

**ORGANIZATIONAL, INTERMEDIATE AND DEPOT MAINTENANCE**

**DESCRIPTION AND PRINCIPLES OF OPERATION**

**NES-12 PERSONNEL PARACHUTE ASSEMBLY**

**PART NO. 576AS100-37 AND 576AS100-38**

**List of Effective Work Package Pages**

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**Reference Material**

Organizational, Intermediate and Depot Maintenance, Illustrated Parts Breakdown,  
 NES-12 Personnel Parachute Assembly ..... WP 019 04

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**Record of Applicable Technical Directives**

None

**1. DESCRIPTION.**

**2. GENERAL.**

a. The NES-12 Personnel Parachute Assembly is a back-type parachute used with a PCU-33/P or PCU-56/P parachute restraint harness as part of an ejection seat escape system (Figures 1 and 2).

b. The NES-12 assembly includes a multicolored (white, olive green, international orange, and sand shade), 28 ft. diameter, flat, circular nylon canopy with 28 gores modified with water deflation pockets on alternate gores and spreading gun loops. The canopy is packed in a semirigid contoured container. An automatic parachute ripcord release (APRR) is used to open the container and a ballistic spreading gun is used to rapidly extend the canopy skirt hem during deployment. A unique feature of this assembly is the use of a tristage external pilot parachute stowed in a pocket on the container flap. The riser assembly includes two roller fitting assemblies used with the ejection seat restraint system, two canopy release fittings which connect to adapters on the PCU-33/P or PCU-56/P parachute restraint harness and a ripcord assembly retained in a riser flute and a metal ripcord retainer. The container has two strap adapters for attachment of the survival kit. In S-3 aircraft applications, a lumbar pad is used to provide back support.

**3. CONFIGURATIONS.**

a. Two different configurations of the NES-12 parachute assembly may be used inservice. The difference is the type of cartridge and the lumbar pad. Refer to Illustrated Parts Breakdown (WP 019 04) for exact configuration requirements.

**4. SUBASSEMBLY CONFIGURATIONS.**

a. The subassemblies listed below and shown in Figure 3 make up the NES-12 parachute assembly. Refer to Illustrated Parts Breakdown (WP 019 04) for detailed information on subassemblies.

- Tristage External Pilot Parachute
- Internal Bridle Assembly
- Deployment Bag
- Pilot Parachute
- Canopy Assembly
- Ripcord Assembly
- Spreading Gun Assembly
- Automatic Parachute Ripcord Release
- Riser Assembly

Connector Straps

Container Assembly

Parachute Harness Sensing Release Units

**5. PRINCIPLES OF OPERATION.**

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

a. When an aircrew ejects above the ripcord release predetermined altitude, the following functions take place after aircrew/seat separation:

(1) The ripcord release arming pin is withdrawn as the aircrew separates from the seat. The release aneroid mechanism locks the firing pin and hammer preventing the release from firing.

(2) The tristage external pilot parachute is deployed during aircrew/seat separation by a static line attached between the seat and deployment bag. Full inflation of the external pilot parachute occurs at speeds from 0 to 90 KIAS. At speeds between 90 and 250 KIAS the diameter reduces to 24-in; at speeds in excess of 250 KIAS complete inversion occurs. If complete inversion occurs, the effective drag is still enough to stabilize the aircrew during free fall and aid in the extraction of the main canopy during deployment.

(3) The aircrew remains stabilized during free fall by the external pilot parachute until increasing air pressure causes the ripcord release aneroid to contract. As the preset altitude is reached (14,000 ± 1000 ft.), the aneroid has contracted enough to allow the firing pin and hammer to unlock.

(4) The hammer firing pin strikes the cartridge.

(5) The cartridge fires after a time delay.

(6) The piston is forced forward in the release barrel, pulling the power cable which is attached to the top ripcord pin. The ripcord pins are pulled, allowing the container grommets and locking cones to separate.

(7) The container spring opening assemblies pull the side flaps apart allowing the pilot parachute to spring from the container and inflate.

(8) The external pilot parachute release unlocks, freeing the shear link cable as the container opens. Once freed, the external pilot parachute aids in deployment of the canopy. Should the external pilot parachute release fail to release at container opening, the nylon tape securing the canopy apex to the loop on radial seam 15 will allow for an increase of canopy mass accelerated out of the parachute container. This increases the reliability of the override disconnect.

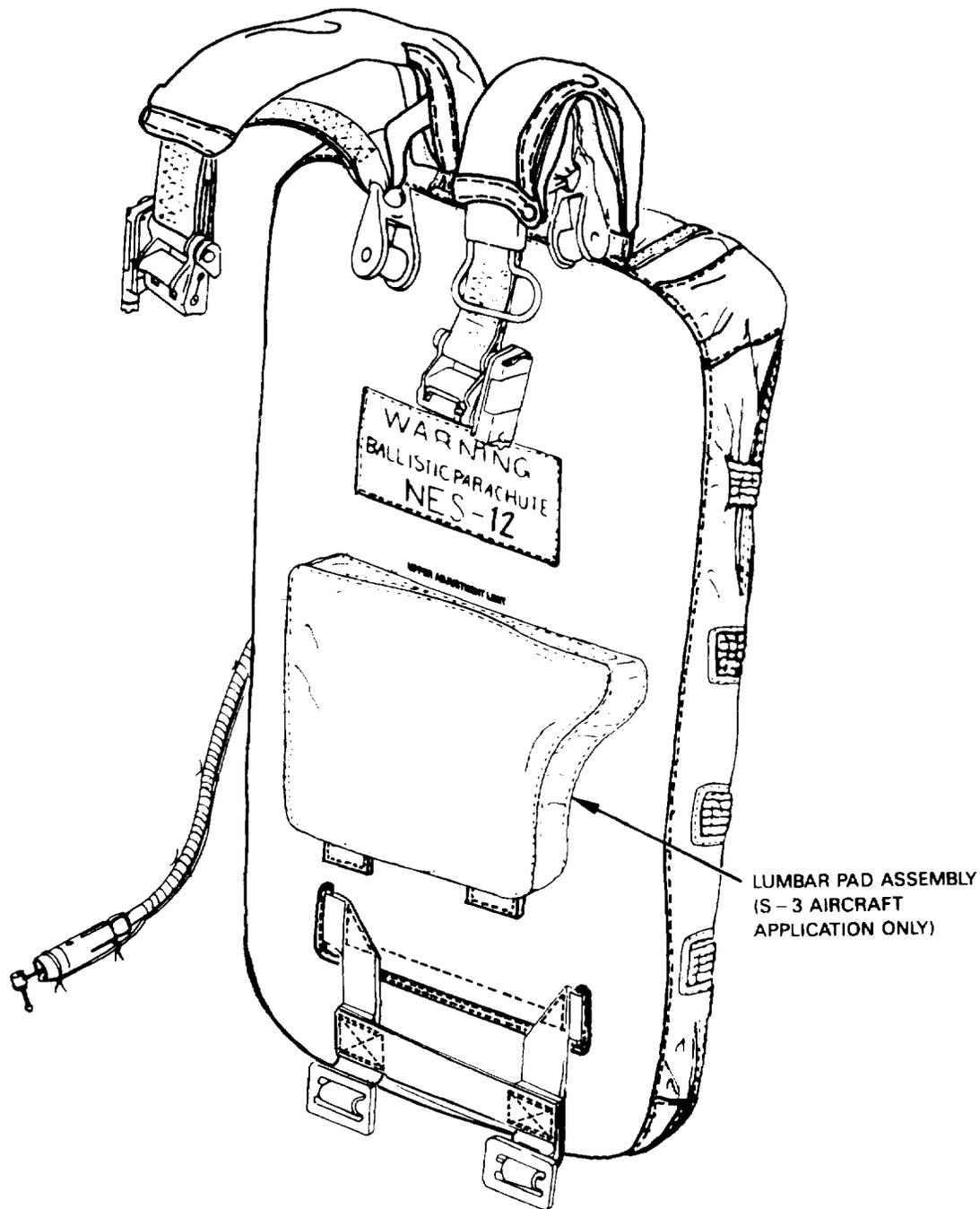
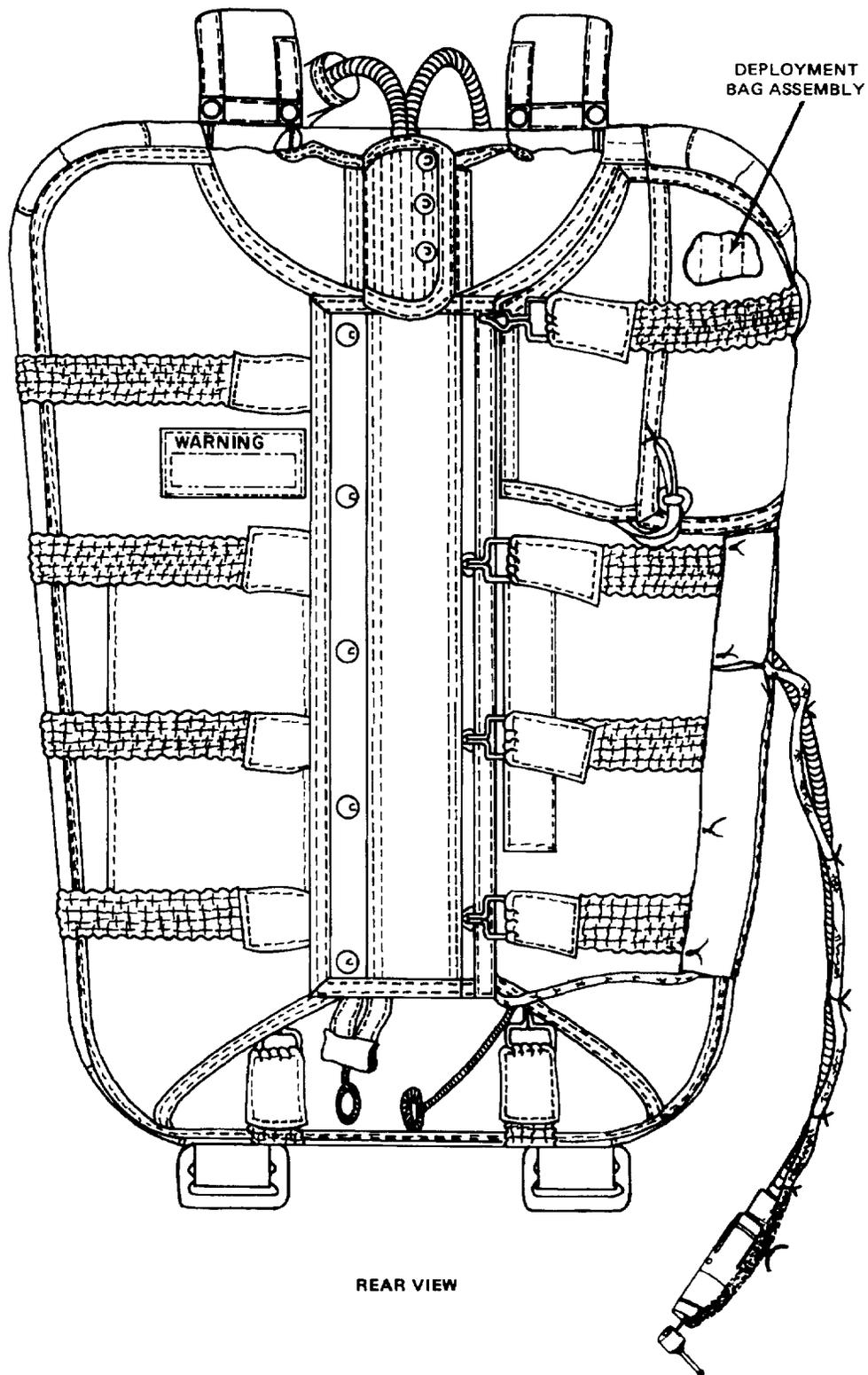


