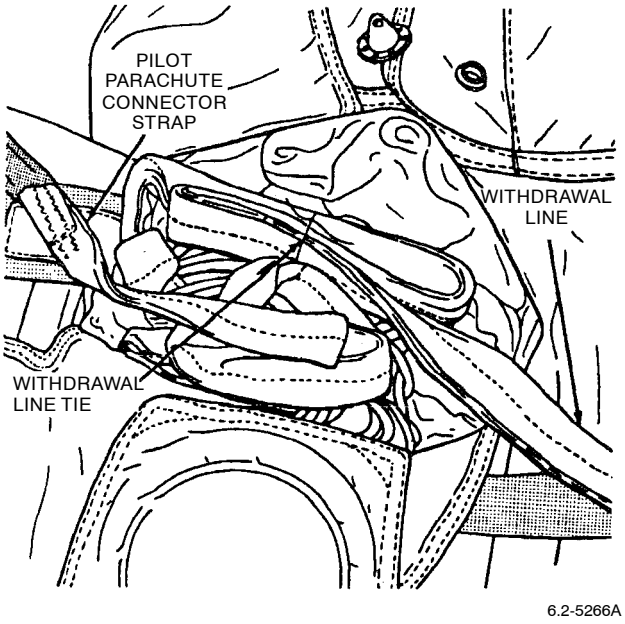


Figure 41. S-Fold Pilot Parachute Connector Strap

g. Place pilot parachute kickplate on top of canopy apex (Figure 42).

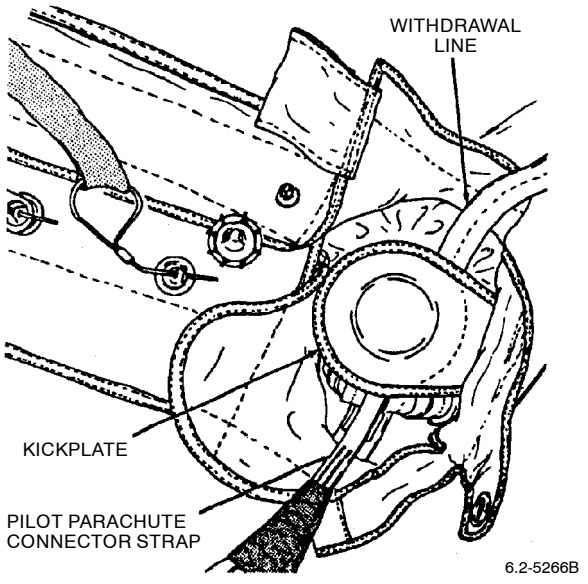


Figure 42. Placement of Kickplate

h. Tuck pilot parachute cloth under pilot parachute crown and place pilot parachute on top of kickplate (Figure 43).

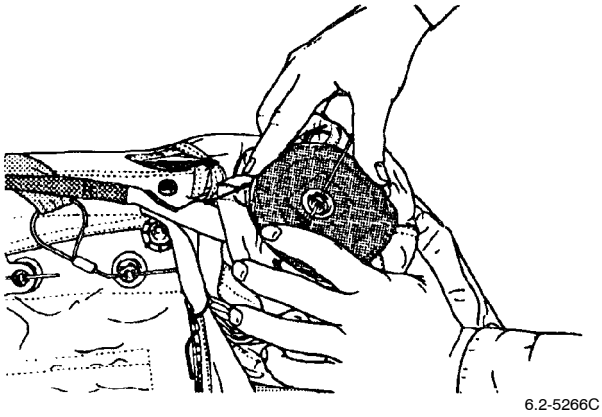


Figure 43. Placement of Pilot Parachute Cloth

WARNING

Withdrawal line must exit container at semicircular cutout on side flap containing grommets, opposite alignment ring on end flap.

i. Remove temporary locking pin on helper's side and pull end flap over compressed pilot parachute. Route withdrawal line and temporary locking pin flag out rear of container at semicircular cutout on side flap containing grommets opposite alignment ring on end flap. Remove grommet side flap from locking cone and place end flap grommet over locking cone. Place side flap grommet over locking cone. Place end tab over locking cone and reinsert temporary locking pin. Insert riser protector flaps using a packing fid (Figure 44). (QA)

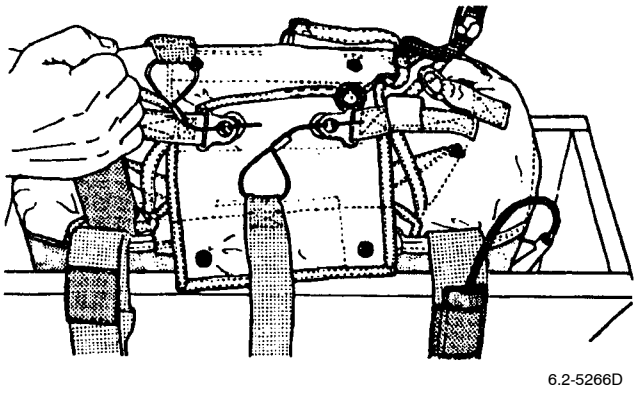


Figure 44. Removal of Temporary Locking Pin

j. Insert ripcord terminal thru webbing loop on end flap. Ripcord cable shall pass over loop. Helper shall hold end tab over locking cone on withdrawal line side of container. Packer shall remove temporary locking pin; then position ripcord terminal over locking cone and reinsert temporary locking pin. Remove pilot parachute temporary locking pin (Figure 45). (QA)

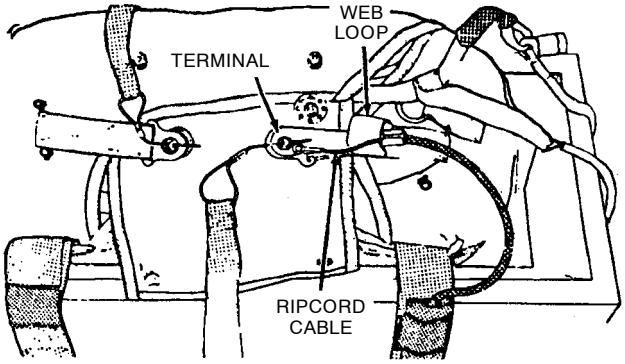


Figure 45. Inserting Ripcord Terminal

WARNING

Ensure that ripcord pins are centered in locking cones so that shoulder of ripcord pin is not jammed against locking cone.

k. Route withdrawal line closure pin assembly thru alignment ring. Insert long pin (curved pin) thru eye on end of ripcord assembly. Helper shall insert long pin into locking cone with ripcord terminal as packer removes temporary locking pin. Insert short pin (straight pin) into second locking cone (Figure 46). (QA)

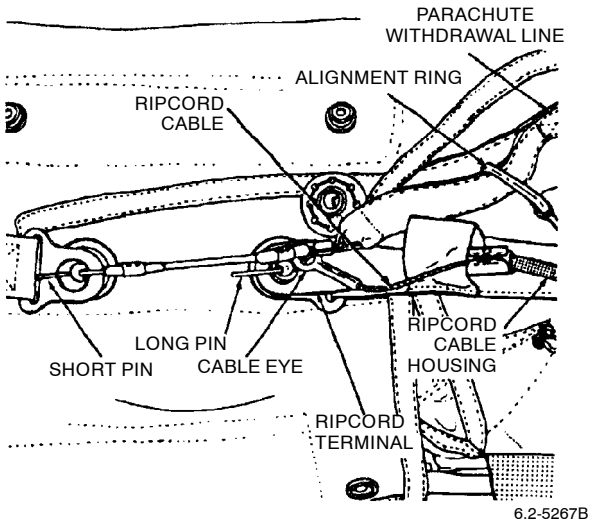


Figure 46. Route Withdrawal Line Closure Pin

l. Remove container from stand, and attach four container spring opening assemblies (two on each end of container). Ensure that manual ripcord housing passes under forward spring opening assembly.

m. Mate snap fasteners on restraint assemblies to snap fasteners on risers. Tack risers to restraint assemblies at snap fasteners by passing two turns of size E thread, single and waxed thru both riser risers and restraint assembly; tie off (Figure 47). (QA)

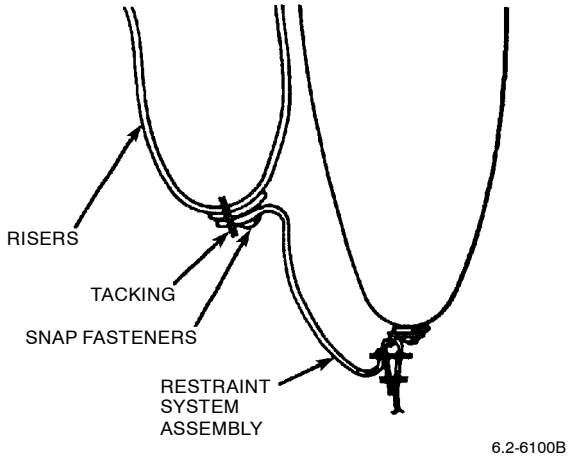


Figure 47. Mate Snap Fasteners

21. RIPCORD GRIP PULL CHECK.

a. Reinstall parachute in stand.

b. Ensure ripcord grip is fully seated in ripcord retainer.

c. Set spring scale to zero.

d. Attach scale to grip using Type IIA or III nylon cord.

e. Helper shall hold ripcord cable in place and, using a straight steady pull, remove grip from retainer. The force required to remove grip from retainer shall be 15 ± 5 lbs. (QA)

22. RIPCORD PIN PULL CHECK.

a. Set spring scale to zero.

b. Insert ripcord pinlock on bottom ripcord pin (Figure 48).

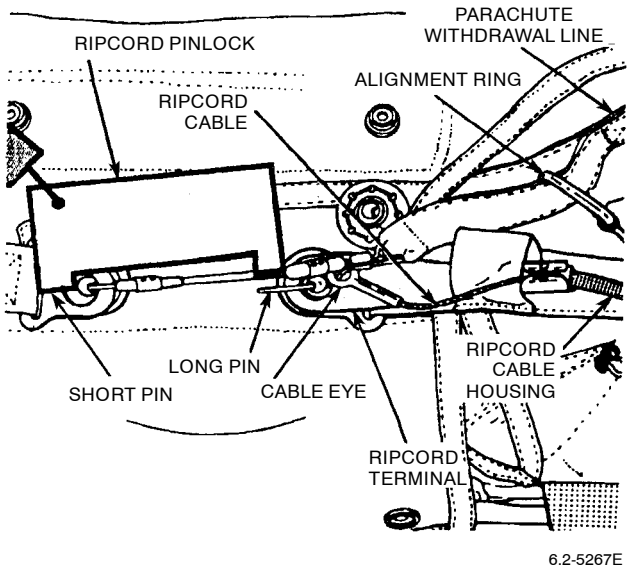


Figure 48. Inserting Ripcord Pinlock

c. Attach spring scale to ripcord grip with Type III nylon cord.

d. Using the scale, apply a straight steady force to ripcord grip until initial movement of the ripcord pins is observed. Maximum allowable force is 27 lbs. (QA)

WARNING

Ripcord pinlock must be removed.

e. Remove ripcord pinlock. Install ripcord grip in ripcord handle clip. (QA)