Figure 1. NES-12 Personnel Parachute Assembly



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Figure 2. NES-12 Personnel Parachute Assembly

(9) The aircrew falling away from the external and internal pilot parachutes causes the canopy to be extracted from the container followed by the suspension lines. This action causes the nylon tape to break, allowing full inflation.

(10) Just prior to full canopy and suspension line deployment, the spreading gun firing lanyard pulls the firing pin from the firing mechanism. This releases the striker which, under spring pressure, strikes and initiates the cartridge.

(11) Gas pressure from the cartridge forces out the internal pistons propelling the slugs outward. The slugs simultaneously drag the attached suspension lines outward in a 360-degree spread, allowing a more rapid opening of the canopy.

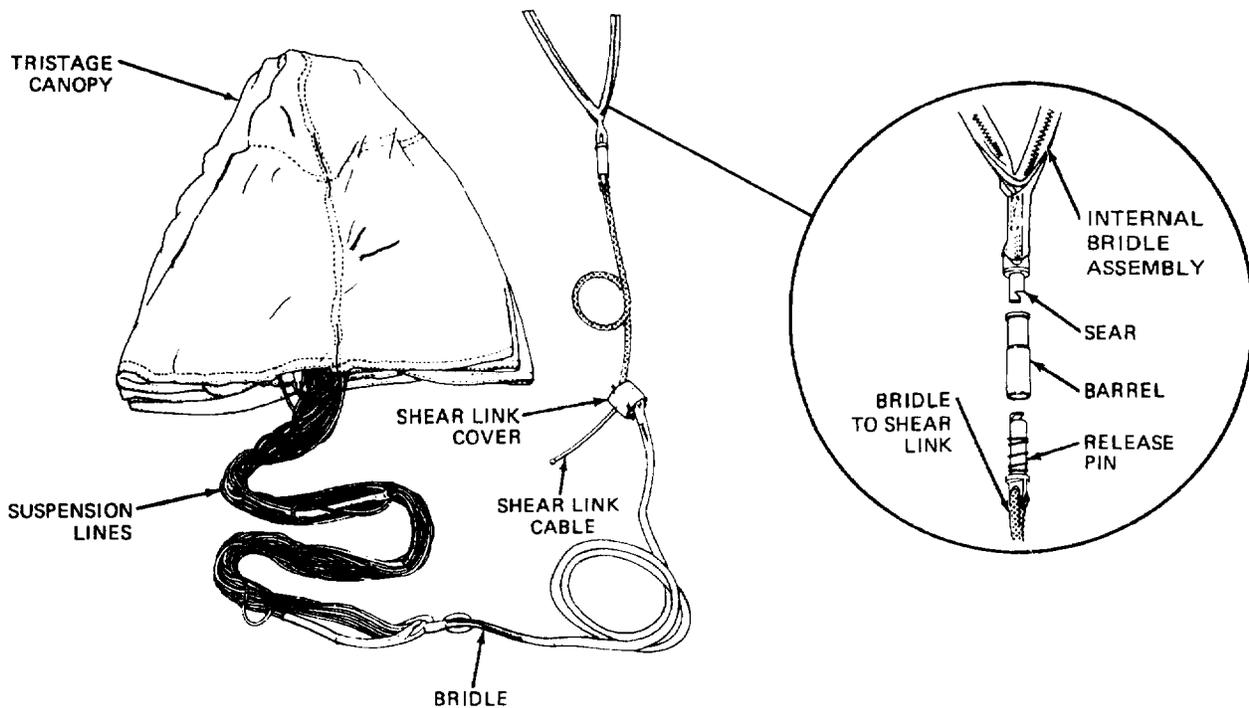
(12) In the event of a spreading gun malfunction, a failsafe backup subsystem operates. After the firing pin is withdrawn, tension on the firing lanyard is exerted on the fail-safe assembly sleeve which retracts the shear band assembly. This releases the slugs and allows the canopy to inflate aerodynamically.

(13) As load is applied, the risers rotate off the retainer supports and the connector link ties break. The releasable clamp lanyard is pulled from the base plate stud, releasing the clamp and freeing the ripcord cable housing. Full deployment of the parachute then occurs. The aircrew descends suspended in the PCU-33/P or PCU-56/P parachute restraint harness.

(14) 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.

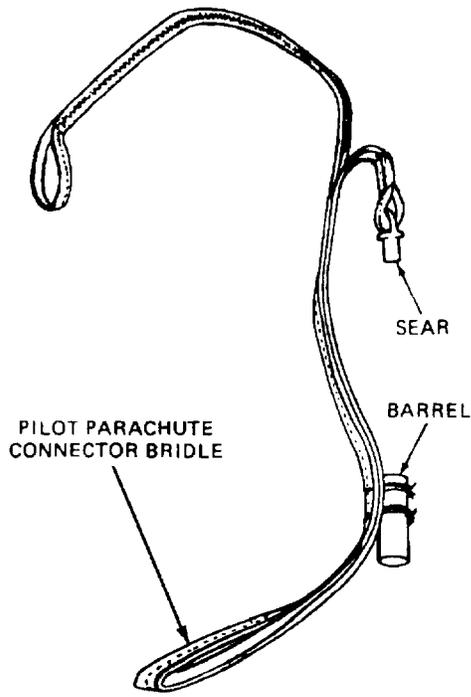
(15) Upon landing, the aircrew disengages the canopy from the PCU-33/P or PCU-56/P parachute restraint harness by actuation of the canopy release assembly.

(16) The parachute harness sensing release units provide an automatic backup method of releasing the risers after the aircrew makes a seawater entry.