23. RIPCORD PIN TACKINGS.

a. Loop a 12-in. length size E thread, single and waxed under short pin. Secure pin by bringing thread ends together and forming three to five half-hitches around ripcord cable directly behind ripcord pin ferrule ending with a binder knot. Trim excess within 1/2 to 3/4-in. from binder knot (Figure 49). (QA)

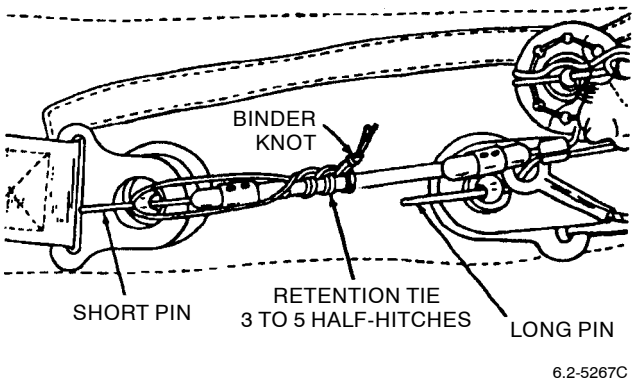


Figure 49. Safetying Short Pin

b. Route withdrawal line sleeve assembly thru alignment ring. Place ring on closure pin line over locking cone and then insert the sleeve assembly special pin. Safety-tie special pin by passing a length of unwaxed size A thread, single, under end of pin and thru loop formed at back of pin (Figure 50). (QA)

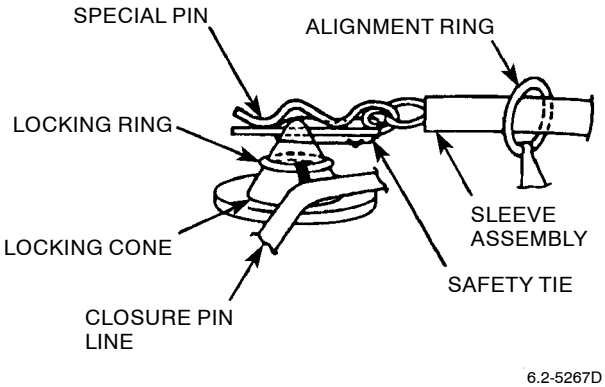


Figure 50. Routing Withdrawal Line Sleeve

c. Using the following illustration as a guide check the following: ensure ripcord terminal passes thru webbing loop and ripcord cables passes over loop; ensure closure pin line and sleeve assembly of withdrawal line pass thru alignment ring; ensure short pin and special pin are properly safety-tied (Figure 51). (QA)

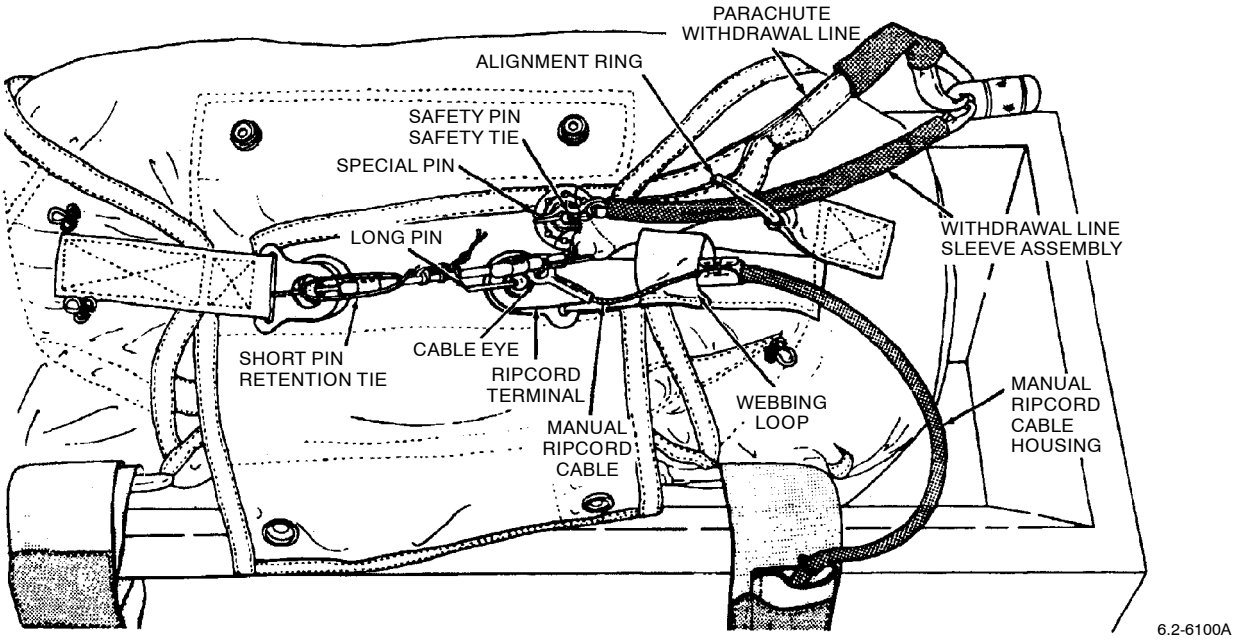


Figure 51. Ensure Ripcord Terminal Passes thru Webbing Loop

d. Position risers on top of container, pass canopy release stowage strap around risers, and snap closed (Figure 52).

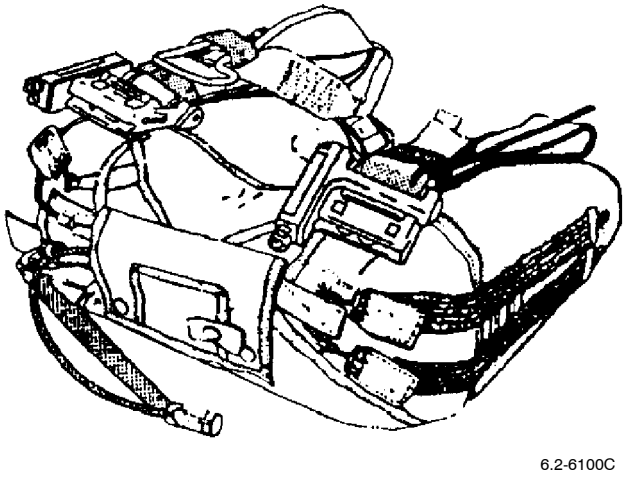


Figure 52. Positioning of Risers on Container

24. PARACHUTE HARNESS SENSING RELEASE UNIT (PHSRU), MXU-746/P AND MXU-747/P.

a. Measure the knurled actuating lever torque as follows:

(1) Hold locking lever in the open position and insert the torque meter with 1/16-in. hex head driver into actuating lever cavity.

(2) Rotate actuating lever to just prior to contact with body. Acceptable torque values are 28 to 50 in.-oz. (Figure 53). (QA)

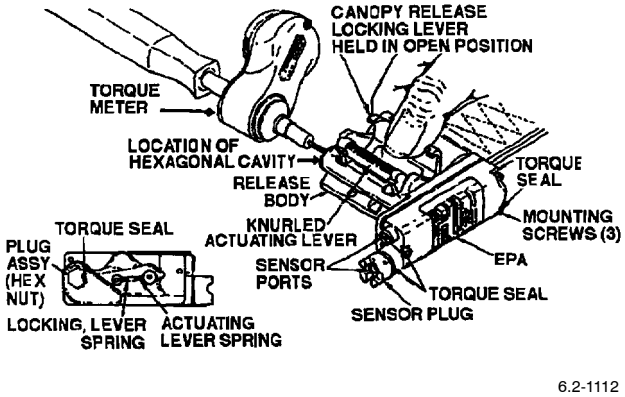


Figure 53. Rotate Actuating Lever

b. Check battery voltage as follows:

(1) Install test leads in multimeter observing proper polarity.

(2) Select VDC and scale exceeding 26 VDC.

CAUTION

Avoid touching the meter probes together when making this test. Firing of the PHSRU may result.

(3) Contact negative (black) probe to sensor plug assembly center conductor. Contact positive (red) probe to EPA sensor center conductor.

(4) Reading of +22.5 volts DC or greater indicates PHSRU is serviceable. (QA)

c. If plug assembly was removed, perform the following:

(1) Forward complete packed parachute assembly to either non-destructive inspection lab or medical facility for X-ray.

(2) From review of X-ray (Figure 54), if plug assembly is suspected or known to be partially or fully recessed, the unit shall have a shear pin integrity check per WP 024 02.

(3) Record inspection on Parachute Record (OPNAV 4790/101).

(4) Attach X-rays to the Parachute Record (OPNAV 4790/101).

(5) If voltage is below +22.5 volts DC, replace battery per WP 024 02.

(6) Record voltage for each EPA in the Local Use Block on the Parachute Record (OPNAV 4790/101).

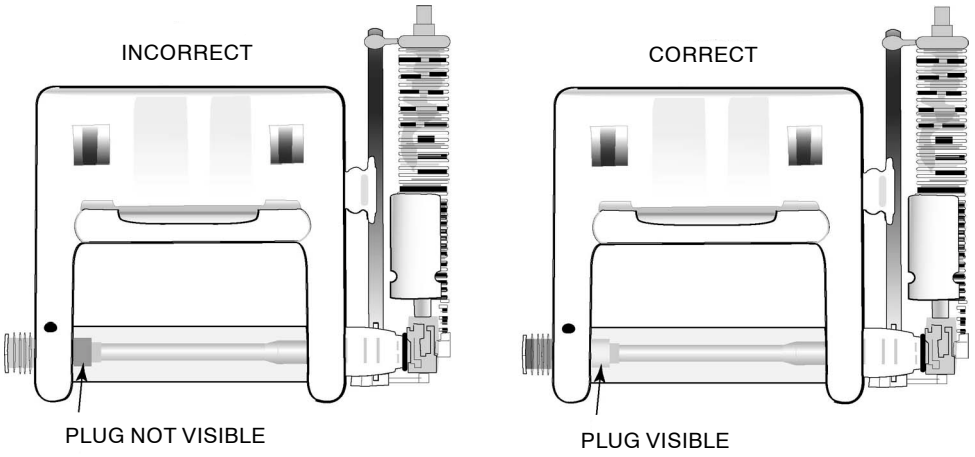


Figure 54. PHSRU X-Ray

25. FINAL CHECKOUT.

a. Measure height of packed parachute. Height shall not exceed 16 1/2-in. measure from screwhead to highest point of container (Figure 55).

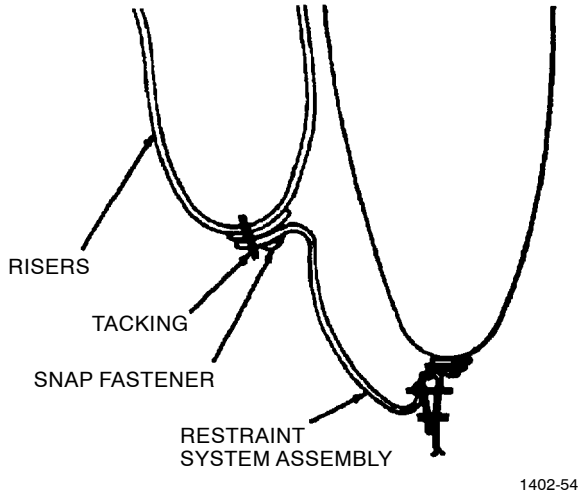


Figure 55. Measure Height of Container Packed

b. Account for all packing tools.

c. Examine packed parachute for general condition and close pin protector flap.

d. Packer shall complete and sign Parachute Record (OPNAV 4790/101). (QA).

e. QA inspector shall examine completeness and accuracy of all entries on Parachute Record (OPNAV 4790/101).

f. QA inspector shall sign Parachute Record (OPNAV 4790/101).

g. Send a (legible) copy of new Parachute Record to: Commander, Code 461000D, NAVAIRWARCENWPN DIV, 1900 N Knox Road Stop 6206, China Lake, CA 93555-6106.