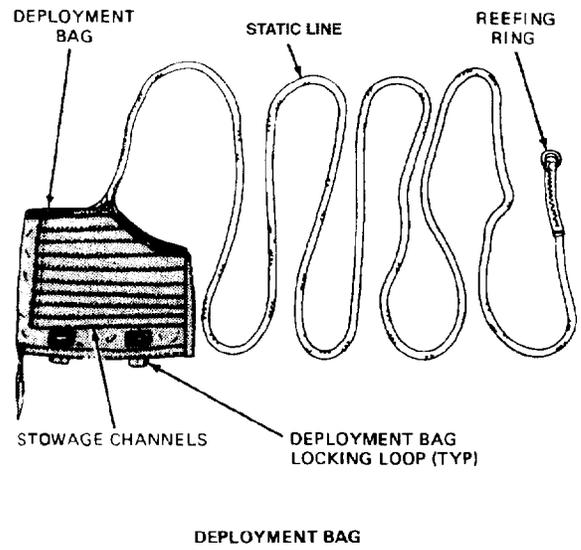
TRISTAGE EXTERNAL PILOT PARACHUTE

Figure 3. NES-12 Subassemblies (Sheet 1 of 5)

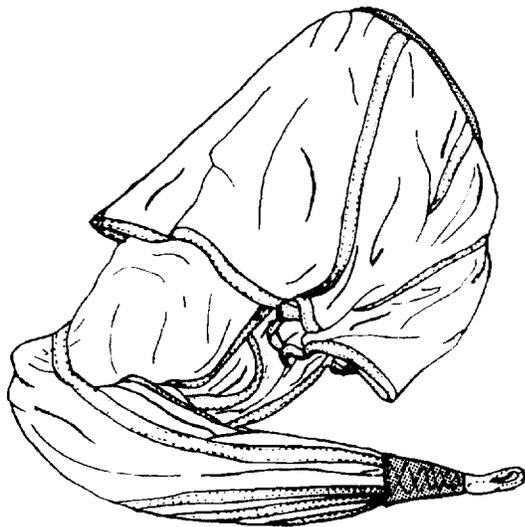


INTERNAL BRIDLE ASSEMBLY

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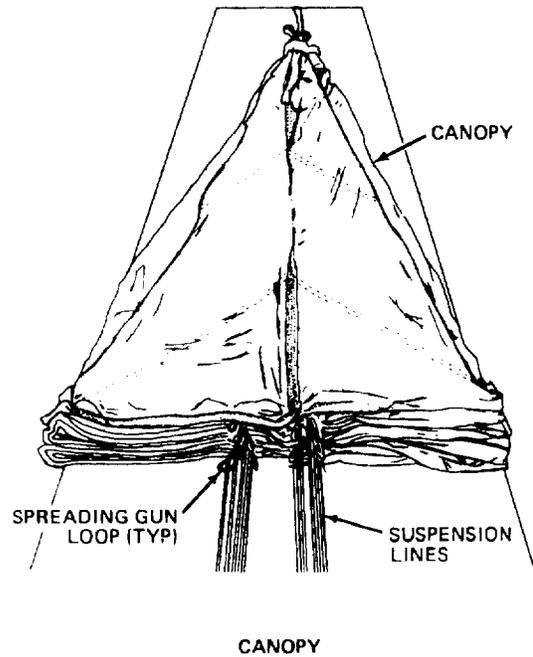


6.2-6136C



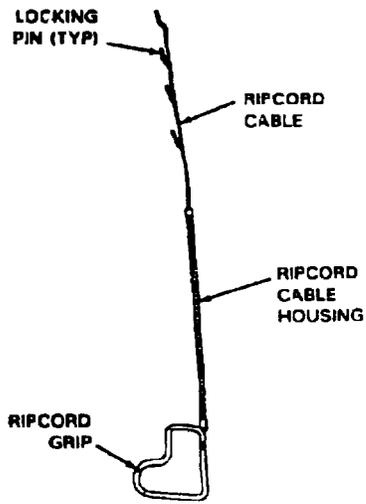
INTERNAL PILOT PARACHUTE

6.2-6136B

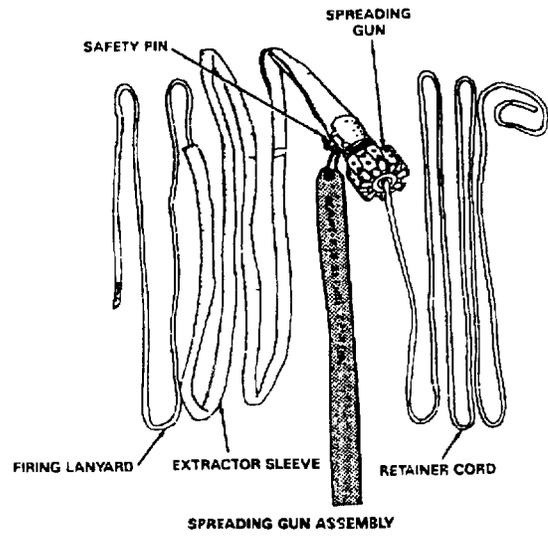


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Figure 3. NES-12 Subassemblies (Sheet 2 of 5)