INTERMEDIATE AND DEPOT MAINTENANCE

REPAIR PROCEDURES

NES-8B PERSONNEL PARACHUTE ASSEMBLY

PART NO. 574AS100-4

List of Effective Work Package Pages

Page No.	Chg. No.	Page No.	Chg. No.	Page No.	Chg. No.	Page No.	Chg. No.
1 thru 16	9						

Reference Material

Alphabetical Index

Record of Applicable Technical Directives

None

1. INTRODUCTION.

a. This work package (WP) contains instructions for the maintenance, repair, replacement, and fabrication of various drogue parachute parts or subassemblies to ensure that appropriate items of equipment remain in a ready-for-issue (RFI) status. Selected repairs shall be documented on the Parachute Record. For common repairs refer to WP 004 00.

2. PILOT PARACHUTE REPAIRS.

3. GENERAL.

a. Repair of the pilot parachute is limited to the following:

(1) Cleaning of contaminated areas.

(2) Replacement of loose or broken tacking.

b. Replace pilot parachute for any of the following:

(1) Service/total life has expired per WP 014 02.

(2) Holes, tears, seam separations, and loose or broken stitching (yarn separation is acceptable) that may affect the safe operation of the parachute assembly.

(3) Pilot parachute spring is bent or broken.

(4) Pilot parachute locking cone or grommet is loose or damaged.

4. REPLACEMENT OF PILOT PARACHUTE.

a. Remove tension hook from apex lines and remove pilot parachute.

b. Inspect replacement pilot parachute per WP 014 02.

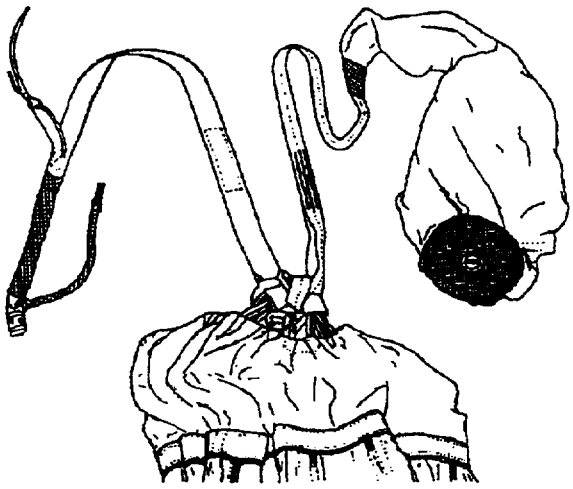
c. Pass replacement pilot parachute bridle around vent lines and thru loops in ends of pull down vent (PDV) lines to the right of the withdrawal line. Pass pilot parachute thru loop end of pilot parachute bridle and draw tight (Figure 1). (QA)

d. Mark date placed in service on pilot parachute per WP 004 00. (QA)

5. WITHDRAWAL LINE REPAIRS.

6. GENERAL.

a. Repair of the withdrawal line is limited to cleaning of contaminated area.



6.2-5870

Figure 1. Pilot Parachute and Withdrawal Line Replacement

b. Replace withdrawal line for any of the following:

(1) Service/total life has expired per WP 014 02.

(2) Any damage that exists that may affect the safe operation of the parachute assembly.

7. REPLACEMENT OF WITHDRAWAL LINE.

a. Inspect replacement withdrawal line per WP 014 02.

b. Remove tension hook from apex lines and remove withdrawal line.

c. Pass loop end of replacement withdrawal line around vent lines and thru PDV lines to left of pilot parachute bridle. Pass free end of withdrawal line thru loop and draw tight. Ripcord pins must be facing up when withdrawal line is drawn tight (Figure 1). (QA)

d. Mark date place in service on withdrawal line per WP 004 00. (QA)

8. CANOPY ASSEMBLY REPAIRS.

9. REPLACEMENT OF CANOPY ASSEMBLY.

Support Equipment

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
V-T-295	Thread, Nylon, Size 6, Type I or II, Class A
PIA-C-5040	Cord, Nylon, Type III

NOTE

New PDV lines are to be installed at the time of canopy replacement. Once installed the PDV lines become a permanent part of the canopy and will reach service life accordingly. Remove PDV lines are not reused.

For Double "L" Connector Link, refer to Paragraph 32 for disassembly, assembly, and inspection instructions.

a. Remove pilot parachute and withdrawal line from vent lines. Retain for installation.

b. Remove four-line release rigging from connector links and then remove lanyard from flutes.

c. Remove connector link yoke and plate assemblies.

d. Remove connector links from riser loops and remove cross-connector strap. Reinstall yoke and plate assemblies.

e. Dispose of canopy assembly and PDV lines per current supply directives.

f. Lay out replacement canopy assembly and stretch it to its full length on the packing table.

g. Attach tension strap hook to canopy vent lines.

h. Locate gore 28 (nameplate gore) and place it bottom-most in center of packing table.

i. At skirt hem, separate suspension lines into two equal groups with lines 15 thru 28 on packer's side and 1 thru 14 on helper's side (Figure 2). Grasping each group of lines, walk from skirt hem to connector links removing any dips and twists between two groups.

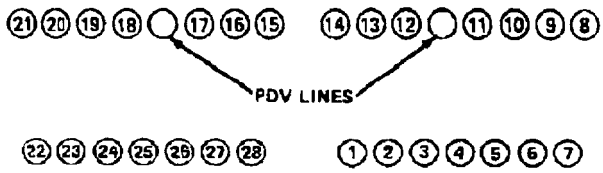


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Figure 2. Arrangement and Orientation of Suspension Lines on Connector Links

j. Place connector link holding lines 15 thru 21 on top of connector link holding lines 22 thru 28. Place connector link holding lines 8 thru 14 on top of connector link holding lines 1 thru 7. Insert tension hooks into connector links and insert hooks into packing table (Figure 2).

k. Apply tension.

l. Pull vent collar toward canopy and align vent hem.

m. Pull vent collar band back to its original position.

n. Check suspension line continuity on left side of gore 14. Packer shall grasp line 15 at skirt hem and raise to a sufficient height to ensure line is free of dips and twists. Continue this procedure with lines 16 thru 28 (Figure 2). Helper shall be positioned at connector links to check lines selected by packer.

o. Check suspension line continuity on right side of gore 14. Packer shall grasp line 14 at skirt hem and raise to enough height to ensure line is free of dips and twists. Continue procedure with lines 13 thru 1 (Figure 2). Helper shall be positioned at connector links to check lines selected by the packer.

p. Inspect four-line release anchor loops for proper attachment to lines 3 and 26. Measure 30 ± 1/2-in. above upper connector link bar. Anchor loops must be attached with 2-in. of zigzag stitching.

q. Continue to inspect canopy assembly per WP 014 02.

r. Record any damage on canopy damage chart.

s. Reattach pilot parachute, withdrawal line, and new PDV lines per Paragraphs 4, 5 and 12.

t. Lay out riser assembly and cross-connector straps on packing table. Corresponding risers shall be placed on top of each other and positioned at connector links. Ripcord assembly shall face up.

u. Remove connector links from tension hooks. Remove tension hooks from packing table.

v. Remove connector link yoke and plate assemblies from bottom connector links.

w. Insert bottom connector links thru loop in each end of cross-connector strap and thru loops in bottom riser straps.

x. Reattach yoke and plate assemblies to bottom connector links ensuring knurled portions of plate faces up and screw-heads face outboard.

y. Remove connector link yoke and plate assemblies from top connector links.

z. While maintaining suspension line continuity, slide suspension lines onto a temporary locking pin or rod.

aa. Insert connector links top connector links thru loops in each cross-connector strap and then thru loop in top riser straps.

CAUTION

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

ab. Reinstall suspension lines 3 thru 7 and 26 thru 22 onto connector links.

ac. Reattach yoke and plate assemblies to top connector links ensuring knurled portion of plate faces up and screw-heads face outboard.

ad. Insert tension hooks into connector links and then tension canopy.

ae. Perform suspension line continuity check line as in steps n and o. (QA)

af. Tighten screws on top and bottom connector links to a torque value of 20 to 25 in-lbs. (QA)

ag. Apply torque seal to each connector link screwhead.

ah. Mark date placed in service on canopy assembly per WP 004 00. Install new assembly label on container. Hand etch information onto label. Make proper entries on Parachute Record (OPNAV 4790/101). (QA)

ai. Fabricate four-line release lanyards, if required per WP 004 00.

aj. Attach four-line release lanyards to suspension lines 3 and 26 per WP 004 00.

ak. Rig four-line release lanyards per WP 004 00.

10. PULLDOWN VENT (PDV) LINES REPAIRS.

11. GENERAL.

a. Repair of PDV lines is limited to removal and replacement. Replace PDV lines if any damage exists that may affect the safe operation of the parachute assembly.

12. REPLACEMENT OF PULLDOWN VENT (PDV) LINES.

Support Equipment

Part Number	Nomenclature
Refer to WP 005 00	Temporary Locking Pin

Materials Required

Specification or Part Number	Nomenclature
PIA-C-5040	Cord, Nylon, Type IIA or III
MIL-R-1832	Rubberband, Retaining, Type I

NOTE

New PDV lines are to be installed at the time of canopy replacement. Once installed, the PDV lines become a permanent part of the canopy and will reach service life accordingly. Removed PDV lines are not reused.

For Double "L" Connector Link, refer to Paragraph 32 for disassembly, assembly, and inspection instructions.

a. Remove or replace PDV lines as follows:

(1) Remove pilot parachute and withdrawal line from vent lines and PDV lines.

(2) Remove connector link yoke and plate assemblies from top connector links.

CAUTION

Ensure that suspension line continuity is maintained at all times. Also ensure that the clove-hitch and half-hitch at the ends of the suspension lines have not separated during handling.

(3) While maintaining suspension line continuity, slide suspension lines 8 thru 11 and 21 thru 18 onto a temporary locking pin or rod.

(4) Remove defective PDV line.

(5) Lay out new PDV lines the full length on the packing table. The end with small loop shall be positioned at connector links and end with large loop positioned at skirt hem.

(6) Measure length of new PDV lines while applying 25 lbs. tension for 1 min. PDV lines shall measure 22 ft. 6-in. ± 6-in. with no more than a 4-in. difference between the two lines.

(7) Secure small loop of one PDV line between suspension lines 17 and 18 on top left connector link and other between suspension lines 11 and 12 on top right connector link. PDV lines must pass under the three inboard lines on each connector link.

(8) Reattach yoke and plate assemblies to top connector links ensuring knurled portion of plate faces up and screw-heads face outboard.

(9) Insert tension hooks into connector links and then apply tension to canopy.

(10) Check suspension line continuity (Figure 2).

(11) Tighten screws on top and bottom of connector links to a torque value of 23 ±2 in-lbs. (QA)

(12) Apply torque seal to each connector link screw-head.

(13) Pass a messenger cord thru center of canopy to apex. Ensure cord extends beyond skirt hem and canopy apex.

(14) Attach end of nylon messenger cord to large loop end of each PDV line at skirt hem.

(15) Fold PDV lines at weak links into 5-in. folds and secure with rubberband. Apply tension to PDV lines at canopy apex using nylon messenger cord down thru canopy (Figure 3).

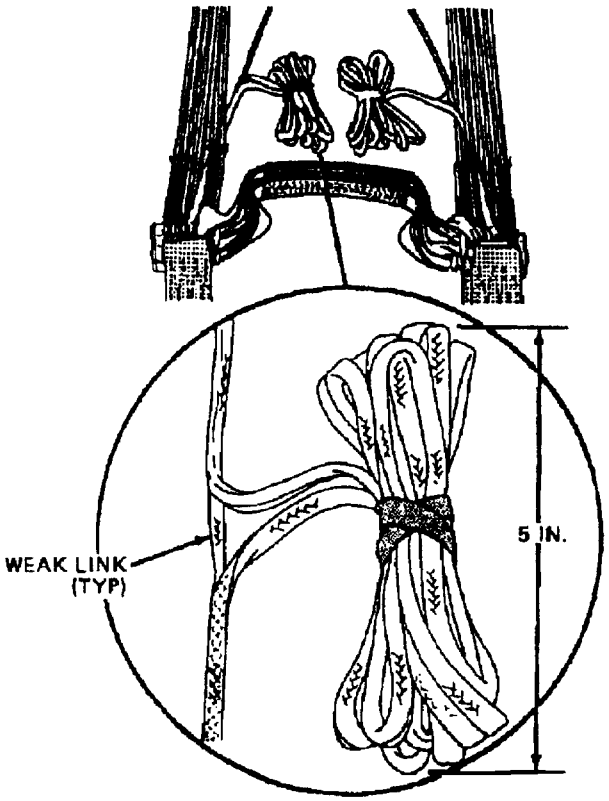


Figure 3. Fold PDV Lines at Weak Link

(16) Remove tension strap from canopy apex but not from PDV line messenger cord.

(17) Helper shall grasp only suspension lines, excluding PDV lines, 14 1/2 ft. from connector links and spread each group to edge of table. While helper holds suspension lines at edges of table, packer shall draw canopy down center of table, between suspension lines, to a point where suspension lines between helper's hands and skirt hem become taut. At this point, PDV lines should protrude thru vent hem. If PDV lines do not appear at vent collar, adjust the canopy position until they do. Loosen the nylon messenger cord, untie, and remove from the PDV lines (Figure 4).

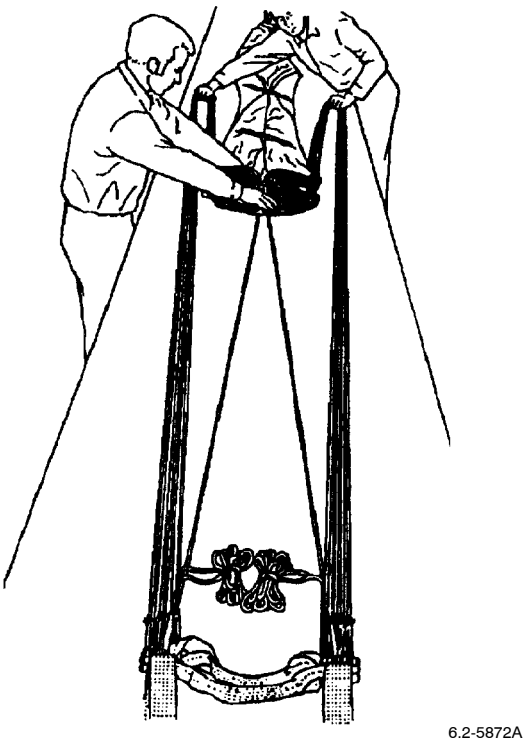


Figure 4. Spread Suspension Lines to Edge of Table

(18) Pass pilot parachute bridle around vent lines and thru loops in ends of PDV lines. Pass pilot parachute thru loop end of pilot parachute bridle and draw tight.

(19) Pass loop end of withdrawal line around vent lines and the PDV lines to left of pilot parachute bridle. Pass free end of withdrawal line thru loop and draw tight. Closure pin line must be facing up when withdrawal line is drawn tight (Figure 5). (QA)

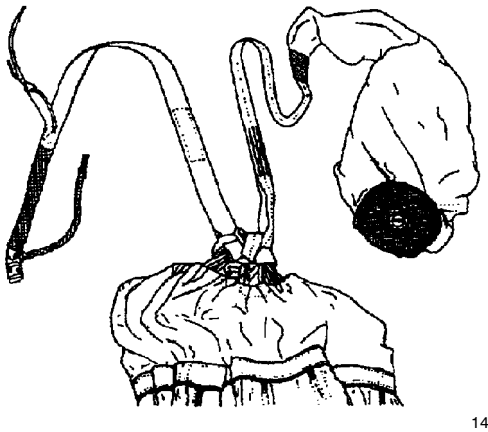


Figure 5. Pass Loop End Around Vent Lines

(20) Inspect replacement PDV lines per WP 014 02.

13. RISER ASSEMBLY REPAIR.

a. Repair of risers is limited to the following:

(1) Cleaning of contaminated areas.

(2) Repair of stitching if less than three stitches are loose or broken.

(3) Repair of loose or broken stitching on ripcord housing flute.

(4) Removal/repair/replacement of four-line release flutes.

b. Replace risers for any of the following:

(1) Service/total life has expired per WP 014 02.

(2) Cuts, tears, or holes in webbing.

(3) Loose or broken stitching in excess of three stitches.

(4) Damaged ripcord grip, roller fittings, retainer fittings, ripcord housing flute, and grip cover.

(5) Twists, fading, excessive wear, fusing, fraying, burns, contamination, and abrasion.

14. REPLACEMENT OF RISER ASSEMBLY.

Support Equipment

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
V-T-295	Thread, Nylon Size FF, Type I or II Class A

NOTE

For Double "L" Connector Link, refer to Paragraph 32 for disassembly, assembly, and inspection instructions.

a. Remove ripcord assembly from riser per Paragraph 28.

b. Remove parachute harness sensing release unit from risers per WP 026 02.

c. Remove four-line release tackings from flutes and carefully remove release lanyards from flutes. Insert temporary locking pin into last four-line release daisy chain.

d. Remove connector link yoke and plate assemblies.

e. Slide riser loops off connector link bar.

r. Reinstall yoke and plate assemblies.

g. Ensuring that suspension line continuity is maintained (Figure 2), insert connector links onto tension hooks.

h. Inspect replacement risers per WP 014 02.

i. Lay out replacement risers on packing (Figure 6).

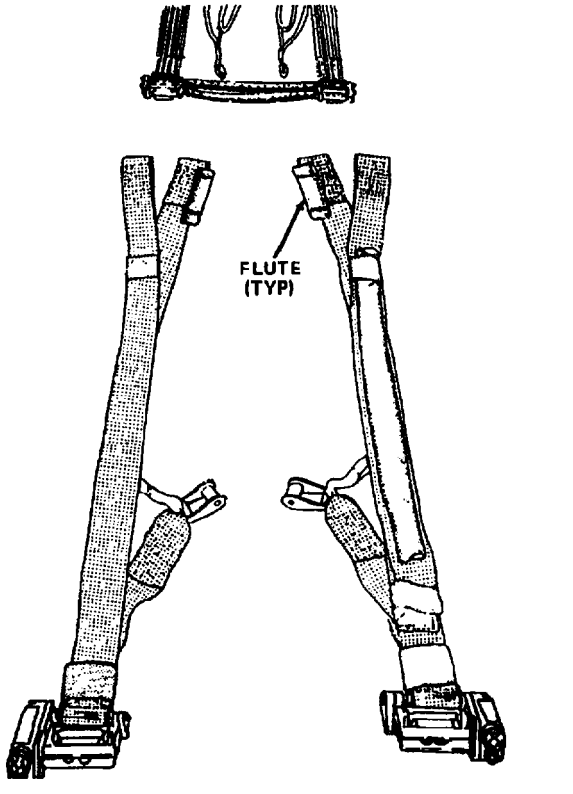


Figure 6. Replacement of Riser Assembly

j. Remove connector link yoke and plate assemblies from bottom connector links.

k. Insert bottom connector links into bottom riser loops.

l. Reinstall yoke and plate assemblies to bottom connector links ensuring knurled plate face up and screwheads face outboard.

m. Remove connector link yoke and plate assemblies from top connector links.

n. Insert top connector links into top riser loops.

o. Reinstall yoke and plate assemblies to top connector links ensuring knurled plate faces up and screwheads face outboard.

p. Check suspension line continuity (Figure 2).

q. Tighten screws on top left and bottom connector links to a torque value of 20 to 25 in-lbs. (QA)

r. Apply torque seal to each torqued connector link screwhead.

s. 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.

t. Remove temporary locking pins from last four-line release daisy chains.

u. Tack release lanyard to flute with one turn of size FF thread, single and waxed. Tacking shall pass thru outer cover of flute, thru the release lanyard, thru and around last daisy chain loop and then back thru flute; tie off per WP 004 00.

v. 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 per WP 005 00. (QA)

w. Reinstall parachute harness sensing release units WP 026 02.

x. Reinstall ripcord assembly per Paragraph 28.

y. Mark date placed in service on identification and service life label per WP 004 00. Make required entries on Parachute Record (OPNAV 4790/101). (QA)

15. REPAIR OF RIPCORD GRIP RETAINER.

a. Repair of the ripcord grip retainer and cover is limited to the following:

(1) Replacement of defective grip retainer.

(2) Replacement of stitching securing grip retainer to riser assembly.

(3) Replacement of ripcord grip retainer cover.

b. Repair or replace ripcord grip retainer for any of the following:

(1) Grip retainer is corroded, bent, or cracked, where that damage may affect the safe operation of the parachute assembly.

(2) Stitching securing grip retainer to riser assembly is loose or missing.

c. Repair or replace grip retainer cover for any of the following:

(1) Cover loose, or deteriorated.

(2) Tacking securing cover to riser assembly is loose or missing.