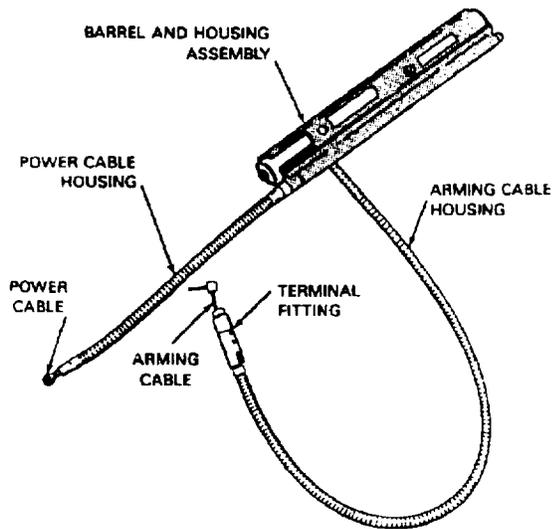
RIPCORD ASSEMBLY



SPREADING GUN ASSEMBLY

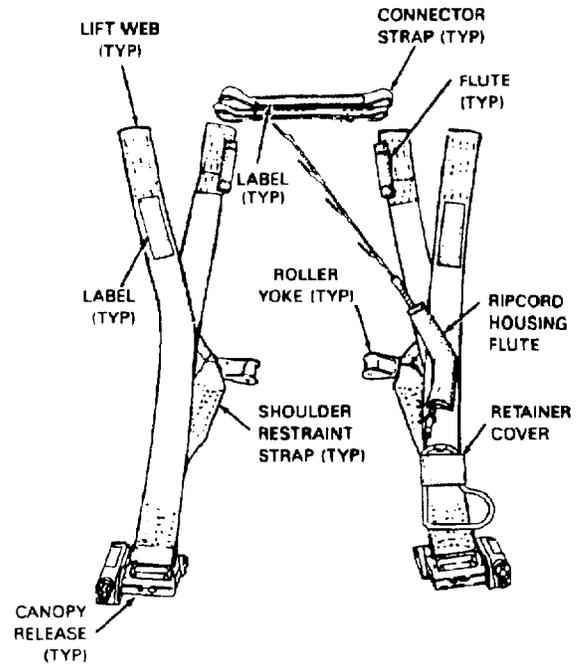
6.2-5147B

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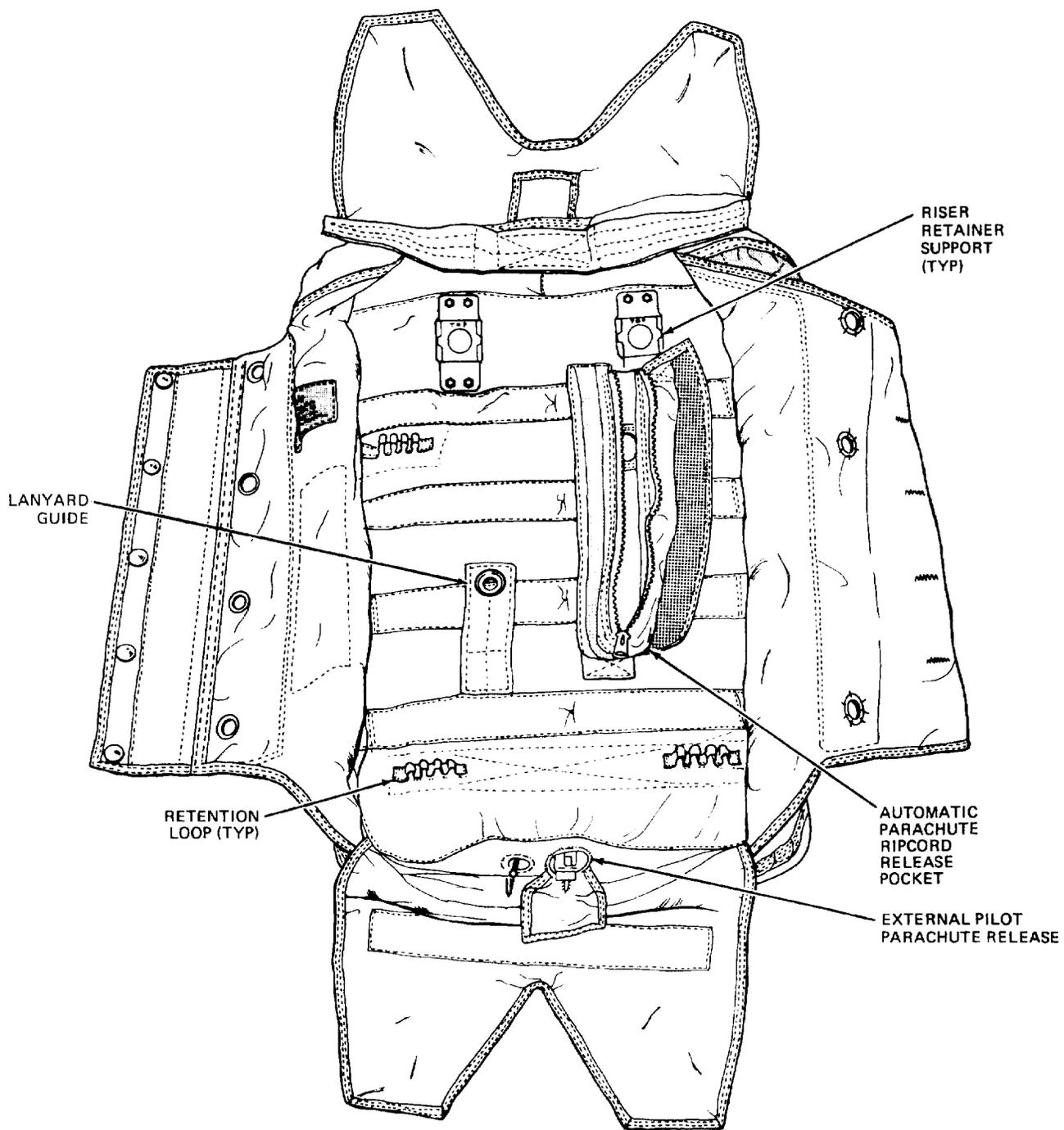
AUTOMATIC PARACHUTE RIPCORD RELEASE

6.2-5147A



6.2-5147C

Figure 3. NES-12 Subassemblies (Sheet 3 of 5)



CONTAINER ASSEMBLY (INSIDE)

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Figure 3. NES-12 Subassemblies (Sheet 4 of 5)

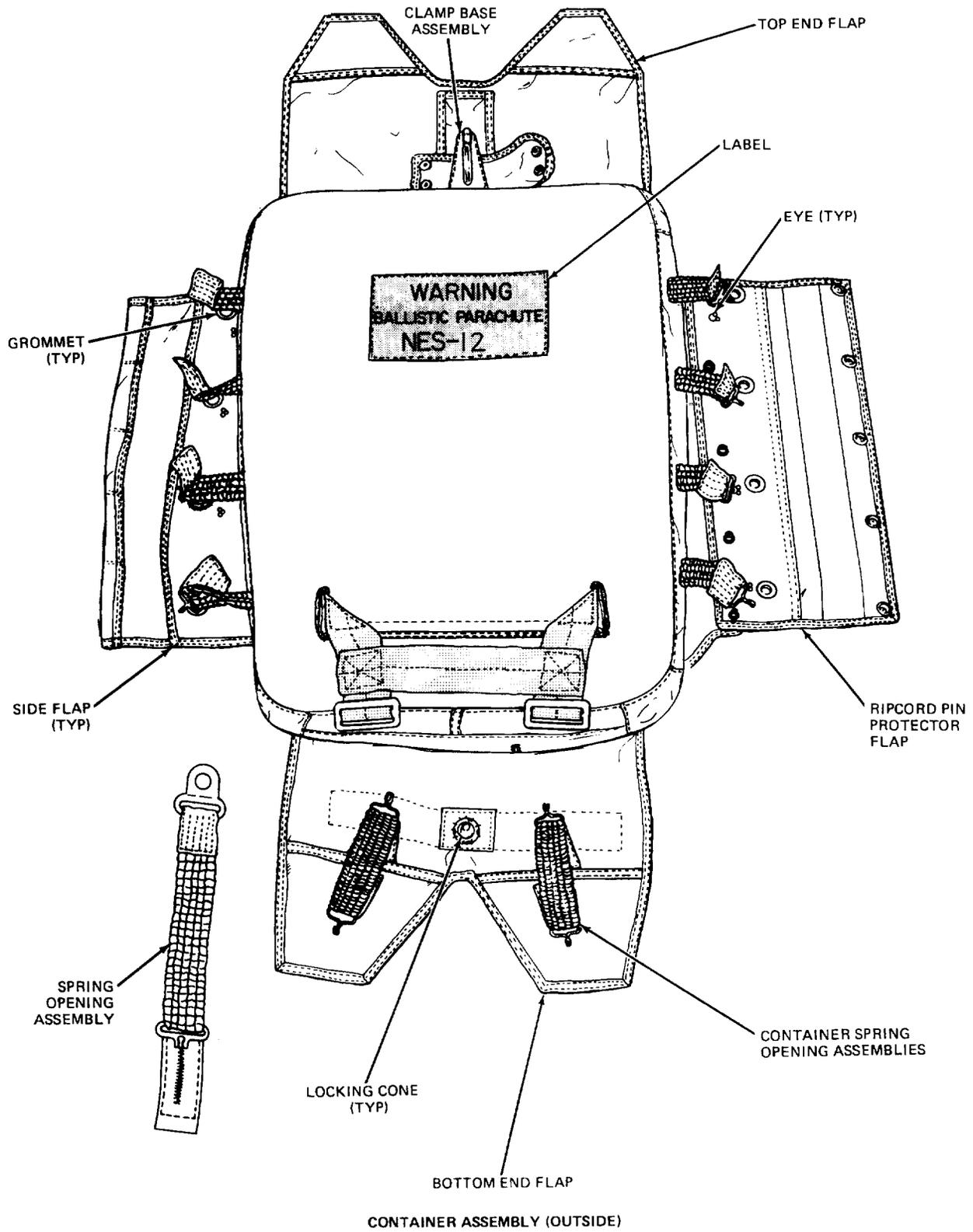


Figure 3. NES-12 Subassemblies (Sheet 5 of 5)

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

a. When an aircrew ejects below the ripcord release predetermined altitude, the following functions take place after aircrew/seat separation:

(1) The ripcord release arming pin is withdrawn, unlocking the release firing pin and hammer.

(2) The tristage external pilot parachute is deployed during aircrew/seat separation by a static line attached between the seat and deployment bag. Full inflation of the external pilot parachute occurs at speeds from 0 to 90 KIAS. At speeds between 90 and 250 KIAS, the diameter reduces to 24-in.; at speeds in excess of 250 KIAS, complete inversion occurs. If complete inversion occurs, the effective drag is still enough to stabilize the aircrew during free fall and also to aid in the extraction of the main canopy during deployment. The effect of the external pilot parachute as an aid in withdrawing the internal pilot parachute and main canopy is especially important at low altitude or ground level ejection.

(3) The hammer firing pin strikes the cartridge.

(4) The cartridge fires after a time delay.

(5) The piston is forced forward in the release barrel, pulling the power cable which is attached to the top ripcord pin. The ripcord pins are pulled, allowing the container grommets and locking cones to separate.

(6) The container spring opening assemblies pull the side flaps apart, allowing the internal pilot parachute to spring from the container.

(7) The external pilot parachute release unlocks, freeing the shear link cable as the container opens. Once free, the external pilot parachute aids in deployment of the canopy. Should the external pilot parachute release fail to release at container opening, the nylon tape securing the canopy apex to the loop on radial seam 14 will allow for an increase of canopy mass accelerated out of the parachute container. This increases the reliability of the override disconnect.

(8) The aircrew falling away from the external and internal pilot parachutes causes the canopy to be extracted from the container followed by the suspension lines. This action causes the nylon tape to break, allowing full inflation.

(9) Just prior to full canopy and suspension line deployment, the spreading gun firing lanyard pulls the firing pin from the firing mechanism. This releases the striker which, under spring pressure, strikes and initiates the cartridge.

(10) Gas pressure from the cartridge forces out the internal pistons propelling the slugs outward. The slugs simultaneously drag the attached suspension lines outward in a 360-degree spread allowing a more rapid opening of the canopy.

(11) In the event of a spreading gun malfunction, a fail-safe backup subsystem operates. After the firing pin is withdrawn, tension on the firing lanyard is exerted on the failsafe assembly sleeve which retracts the shear band assembly. This releases the slugs and allows the canopy to inflate aerodynamically.

(12) As load is applied, the risers rotate off the retainer supports and the connector link ties break. The releasable clamp lanyard is pulled from the base plate stud, releasing the clamp and freeing the ripcord cable housing. Full deployment of the parachute then occurs. The aircrew descends suspended in the PCU-33/P or PCU-56/P parachute restraint harness.

(13) 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.

(14) 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 assembly.

(15) The parachute harness sensing release units provide 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 deploy the parachute after separation from the ejection seat, the following functions take place:

(1) The aircrew pulls the ripcord grip removing the ripcord pins from the container locking cones permitting the grommets and locking cones to separate.

(2) The container spring opening assemblies pull the side flaps apart allowing the pilot parachute to spring from the container and inflate.

■ (3) The override disconnect assembly releases the external pilot parachute from the internal bridle, allowing the internal pilot parachute to deploy the main canopy. The external pilot parachute remains packed in the deployment bag and outer pocket.

■ (4) The aircrew falling away from the internal pilot parachute causes the canopy to be extracted from the container followed by the suspension lines. The action causes the nylon tape to break, allowing full inflation.

■ (5) Just prior to full canopy and suspension line deployment, the spreading gun firing lanyard pulls the firing pin from the firing mechanism. This releases the striker which, under spring pressure, strikes and initiates the cartridge.

■ (6) Gas pressure from the cartridge forces out the internal pistons propelling the slugs outward. The slugs simultaneously drag the attached suspension lines outward in a 360-degree spread allowing a more rapid opening of the canopy.

■ (7) In the event of a spreading gun malfunction, a fail-safe backup subsystem operates. After the firing pin is withdrawn, tension on the firing lanyard is exerted on the

fail-safe assembly sleeve which retracts the shear band assembly. This releases the slugs and allows the canopy to inflate aerodynamically.

(8) As load is applied, the risers rotate off the retainer supports and the connector link ties break. The releasable clamp lanyard is pulled from the base plate stud, releasing the clamp and freeing the ripcord cable housing. Full deployment of the parachute then occurs. The aircrew descends suspended in the PCU-33/P or PCU-56/P parachute restraint harness. ■

(9) 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. ■

(10) 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 assembly. ■

(11) The parachute harness sensing release units provide an automatic backup method of releasing the risers after the aircrew makes a seawater entry. ■

## 9. REPACK SCHEDULE. ■

- a. Scheduled repack cycle is 1232 days. ■

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**ORGANIZATIONAL MAINTENANCE**

**REPAIR PROCEDURES**

**NES-12 SERIES PERSONNEL PARACHUTE ASSEMBLY**

**PART NO. 576AS100-37 and 576AS100-38**

**List of Effective Work Package Pages**

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 MXU-746/P and MXU-747/P ..... WP 024 02  
 Introduction ..... WP 002 00  
 Seat Survival Kits (SKU Series Seat Kits) ..... NAVAIR 13-1-6.3-2

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**Record of Applicable Technical Directives**

<u>Type/No.</u>	<u>Date</u>	<u>Title and ECP No.</u>	<u>Date Inc.</u>	<u>Rescission Date</u>
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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 (RFI) status.

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

- a. Review all applicable instructions in this WP prior to starting repair.
- b. Ensure that all necessary support equipment and materials required are available prior to starting repair.
- c. When required, remove enough material from its source for immediate use only. Ensure that the material identification ticket remains with the source material at all times. 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. RIPCORD HOUSING TACKING REPLACEMENT.**

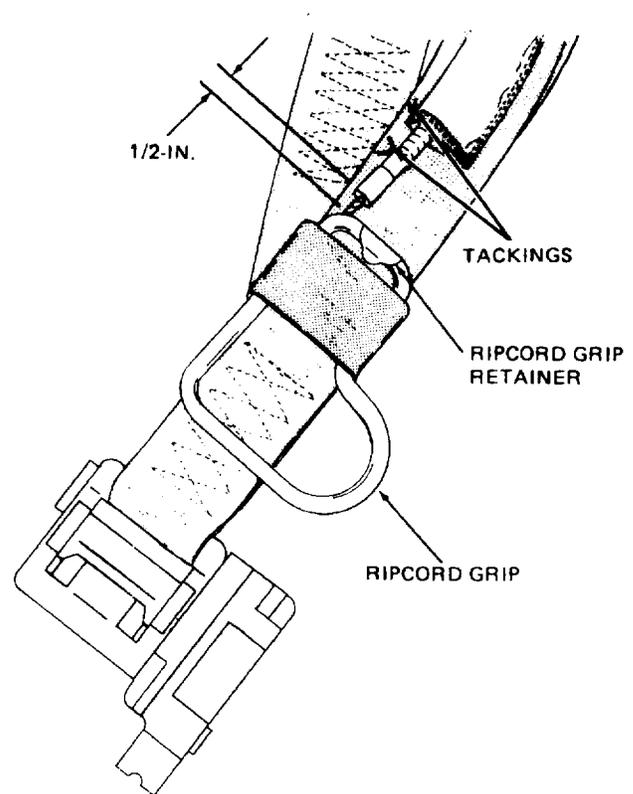
Materials Required

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 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. Position ferruled end of housing 1/2-in. from ripcord grip retainer (Figure 1).
- c. Tack housing to riser with three turns of size 6 thread, doubled and waxed. Tacking shall cross over grooved part of housing next to and snug against ferrule.



6.2-5664A

**Figure 1. Replacement of Ripcord Housing and Flute Tackings**

- d. Pull thread ends tight and tie off.

**6. RIPCORD HOUSING FLUTE TACKING 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 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. Tack edge of flute hem to inboard side of riser with one turn of size FF thread, single and waxed; tie off (Figure 1).

**7. RIPCORD GRIP RETAINER COVER REPAIR.**

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 ripcord grip 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 overlapping the 1 3/4-in. marks (Figure 2).

f. Tack ripcord grip retainer cover to uppermost portion of riser in four places with size FF thread, doubled and waxed; tie off (Figure 2). (QA)

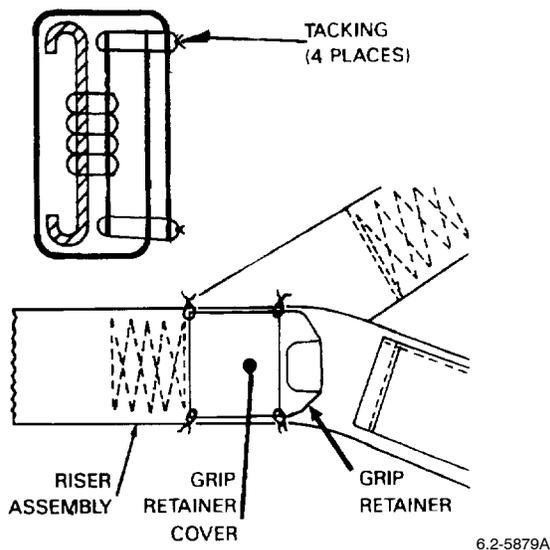


Figure 2. Ripcord Grip Retainer Cover Repair

**8. CONTAINER ASSEMBLY.**

**9. SAFETY TIE LUMBAR PAD SUPPORT REPLACEMENT.**

Materials Required

Specification or Part Number	Nomenclature
MIL-C-5040	Cord, Nylon, Type I or IA

**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. With a length of nylon cord, pass cord thru both grommets and tie off.

**10. EPC STATIC LINE LOOP TACKING 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 topped with a square knot, followed with a binder knot per WP 002 00. Trim off excess leaving 1/2-in.

- a. Remove loose or broken tacking.
- b. Tack lanyard loop in place to pocket edge with one turn of size E thread, single and waxed; tie off (Figure 3).