16. REPLACEMENT OF RIPCORD GRIP RETAINER.

Support Equipment

Part Number	Nomenclature
Refer to WP 005 00	Pinlock, Ripcord
DPP-50	Scale

Materials Required

Specification or Part Number	Nomenclature
MIL-C-5040	Cord, Nylon Type I or IA
MIL-W-4088	Webbing, Nylon Type XII 1 3/4-in. Wide Class 1, 1A or 2
V-T-295	Thread, Nylon Size FF, Type I or II Class A
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 stitching securing grip retainer cover to riser assembly and slide cover back.

b. Remove stitching securing ripcord grip retainer to webbing riser.

c. Measure 3 1/4 ± 1/8-in. from end of riser assembly and mark for reference.

d. Place grip retainer on riser assembly with lower edge positioned at 3 1/4-in. reference mark.

e. Handstitch grip retainer assembly using a running stitch with size 6 thread, doubled and waxed. Start hand-stitch by placing an overhand knot 5-in. from bitter end of the thread, starting and ending underside of riser assembly at the same hole location; tie off. Repeat procedure for remaining set of holes (Figure 7). (QA)

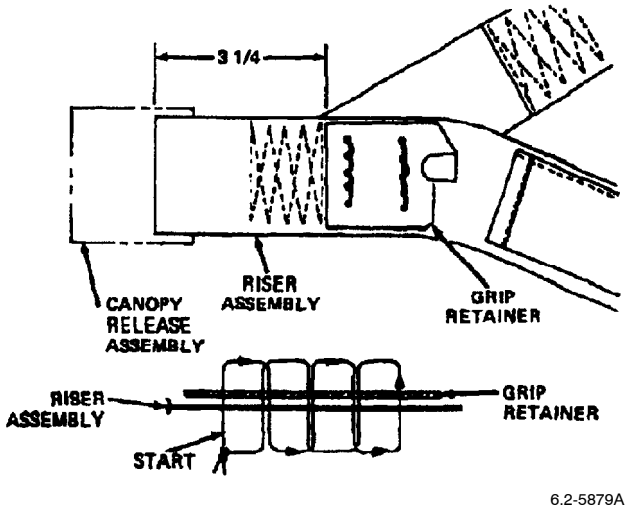


Figure 7. Ripcord Grip Retainer Replacement

f. Ensure grip is fully seated in ripcord retainer.

g. Insert ripcord pinlock on bottom ripcord pin (Figure 8).

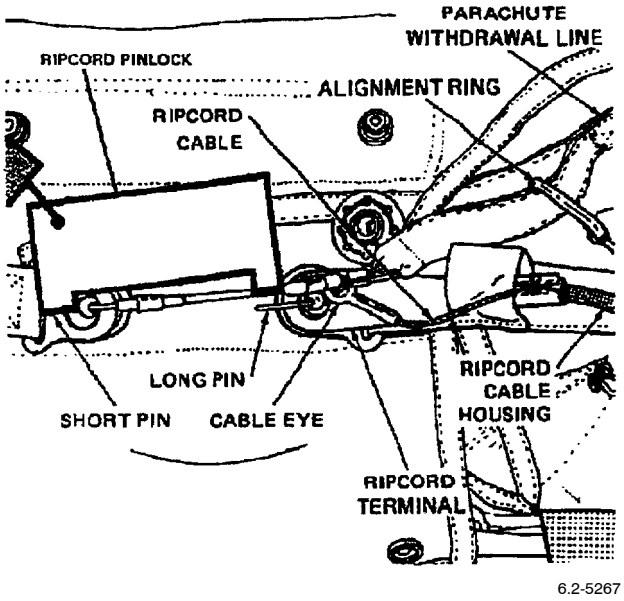


Figure 8. Inserting Ripcord Pinlock

h. Set gage to zero.

i. Attach gage to grip using Type I or IA nylon cord.

j. Apply a straight pull, remove grip from retainer. The force required to remove grip from retainer shall be 15 ±5 lb.

WARNING

Ripcord pinlock must be removed.

k. Remove ripcord pinlock. Install ripcord grip in retainer. (QA)

l. Replace cover per Paragraph 17.

17. REPLACEMENT OF RIPCORD GRIP RETAINER COVER.

Materials Required

Specification or Part Number	Nomenclature
MIL-W-4088	Webbing, Nylon, Type XII, 1 3/4-in. Wide Class 1, 1A or 2
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 defective or loose retainer cover.

b. Cut a 7-in. length of webbing.

c. Sear both ends of webbing, to prevent fraying.

d. Mark 1 3/4-in. from bitter ends.

NOTE

Do not wrap cover around harness restraint strap.

e. Wrap webbing around riser over lapping the 1 3/4-in. mark (Figure 9).

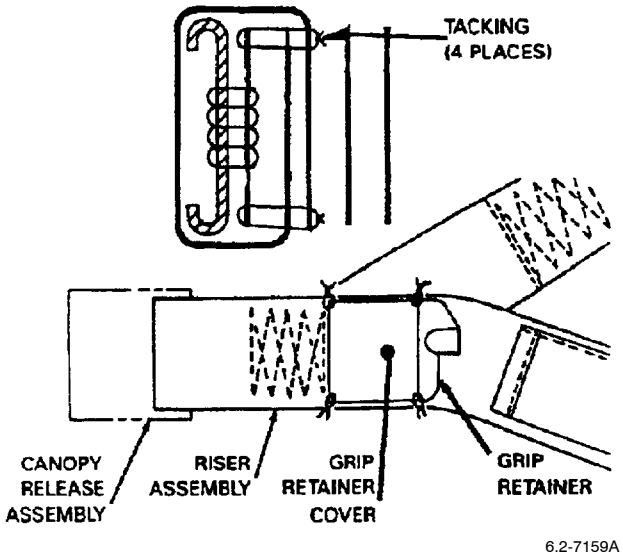


Figure 9. Ripcord Grip Retainer Cover Replacement

f. Tack retainer cover to lower riser in four places with size FF thread, doubled and waxed; tie off (Figure 9). (QA)

18. CONTAINER ASSEMBLY REPAIRS.

a. Repair of container is limited to following:

(1) Containers with crazing, but where no cracking or sharp edges are noted, shall be returned to service without repair.

(2) Cracks which do not penetrate the container surface shall be repaired per Paragraph 19.

(3) Containers with cracks which penetrate the full thickness of the container, but do not exceed the limits given in sub-step (4), shall be replaced. If a replacement container is not available, the cracked container shall be repaired per Paragraphs 20 and 21.

(4) Containers with cracks which exceed the following limits shall be scrapped.

(a) More than three crack.

(b) Any single crack in excess of 4-in.

(c) Combined length of all cracks in excess of 6-in.

19. REPAIR OF SURFACE CRACKS.

Materials Required

Specification or Part Number	Nomenclature
8089ABX	Uralane, Adhesive
O-E-760	Alcohol, Denatured
MIL-T-43618	Cloth, Parachute Pressure Sensitive

WARNING

All solutions used in repair of containers are toxic. Avoid skin contact and use only in well ventilated areas. If spilled on skin surfaces, wash off immediately with mild soap and water.

NOTE

Uralane adhesive has a total life of 6 months from date of manufacture and is furnished in quart kits.

Denatured Alcohol 9

a. Clean cracked area with alcohol, using a clean cotton cloth. Clean area 2-in. past cracks in all directions.

Uralane Adhesive 10

NOTE

Mix uralane solution as follows: 100 parts of uralane 8089-A by weight, to 35 parts uralane 8089-BX by weight. Do not mix more than can be used in 10 min.

b. Paint clean area (do not paint beyond cleaned area) with uralane solution. Treat both inside and outside cracks in same manner, except for covering repairs to container interior. (Refer to step e, for covering interior repairs).

c. Cure container for 24 hrs. at room temperature followed by 3 hrs. at 65-degrees to 69-degrees C (150-degrees to 158-degrees F).

d. (Exterior Only). Return container to service.

Denatured Alcohol 9

e. (Interior Only). After container has cured, clean affected area with alcohol. Allow to dry and cover repaired area with alcohol. Allow to dry and cover repaired area with pressure-sensitive tape. Extend tape 1/2-in. beyond repaired areas. Round corners of tape with a 1/2-in. radius cut. Return container to service.

20. REPAIR OF SURFACE-TO-SURFACE CRACKS (INSIDE RESTRAINT CLIP AREAS ONLY).

Materials Required

Specification or Part Number	Nomenclature
8089ABX	Uralane, Adhesive
MIL-C-7020	Cloth, Parachute Nylon, Type I or II
O-E-760	Alcohol, Denatured
MIL-T-43618	Cloth, Parachute Pressure Sensitive

WARNING

All solutions used in repair of containers are toxic. Avoid skin contact and use only in well ventilated areas. If spilled on skin surfaces, wash off immediately with mild soap and water.

NOTE

Uralane adhesive has a total life of 6 months from date of manufacture and is furnished in quart kits.

a. Remove restraint clip rivets and deburr rivet holes. Use a No. 30 drill to remove upset head from inside of container and punch out the rivet.

NOTE

Ensure that appropriate malfunction description code is recorded.

b. Stop drill cracks using a No. 40 drill and deburr holes.

c. Use coarse abrasive (paper, file, or wheel) and roughen or abrade cracked areas, both inside and out, for at least 2-in. past end of holes.

Denatured Alcohol 9

d. Clean abraded area, inside and out, with alcohol, using a clean cotton cloth. Clean about 2-in. past cracks and holes in all directions.

NOTE

Dryclean or wash in detergent all repair cloth. Be sure material is clean and dry before use.

e. Cut enough nylon cloth to cover damaged areas and to extend 1/2-in. beyond them. Round off fabric corners with a 1/2-in. radius cut.

Uralane Adhesive 10

NOTE

Mix uralane solution as follows: 100 parts of uralane 8089-A by weight, to 35 parts uralane 8089-BX by weight. Do not mix more than can be used in 10 min.

f. Paint inner and outer surfaces of cracks and holes with a uralane solution. Cover 2-in. beyond affected area in all directions past cracks and holes .

g. Position nylon cloth over areas to be repaired, smooth out wrinkles, and brush with a uralane solution. Allow to cure for 3 hr. at 66-degrees to 69-degrees C (150-degrees to 158-degrees F) or 8 days at room temperature.

h. Brush additional coats of uralane solution on treated repair area, and allow to cure per step e.

Denatured Alcohol 9

i. (Interior Only). Clean affected area with alcohol and allow to dry. Cover repair area with pressure-sensitive tape, extending tape 1/2-in. beyond cracks. Round off tape with a 1/2-in. radius cut.

j. Return repaired container to service until a replacement is available.

21. REPAIR OF SURFACE-TO-SURFACE CRACKS (OUTSIDE RESTRAINT CLIP AREAS ONLY).

Materials Required

Specification or Part Number	Nomenclature
8089ABX	Uralane, Adhesive
MIL-C-7020	Cloth, Parachute, Nylon, Type I or II
O-E-760	Alcohol, Denatured
MIL-T-43618	Cloth, Parachute Pressure Sensitive

WARNING

All solutions used in repair of containers are toxic. Avoid skin contact and use only in well ventilated areas. If spilled on skin surfaces, wash off immediately with mild soap and water.

NOTE

Uralane adhesive has a total life of 6 months from date of manufacture and is furnished in quart kits.

a. Stop drill cracks using a No. 40 drill and deburr holes.

NOTE

Ensure that appropriate malfunction description code is recorded.

Denatured Alcohol 9

b. Clean damaged area with alcohol, using a clean cotton cloth. Clean about 2-in. past cracks and holes in all directions.

NOTE

Dryclean or wash in detergent all repair cloth. Be sure material is clean and dry before use.

c. Cut enough nylon cloth to cover damaged area and to extend 1/2-in. beyond them. Round off fabric corners with a 1/2-in. radius cut.

Uralane Adhesive 10

NOTE

Mix uralane solution as follows: 100 parts of uralane 8089-A by weight, to 35 parts uralane 8089-BX by weight. Do not mix more than can be used in 10 min.

d. Paint inner and outer surfaces of cracks and holes with a uralane solution. Cover 2-in. beyond cracks and holes in all directions.

e. Position nylon cloth over areas to be repaired, smooth out wrinkles, and brush with a uralane solution. Allow to cure for 3 hr. at 65-degrees to 69-degrees C (150-degrees to 158-degrees F) or 4 days at room temperature.

f. Brush additional coats of a uralane solution on treated repair area, and allow to cure per step e.

g. (Interior Only). Clean affected area with alcohol, and allow to dry. Cover repair area with pressure-sensitive tape, extending tape 1/2-in. beyond cracks. Round off tape with a 1/2-in. radius cut.

h. Return container to service.

22. FABRICATION AND REPLACEMENT OF RISER RESTRAINT STRAP.

Support Equipment Required

Part Number	Nomenclature
1401	Fastener Chuck
1401	Fastener Die
M-100	Press
—	Punch, 1/8-in.

Materials Required

Specification or Part Number	Nomenclature
MIL-W-5664	Webbing, Elastic, Cotton, Class 1, Type I
MIL-W-5625	Webbing, Nylon, Tubular, Sage Green, 1 in. Wide
MS27980-1B	Button, Fastener
MS27980-6B	Socket, Fastener
V-T-295	Thread, Nylon, Size E, Type I or II, Class A

a. Fabricate and replace riser restraint strap as follows:

(1) Carefully remove box stitching securing defective riser restraint strap to container restraint strap assembly.

(2) Cut a 13 3/4-in. length of tubular webbing. Sear ends, leaving ends open.

(3) Cut a 7 3/4-in. length of elastic webbing.

(4) Insert elastic webbing inside tubular webbing. Stitch ends. Backstitch 1/2-in. (Figure 10).

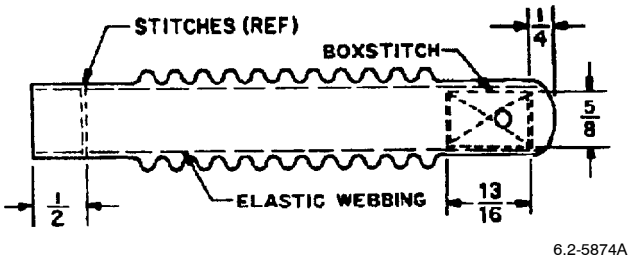


Figure 10. Insert Elastic Webbing

(5) Punch a hole in the end of the strap and install fasteners (Figure 11).

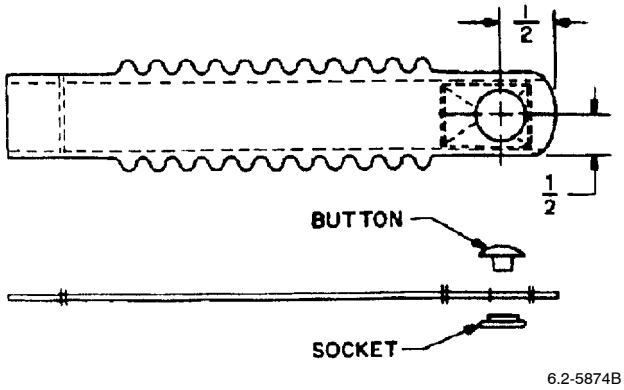


Figure 11. Punch a Hole in Strap

(6) Using dimensions shown, and with socket fastener facing up, sew riser restraint straps to parachute container restraint strap using a boxstitch pattern with size E thread. Backstitch 1/2-in. (Figure 12).

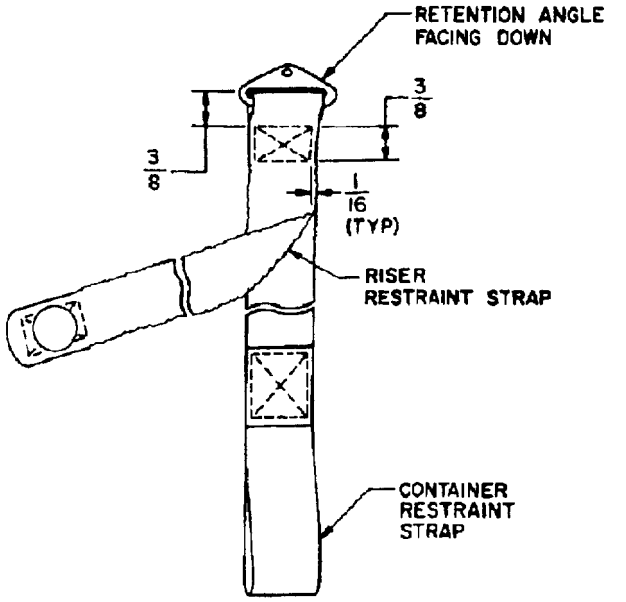


Figure 12. Sew Riser Restraint Straps

23. REPLACEMENT OF RISER RESTRAINT STRAP TACKING.

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. Completely remove loose or broken tacking.

b. Mate snap fastener on riser restraint strap to snap fastener on riser. Tack thru both risers and thru riser restraint strap using two turns of size E thread, single and waxed; tie off (Figure 13). (QA)

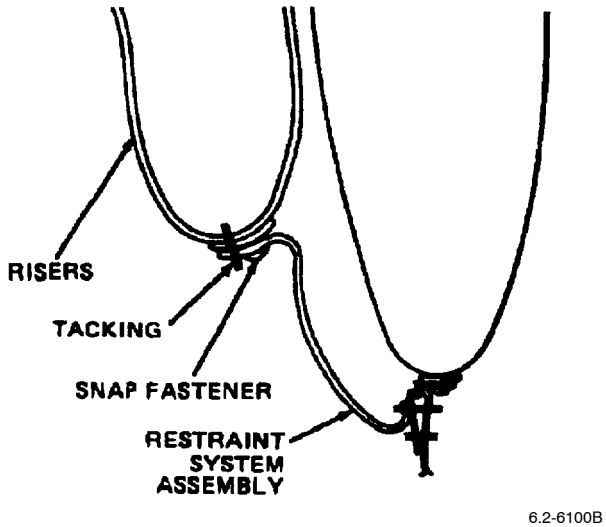


Figure 13. Replacement of Riser Restraint Strap Tacking

24. REPLACEMENT OF CONTAINER ASSEMBLY.

a. Inspect replacement container per WP 014 02.

b. Replace container at proper place during packing procedures.

c. Enter date placed in service (MMYY) on container label. Hand etch information onto assembly label. Make proper entries on Parachute Record (OPNAV 4790/101).

25. REPLACEMENT OF SPRING OPENING ASSEMBLY.

a. Measure length of replacement spring opening assembly. Proper length is 7 7/8 ± 1/8-in. measured with no tension from end of one hook to end of other hook.

b. Inspect replacement spring opening assembly per WP 014 02.

c. With hook facing inboard, attach end of spring assembly without pull tab to lower eye on side of container. Crimp hook to eye.

d. Attach opposite end of spring assembly to eye on end flap.

26. RIPCORD ASSEMBLY REPAIR.

27. GENERAL.

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

(1) Cleaning contaminated areas per WP 004 00.

(2) Replacement of loose or broken tackings per WP 014 01.

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 grip or housing.

28. REPLACEMENT OF RIPCORD ASSEMBLY.

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. Completely remove ripcord housing and housing flute tackings.

b. Remove ripcord assembly from ripcord grip retainer and housing flute.

c. Inspect replacement ripcord assembly per WP 014 02.

d. Pass ripcord housing thru ripcord housing tunnel on riser and then insert ripcord grip into ripcord retainer (Figure 14).

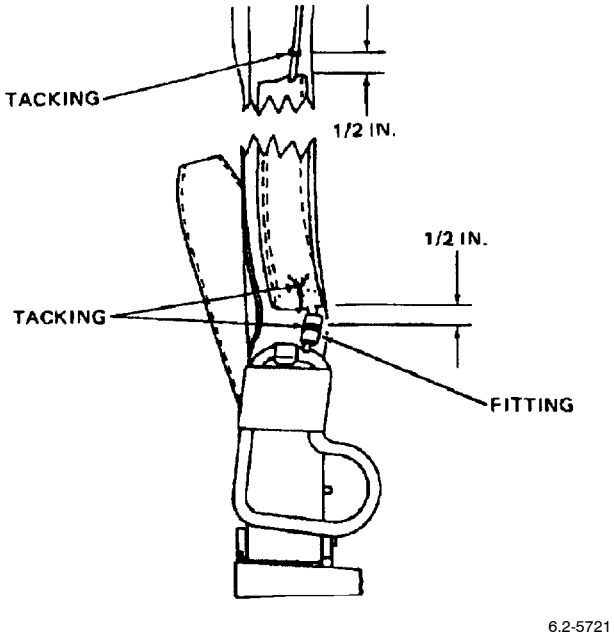


Figure 14. Ripcord Assembly Replacement

e. Measure 1/2-in. down from bottom of ripcord tunnel and tack ripcord housing thru riser at edge of ripcord channel, with three turns of size 6 thread, double and waxed; tie off (Figure 14).

f. Measure 1/2-in. up from top of ripcord tunnel and tack ripcord housing to riser with three turns of size 6 thread, double and waxed; tie off (Figure 14).

g. Tack bottom of ripcord tunnel closed with two turns of size 6 thread, double and waxed; tie off (Figure 14).

29. CONNECTOR STRAP REPAIRS.

30. GENERAL.

a. Repair of connector straps is limited to cleaning of contaminated areas. Replace connector straps if any other damage exists that may affect the safe operation of the parachute assembly.

31. REPLACEMENT OF CONNECTOR STRAP.

Support Equipment

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

NOTE

For Double "L" Connector Link, refer to Paragraph 32 for disassembly, assembly, and inspection instructions.

a. Inspect replacement connector strap per WP 014 02.

b. Insert temporary locking pin in last daisy chain loop of four-line release lanyard.

c. Remove connector link yoke and plate assemblies.

d. Remove connector links from riser loops and then remove defective connector strap.

e. Inspect connector strap for contamination, cuts, fraying, burns, and loose or broken stitching.

f. Insert connector links thru loop in each end of connector strap and then thru loops in riser assembly.

g. Reattach yoke and plate assemblies to connector links ensuring knurled portions of plate face up and screwheads face outboard.

h. Remove temporary locking pin from four-line release daisy chain.

i. Tighten screws on top and bottom connector links to a torque value of 20 to 25 in-lbs. (QA)

j. Apply torque seal to each connector link screwhead.

32. REPLACEMENT OF MS22021-1 CONNECTOR LINK (SPEED LINK) WITH MS22002-1 (DOUBLE "L") CONNECTOR LINK.

NOTE

New canopies received from supply may have the Double "L" Connector Links installed.

Instructions for attachment of Firing Lanyards, PDVL's, Four-Line Release Systems, etc., will remain the same and will be contained in the application parachute manual.

Materials Required

Specification or Nomenclature	Part Number
MS22002-1	Connector Link (Double "L")
F-900 Torque Seal (Color Optional)	Sealing Compound
—	Torque Screwdriver
MIL-S-43243 (See WP 002 00)	Separator, Link or Equivalent

a. Remove yoke and plate assembly from parachute connector link, P/N MS22021-1.

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

c. Remove cross-connector strap.

d. Slide riser loop off connector link bar and dispose of connector link, P/N MS22021-1.

e. Remove screws from the double "L" connector link, P/N MS22002-1 and separate the two halves of the link.

f. It may be necessary to use a separator device to separate the two halves of the connector link if a separator device is not available, loosen both screws of the connector link by four turns. Place a long bar between the connector link bars to hold the link in place. Using a rawhide or rubber mallet, tap one screw head and then the other screw head several times until the connector link bars separate.

g. Install suspension lines on the new connector link bar. The short leg of the "L" connector is to be positioned to the inside (Figure 15).