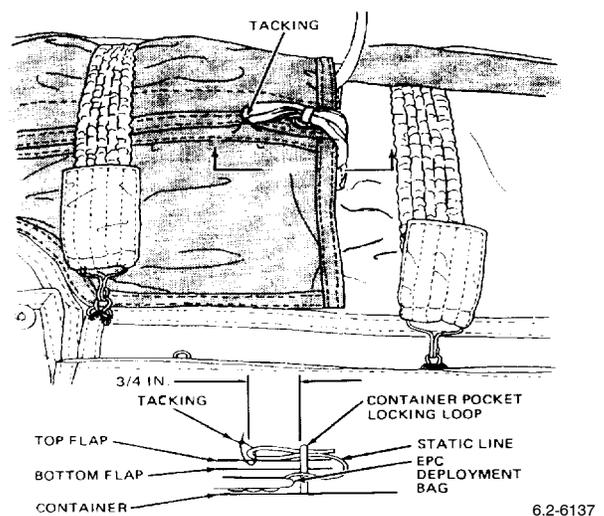


Figure 3. Replacement of EPC Static Line Loop Tacking

**11. EPC BRIDLE LINE/DEPLOYMENT BAG TAB TO PROTECTOR FLAP TACKINGS REPLACEMENT.**

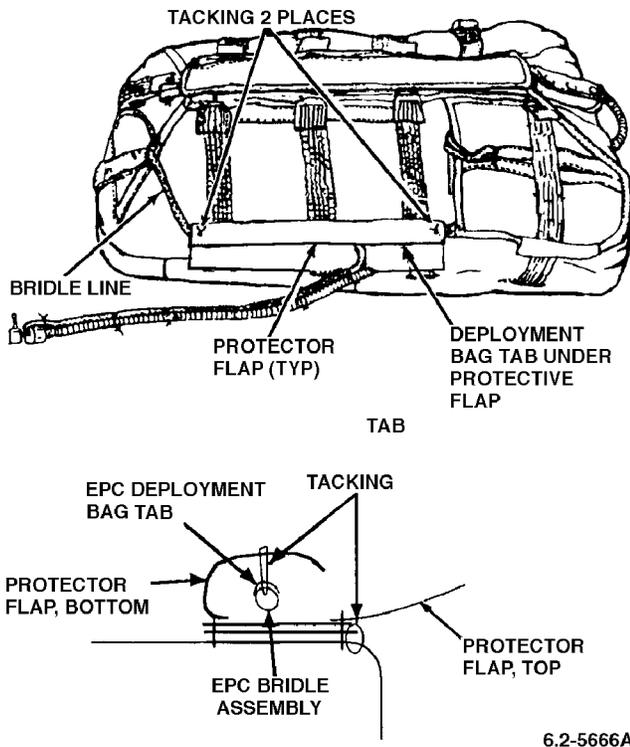
**Materials Required**

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 topped with a square knot, followed with a binder knot per WP 002 00. Trim off excess leaving 1/2-in.

- a. Remove loose or broken tacking(s).
- b. Replace tacking at top of protector tunnel by passing one turn of size E thread, single and waxed, thru bottom protector flap, deployment bag tab, and bridle in that order; tie off (Figure 4).
- c. Replace tacking at bottom of protector tunnel by passing one turn of size E thread, single and waxed thru bottom protector flap and bridle tie off (Figure 4).



**Figure 4. Replacement of EPC Bridle Line/Deployment Bag Tab to Protector Flap Tackings.**

**12. PROTECTOR FLAP 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 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. Ensure top flap is positioned over bottom flap.
- c. Replace top tacking by passing one turn of size E thread, single and waxed, thru top flap and bottom flap; tie off (Figure 5).
- d. Replace middle tacking by passing one turn of size E thread, single and waxed, thru both slit edges of the top flap, static line and bottom flap; tie off (Figure 5).
- e. Replace bottom tacking by passing one turn of size E thread, single and waxed, thru top and bottom flaps only; tie off (Figure 5).

**13. SHEAR LINK 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 topped with a square knot, followed with a binder knot per WP 002 00. Trim off excess leaving 1/2-in.

- a. Remove loose or broken tackings.

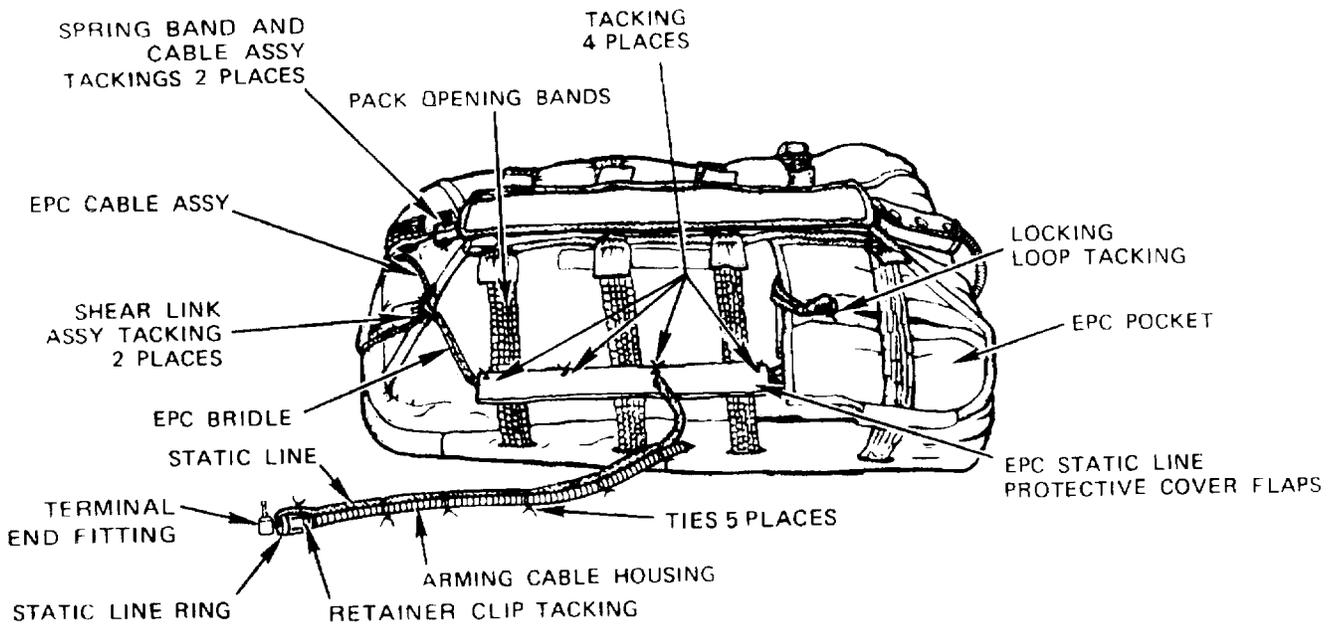


Figure 5. Replacement of Protector Flap, Shear Link, and Static Line Tackings

6.2-5667A

b. Ensure shear link is positioned under side flap. Secure by tacking release cable to side flap, with one turn of size E thread, single and waxed; tie off.

c. Tack bridle line to side flap, with one turn of size E thread single and waxed; tie off (Figure 5).

**14. STATIC LINE TO ARMING CABLE RETAINER CLIP ASSEMBLY TACKING 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 topped with a square knot, followed with a binder knot per WP 002 00. Trim off excess leaving 1/2-in.

a. Route a 12-in. length size 6 thread, single and waxed, around static line at concave groove in retainer clip (Figure 6).

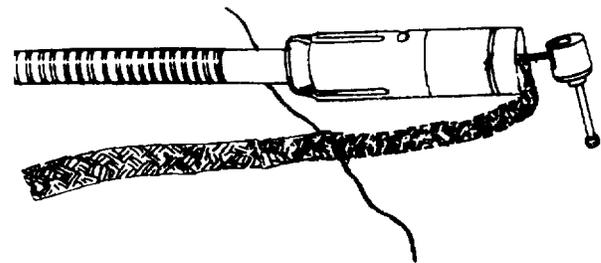


Figure 6. Route a 12-in. Length of Thread

6.2-6138A

b. Route free ends of thread around opposite sides of retainer clip groove (Figure 7).

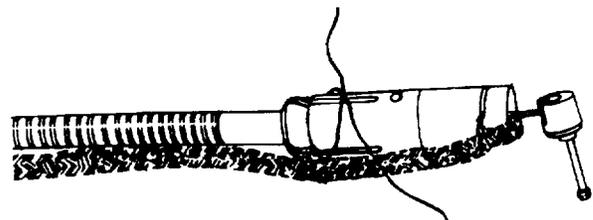
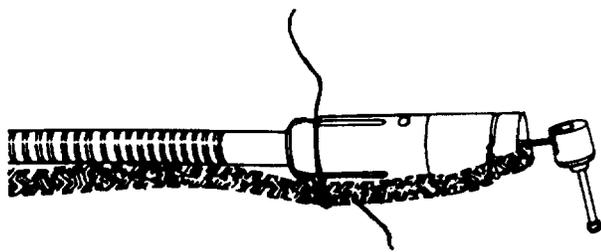


Figure 7. Route Free Ends

6.2-6138B

c. Bring thread ends back around static line pulling the static line snug against the retainer clip (Figure 8).



6.2-6138C

Figure 8. Bring Thread Ends Around Static Line

d. Secure the ends, tie off. Trim excess of 1/2-in (Figure 9).



6.2-6138D

Figure 9. Secure Ends

**15. STATIC LINE TO ARMING CABLE HOUSING TIES REPLACEMENT.**

Materials Required

Specification or Part Number

V-T-295

Nomenclature

Thread, Nylon, Size 3, Type I or II, Class A

**NOTE**

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

a. Completely remove loose tie(s).