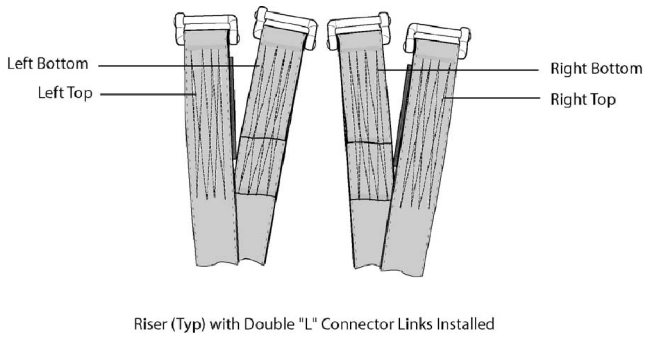


Figure 15. Double "L" Connector Link Layout

h. Install cross-connector strap.

i. Slide riser loop onto opposite connector link bar.

j. Mate both halves of the connector link together.

k. Install screws (2 each).

NOTE

Screws must make a minimum of 6 full turns prior to applying torque.

l. Check suspension line continuity. (QA)

m. Tighten screws to a torque value of 15 in-lbs. (QA)

WARNING

Care must be taken when tightening screws as screwdriver may slip and cause minor injury.

NOTE

It may be necessary to check the torque value on each screw more than once due to the interference fit design feature of the connector link.

n. Apply torque seal to both screw heads and allow to dry before proceeding with remainder of parachute packing.

o. Repeat steps a through l on each riser group.

p. Re-identify the parachute canopy by using an indelible black pen to cross out the existing part number and marking the new superceding part number per Illustrated Parts Breakdown (IPB) WP 014 04.

ORGANIZATIONAL, INTERMEDIATE, AND DEPOT MAINTENANCE

ILLUSTRATED PARTS BREAKDOWN

NES-8B PERSONNEL PARACHUTE ASSEMBLY

PART NO. 574AS100-4

List of Effective Work Package Pages

Page No.	Chg. No.	Page No.	Chg. No.	Page No.	Chg. No.	Page No.	Chg. No.
1	11	2 thru 5	9	6 thru 7	11		

Reference Material

Intermediate and Depot Maintenance, Packing Procedures, NES-8B Personnel Parachute Assembly ..... WP 014 02

Alphabetical Index

List of Figures

Record of Applicable Technical Directives

None

1. INTRODUCTION.

a. This Work Package (WP) contains information for ordering and identifying parts for the NES-8B Personnel Parachute Assembly (Figure 1).

2. USABLE ON CODES.

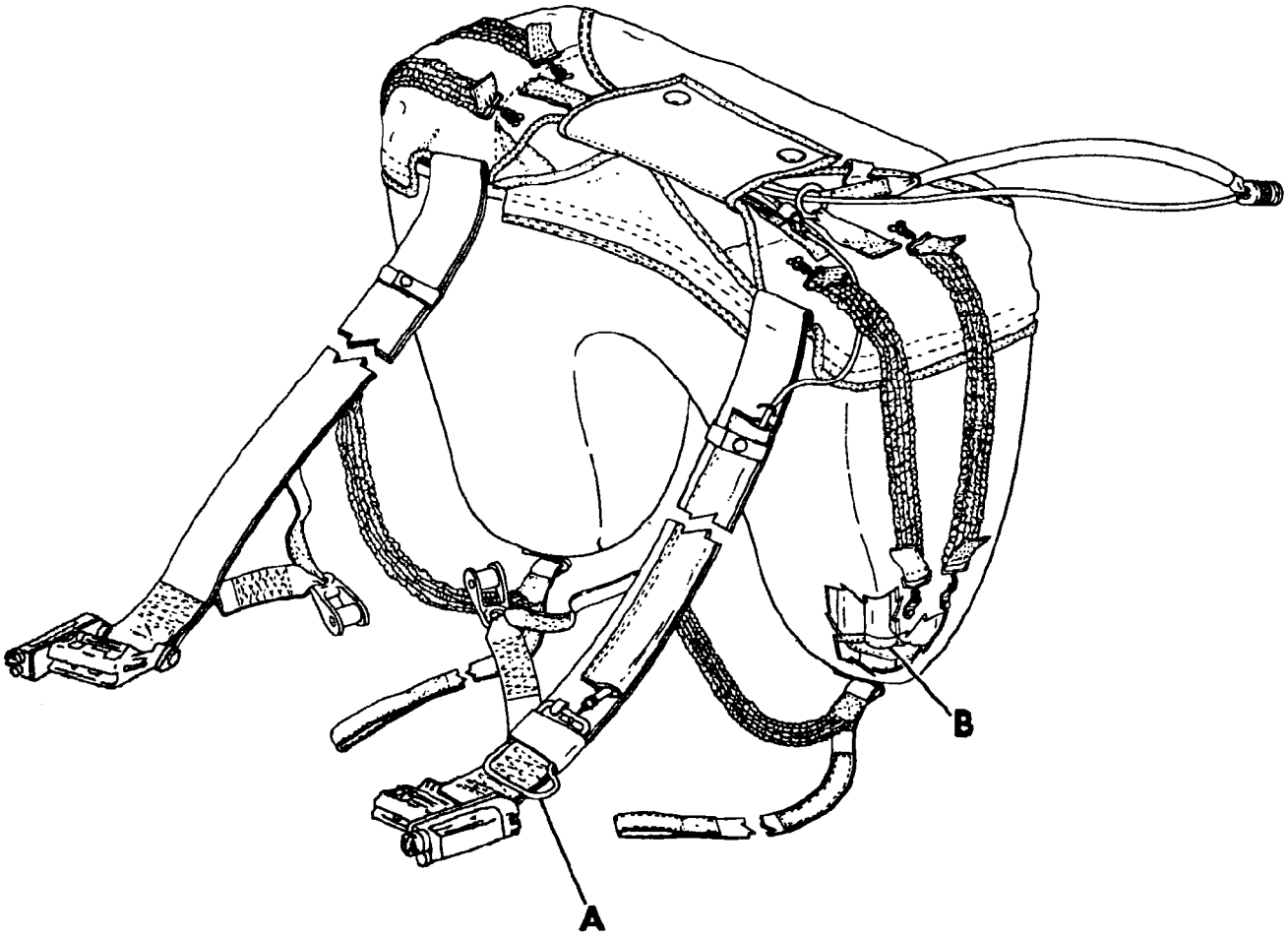
a. The usable on codes in this WP refer to the aircraft applications for the NES-8B Personnel Parachute Assembly.

b. The following usable on codes apply to this WP:

A - F-4

3. SERVICE/TOTAL LIFE.

a. The service/total life information is contained in WP 014 02.



6.2-5766

Figure 1. NES-8B Personnel Parachute Assembly (Sheet 1 of 6)

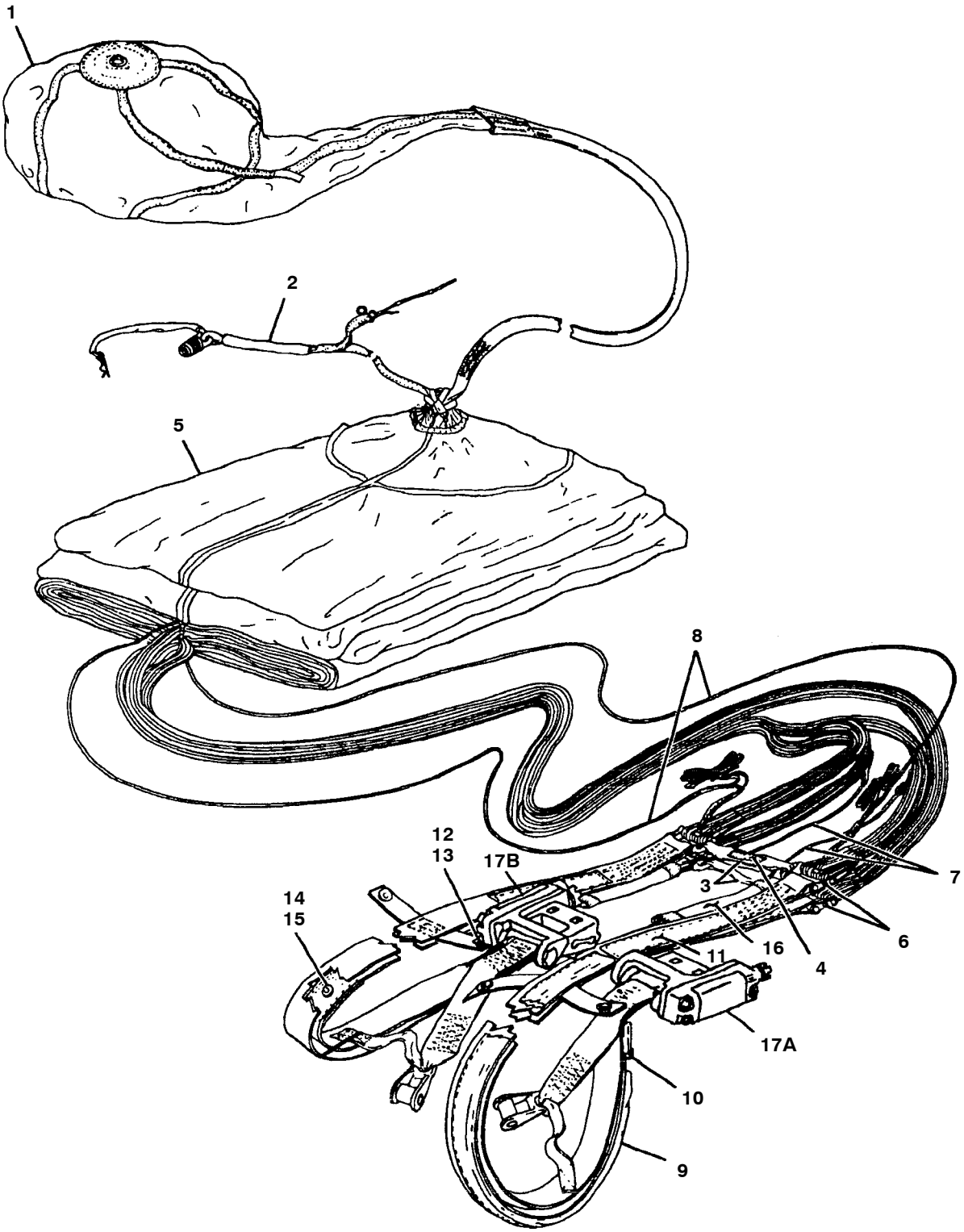


Figure 1. NES-8B Personnel Parachute Assembly (Sheet 2 of 6)

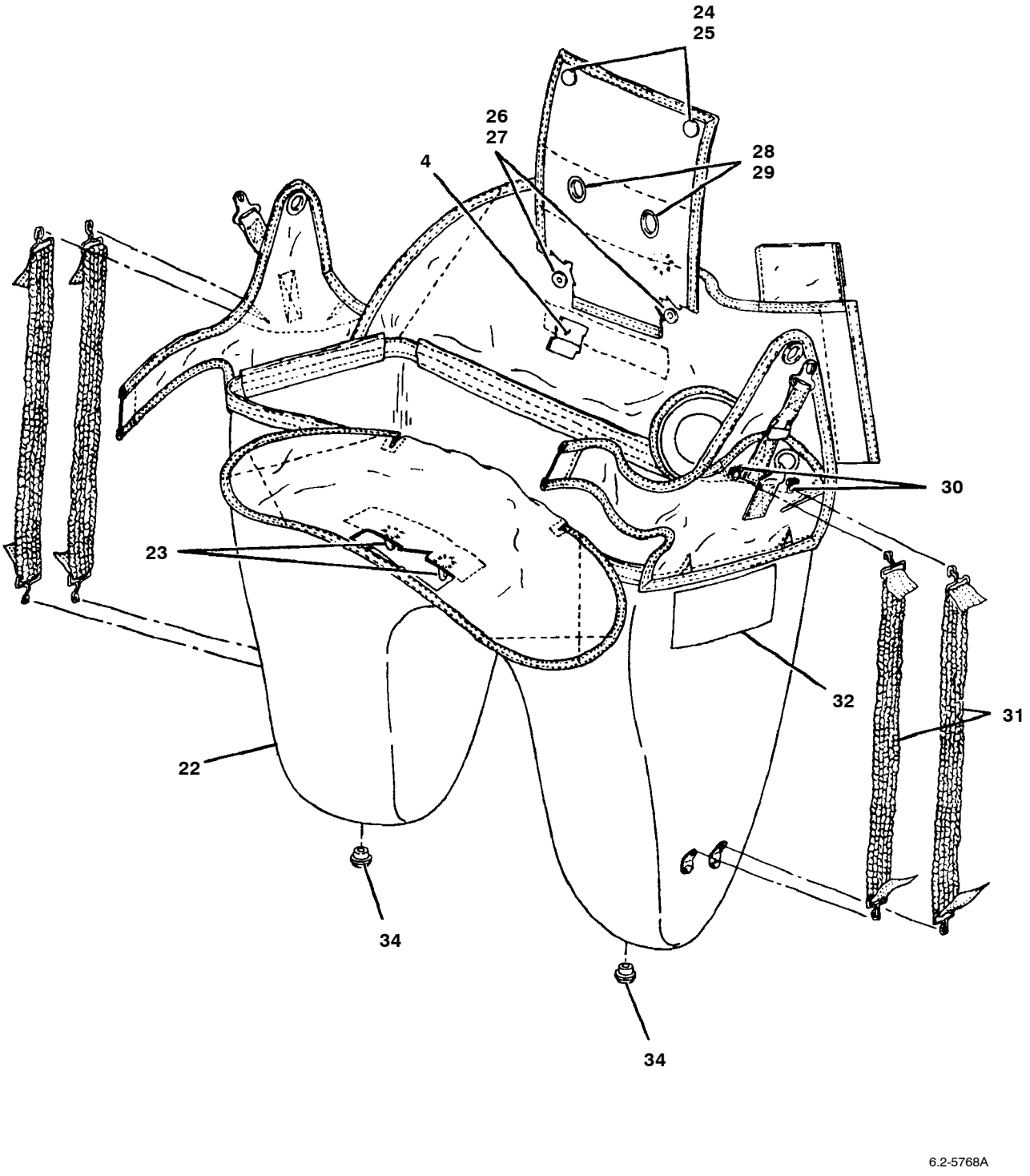
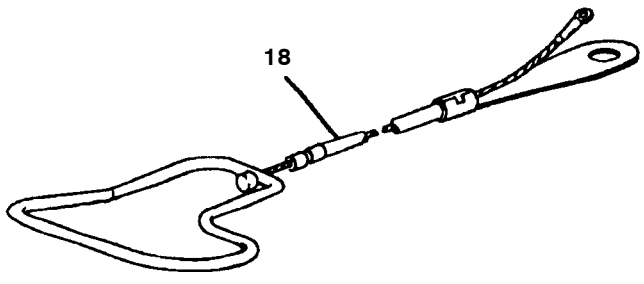


Figure 1. NES-8B Personnel Parachute Assembly (Sheet 3 of 6)



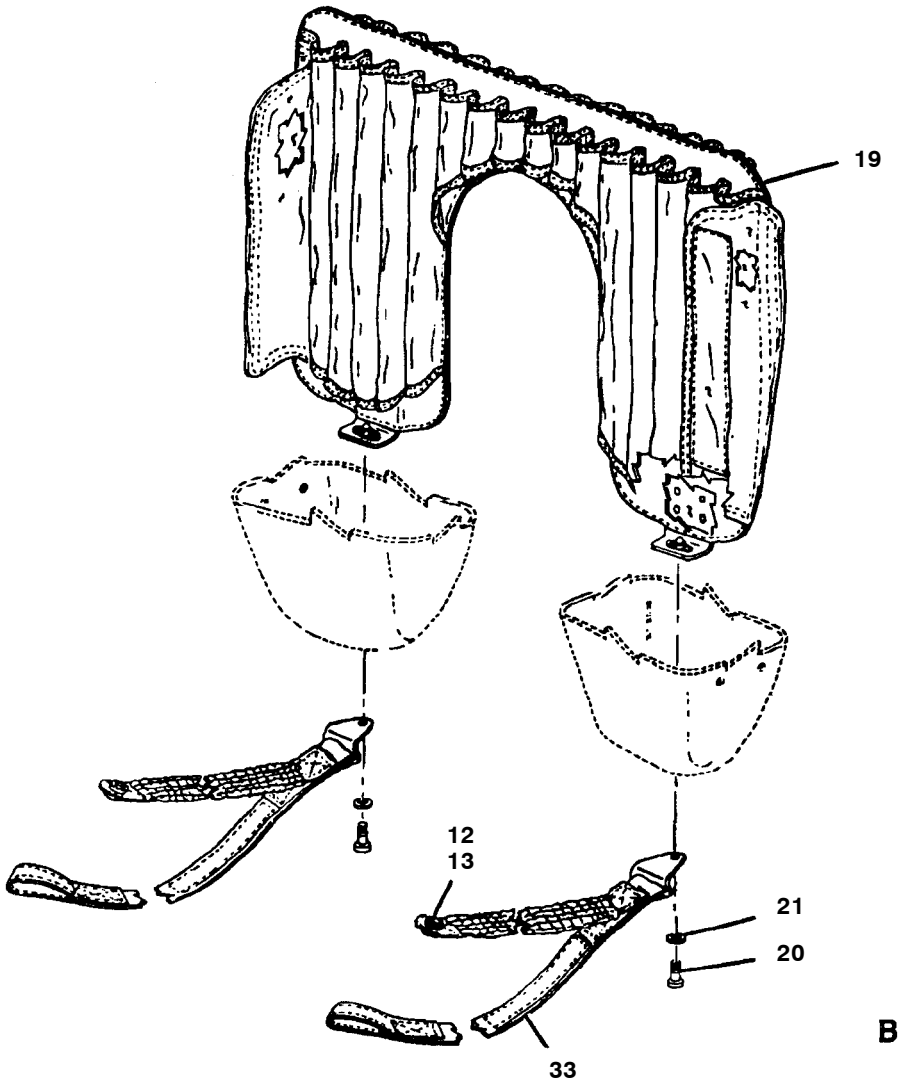


Figure 1. NES-8B Personnel Parachute Assembly (Sheet 4 of 6)

INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE	SM&R CODE
	574AS100-4	PARACHUTE ASSEMBLY, COMPLETE, NES-8B	REF	A	AGOGG
1	755AS105-1	. PARACHUTE ASSEMBLY	1		PCGZZ
2	MBEU12247PA	. LINE, PARACHUTE WITHDRAWAL/U1604/	1		PCGZZ
3	677AS100-2	. STRAP, CROSS CONNECTOR	2		PCGZZ
4	676AS100-1	. . LABEL	4		MDGZZ
5	60A113E5-18	. CANOPY ASSEMBLY	1	*	PCGGG
	60A113E5-20	. CANOPY ASSEMBLY (WITH DOUBLE "L" CONNECTOR LINK INSTALLED)	1	*	PCGGG
6	MS22021-1	. . LINK, REMOVABLE CONNECTOR	4	*	PAGZZ
	MS22002-1	. . CONNECTOR LINK (DOUBLE "L")	4	*	PAGZZ
7	666AS101-6	. . LANYARD, FOUR LINE RELEASE	2		MGGZZ
8	69C128	. LINE ASSEMBLY, PDVL	2		PCGZZ
9	755AS104-22	. RISER ASSEMBLY	1		PCGGG
10	755AS119-1	. . RETAINER, RIPCORD GRIP	1		XBGZZ
11	MS27980-1B	. . FASTENER, BUTTON	3		PAGZZ
12	MS27980-6B	. . FASTENER, SOCKET	3		PAGZZ
13	MS27980-7B	. . FASTENER, STUD	2		PAGZZ
14	MS27980-8B	. . FASTENER, EYELET	2		PAGZZ
15	666AS102-4	. . FLUTE, FOUR-LINE RELEASE LANYARD	1		MGGZZ
16	852AS117-3	. SENSING RELEASE UNIT, PARACHUTE HARNESS MXU-746/P LEFT SIDE	1		AGGGG
17	852AS117-4	. SENSING RELEASE UNIT, PARACHUTE HARNESS MXU-747/P RIGHT SIDE	1		AGGGG
17A	990055-1	. . RELEASE ASSEMBLY, CANOPY/99449/	2	*	PAGZZ
	015-10307-5	. . RELEASE ASSEMBLY, CANOPY/99449/ (USE UNTIL EXHAUSTED)	2	*	PAGZZ
18	7947319-10	. RIPCORD ASSEMBLY	1		PAGZZ
19	755AS108-1	. BOARD ASSEMBLY, LINE STOWAGE/ /ATTACHING PARTS/	1		PAGZZ
20	MS27039-0810	. SCREW, MACHINE	2		PAGZZ
21	AN960PD10	. WASHER, FLAT ---*---	2		PAGZZ
22	7947311-10	. CONTAINER ASSEMBLY/98750/	1		PCGGG
23	60A113C24-1	. . CONE, 0.410 GRIP	3		PAGZZ
24	MS27980-1N	. . FASTENER, BUTTON	2		PAGZZ
25	MS27980-6N	. . FASTENER, SOCKET	2		PAGZZ
26	MS27980-7N	. . FASTENER, STUD	2		PAGZZ
27	MS27980-8N	. . FASTENER, EYELET	2		PAGZZ

Figure 1. NES-8B Personnel Parachute Assembly (Sheet 5 of 6)

INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE	SM&R CODE
28	MS22048C1	. . GROMMET	4		PAGZZ
29	60A113C25-1	. . WASHER	4		PAGZZ
30	60A113C28-1	. . EYE	4		PAGZZ
31	60A113D11-7	. . SPRING ASSEMBLY, CONTAINER OPENING	4	*	PAOZZ
	MS70105-6	. . SPRING ASSEMBLY, CONTAINER OPENING	4	*	PAOZZ
32	7947359-01	. . MARKER, CONTAINER/98750/	1		MDGZZ
33	MBEU5223PA	. . . RESTRAINT SYSTEM ASSEMBLY	2		PAGGG
34	MS20230B10	. . GROMMET ASSEMBLY	2		PAGZZ

Figure 1. NES-8B Personnel Parachute Assembly (Sheet 6 of 6)

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