**NOTE**

Static line to arming cable housing ties are made at five equally spaced points between ferrule at end of housing to point where housing enters container.

b. Using one turn of size 3 thread, single and waxed, tie static line and housing together. Ties shall be made completely around static line and housing in grooves of housing; tie off (Figure 5).

**16. RELEASE LANYARD LOCKING PIN SAFETY TIE REPLACEMENT.**

Materials Required

Specification or Part Number

V-T-295

Nomenclature

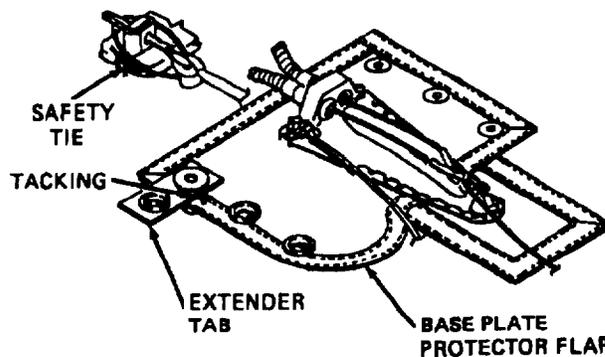
Thread, Nylon, Size FF, Type I or II, Class A

**NOTE**

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

a. Completely remove loose or broken safety tie.

b. Tie locking pin to stud with one turn of size FF thread, single and waxed. Pass thread thru lanyard knot; tie off (Figure 10).



6.2-5668

Figure 10. Replacement of Release Lanyard Locking Pin Safety Tie and Tacking on Baseplate Extender Tab

**17. BASEPLATE EXTENDER TAB TACKING REPLACEMENT.**

Materials Required

Specification or Part Number

V-T-295

Nomenclature

Thread, Nylon, Size FF, Type I or II, Class A

**NOTE**

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

- a. Completely remove loose or broken tacking.
- b. Tack extender tab to baseplate protector flap with one turn of size FF thread, doubled and waxed; tie off (Figure 10).

**18. SPRING ASSEMBLY (CONTAINER OPENING) REPLACEMENT.**

Materials Required

Specification or Part Number	Nomenclature
60A113D11-8	Spring Assembly, Container Opening

- a. Measure length of replacement spring opening assembly. Required length is  $4 \frac{7}{8} \pm \frac{1}{8}$ -in. when measured from end of one hook to end of other hook with no tension applied.
- b. Inspect spring opening assembly for broken spring, contamination, corrosion, cuts, fraying, bent or broken hooks, elasticity and loose or broken stitching.
- c. Remove defective spring assembly.
- d. Attach hook of replacement spring opening assembly opposite end tab to eyelet on container frame with hook facing down. Crimp hook to eyelet.
- e. Attach remaining hook to corresponding eyelet on container end flap.

**19. SURVIVAL KIT.**

**20. ATTACHMENT OF SURVIVAL KIT PARACHUTE RETENTION STRAPS TO PARACHUTE HARNESS STRAP ADAPTERS.**

**NOTE**

Attachment of survival kit to parachute assembly may be accomplished prior to seat installation or after seat installation.

- a. Ensure that RSSK-8 survival kit has been inspected per NAVAIR 13-1-6.3-2.
- b. Attach spring-loaded end fittings on RSSK-8 parachute retention straps to respective adapters on parachute assembly harness strap.

**21. PARACHUTE HARNESS SENSING RELEASE UNIT (PHSRU).**

**22. PHSRU TORQUE SEAL REPLACEMENT.**

Materials Required

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

- a. Torque loose screws to a value of 11 to 13 in-lbs.
- b. Apply torque seal to the plug assembly, sensor plug and electronics package assembly attaching screws (Figure 11).

**23. PHSRU BATTERY AND SENSOR PLUG REPLACEMENT.**

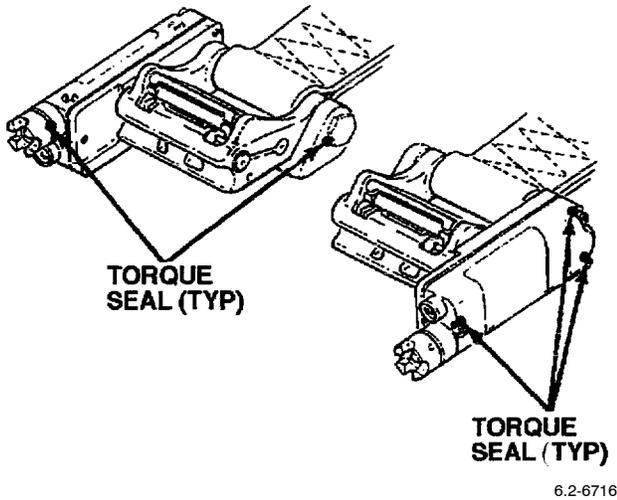
Support Equipment Required

Specification or Part Number	Nomenclature
FLUKE-77	Multimeter
SA852AS112	Torque Driver
SA852AS113	Torque Tool, Sensor Plug
GGG-W-641	Socket Handle, 1/4-in. Drive
3405AS101-2	Socket, Special 7/16 x 1/4-in. Drive

- a. Perform PHSRU Organizational Level Maintenance in accordance with WP 024 02 for the following tasks:

- (1) Removal of battery.
- (2) Installation of battery.
  - (a) Conduct the following:
    - 1) Battery voltage check.
    - 2) Battery polarity check.
    - 3) Battery installation.
    - 4) Final check.

- (3) Removal of sensor plug.
- (4) Installation of sensor plug.
  - (a) Conduct the following:
    - 1) Sensor plug resistance check.
    - 2) Final check.



**Figure 11. Replacement of Torque Seal on PHSRU**

**INTERMEDIATE AND DEPOT MAINTENANCE**

**PACKING PROCEDURES**

**NES-12 PERSONNEL PARACHUTE ASSEMBLY**

**PART NO. 576AS100-37 and 576AS100-38**

**List of Effective Work Package Pages**

<u>Page No.</u>	<u>Chg. No.</u>	<u>Page No.</u>	<u>Chg. No.</u>	<u>Page No.</u>	<u>Chg. No.</u>	<u>Page No.</u>	<u>Chg. No.</u>
1 .....	11	8 .....	11	20 thru 22 .....	11	49 thru 50 .....	11
2 thru 7 .....	9	9 thru 19 .....	9	23 thru 48 .....	9		

**Reference Material**

Cartridge Actuated Devices (CADS) and Propellant Actuated Devices (PADS) (IETM) .....	NAVAIR 11-100-1.1
Intermediate and Depot Maintenance, Common Repair Procedures .....	WP 004 00
Introduction, Organizational, Intermediate and Depot Maintenance with Illustrated Parts Breakdown, Emergency Personnel and Drogue Parachute Systems .....	WP 002 00
Organizational, Intermediate and Depot Maintenance, Illustrated Parts Breakdown, NES-12 Personnel Parachute Assembly .....	WP 019 04
Organizational, Intermediate and Depot Maintenance, Parachute Loft Requirements/Administration .....	WP 003 00
Organizational, Intermediate and Depot Maintenance, Support Equipment .....	WP 005 00

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**Record of Applicable Technical Directives**

<u>Type/No.</u>	<u>Date</u>	<u>Title and ECP No.</u>	<u>Date Inc.</u>	<u>Rescission Date</u>
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None

**1. GENERAL.**

a. 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.

b. 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 Work Package (WP).

c. 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 subsequent steps.

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

**2. PRELIMINARY PROCEDURES.**

Support Equipment Required

Part Number	Nomenclature
711-07076	Altitude Chamber
Refer to WP 005 00	Bodkin
—	C-Clamp (2)
Refer to WP 005 00	Fid
Refer to WP 005 00	Guide Tube
Refer to WP 005 00	Long Bar
Refer to WP 005 00	Packing Hook
Refer to WP 005 00	Pilot Parachute Pin Plate
—	Needle
Refer to WP 005 00	Ripcord Pinlock
—	Rod, Wood or Steel, 3/8-in., Rounded End
DPP-50	Scale, Spring

Part Number	Nomenclature
DPP-100	Scale, Spring
—	Screwdriver, Torque
MS17985C310	Safety Pin
Refer to WP 005 00	Shot Bag (4)
5579245-1	Template, Go-No-Go
Refer to WP 005 00	Temporary Locking Pin (2)
TSQ-050	Torque Meter
ST86-0064-1	Test Fixture

Materials Required

Specification or Part Number	Nomenclature
O-E-760	Alcohol, Denatured
PIA-C-5040	Cord, Nylon Type I or IA
F-900 Torque Seal (Color Optional)	Sealing Compound
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
V-T-295	Thread, Nylon, Size 3, Type I or II, Class A
V-T-295	Thread, Nylon, Size 6, Type I or II, Class A
MIL-R-1832	Rubberband, Retaining, Type I
MIL-S-45180	Sealing Compound Type II

Specification or Part Number	Nomenclature
711-07077	Test Slug (3)
MIL-T-5608	Tape, Nylon, Type II, 3/8-in. Class A

- a. Ensure that all support equipment and materials required are available prior to starting.
- b. Inspect packing tools for nicks, burrs, or shape edges which may cause damage to the parachute assembly.
- c. Count and record number of packing tools.
- d. Clean packing table.

**3. SPREADING GUN SAFETY PIN.**

- a. Ease of operation.
- b. Presence of two locking balls.
- c. Condition of flag and flag stowage strap.

**4. LAYOUT OF RIGGED PARACHUTE ASSEMBLY.**

**WARNING**

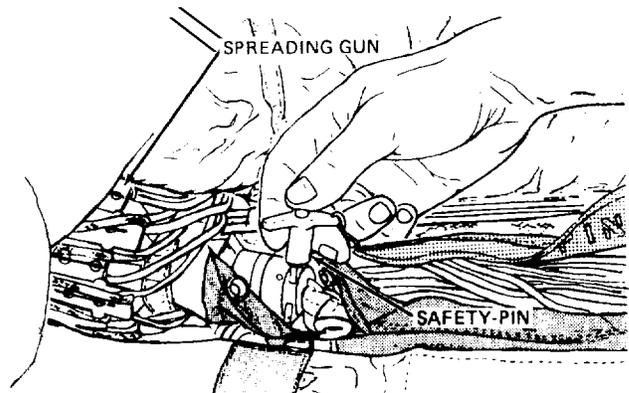
Use extreme caution. This parachute assembly incorporates a ballistic spreading gun.

- a. Check proper operation of spreading gun safety pin by depressing button and ensuring ball bearings on tip of pin depress only while button is engaged. Check condition of flag and flag stowage strap.

**WARNING**

Do not remove folded canopy or suspension lines from container.

- b. Completely open parachute container and detach spring opening assemblies.
- c. Carefully raise folded canopy at top end of container, exposing spreading gun. Open fasteners on extractor sleeve and fully insert safety pin into spreading gun. The safety pin button must be depressed to insert pin (Figure 1). (QA)



**Figure 1. Safety Pin Installation**

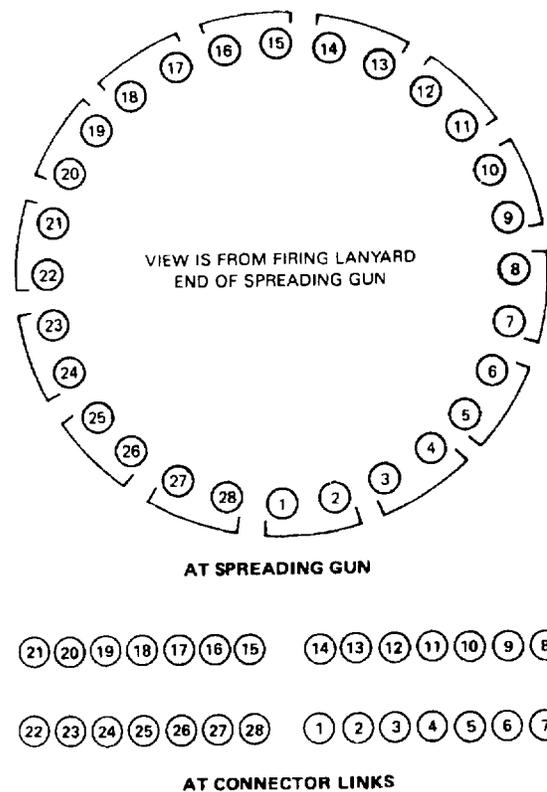
6.2-5520

**WARNING**

Do not remove the spreading gun safety pin at any time during this procedure.

- d. Open extractor sleeve fasteners on each side of spreading gun safety pin.
- e. Release fastener securing stowage sleeve to extractor sleeve.

- f. Remove stowage sleeve from extractor sleeve.
- g. Remove shear link assembly from container external pilot parachute release assembly.
- h. Untie and remove the 36-in. length of nylon tape securing apex of canopy to loop on canopy radial seam.
- i. Remove only folded canopy from container.
- j. Remove yoke and plate assembly from top outboard connector link on helper's side and then remove spreading gun firing lanyard.
- k. Reinstall yoke and plate assembly on top connector link on helper's side.
- l. Remove spreading gun firing lanyard from rubber retaining bands.
- m. Remove connector link ties.
- n. Remove suspension lines from rubber retaining bands and then remove retaining bands from retaining band loops.
- o. Remove external pilot parachute and deployment bag from external pilot parachute pocket on container.
- p. Remove external pilot parachute and lines from deployment bag.
- q. Remove release pin assembly from override disconnect housing.
- r. Remove tackings from ripcord release lanyard and remove from connector links.
- s. Remove risers from riser retaining supports.
- t. Stretch canopy and suspension lines full length on packing table. Rotate spreading gun so lines 14 and 15 are facing up and lines 1 and 28 are on bottom (Figure 2).
- u. Attach tension strap hook to canopy vent lines.
- v. At ballistic spreading gun, 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 dips and twists between the two groups (Figure 2).



6.2-5805

**Figure 2. Arrangement and Orientation of Suspension Lines**

- w. Place connector link holding lines 8 thru 14 on top of connector link holding lines 1 thru 7. Place connector link holding lines 15 thru 21 on top of connector link holding lines 22 thru 28. Insert tension hooks into connector links and into packing table (Figure 2).
- x. Apply slight tension using tension strap.
- y. Pull vent collar toward canopy exposing vent hem.
- z. Adjust vent hem.
- aa. Pull vent collar back to original position.

**5. AUTOMATIC PARACHUTE RIPCORD RELEASE REMOVAL/DISARMING/DISASSEMBLY.**

**WARNING**

Do not pull arming cable from armed release assembly, as this will cause it to fire.

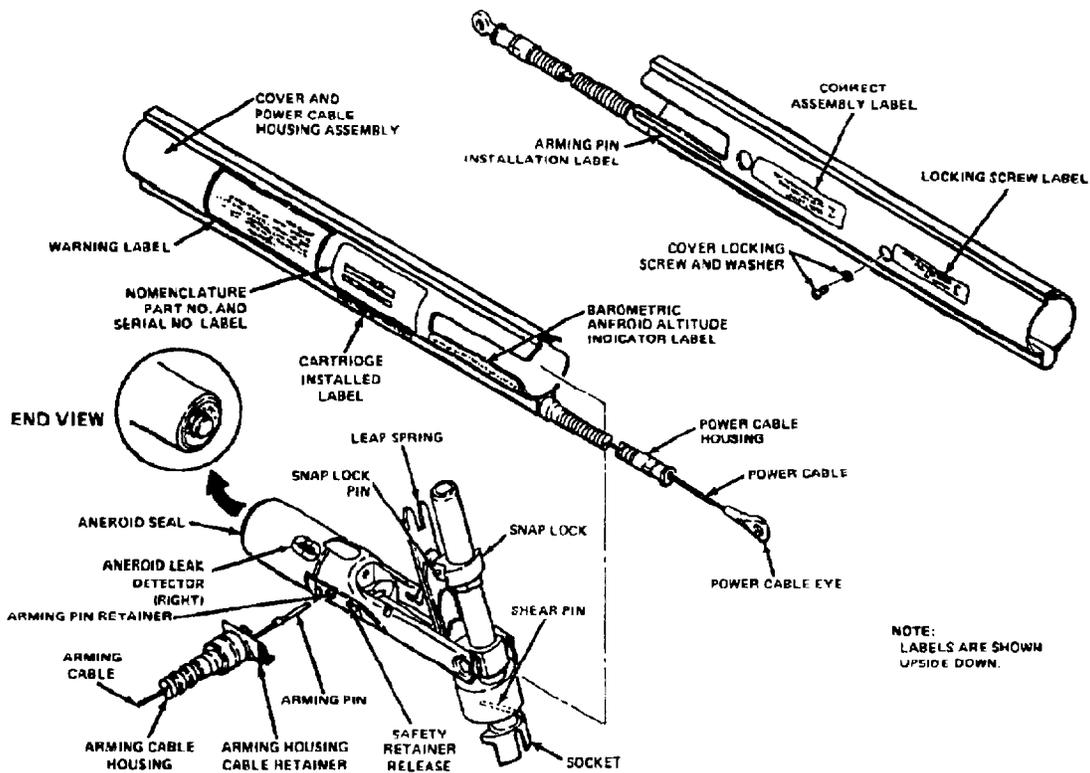


Figure 3. Automatic Parachute Ripcord Release, Model 7000

6.2-5806

a. Open release assembly pocket in parachute container and remove release assembly enough distance to allow disassembly.

g. Ensure that arming cable pin is positively retained by arming pin retainer (Figure 3).

b. Remove cover locking screw and washer (Figure 3).

**NOTE**

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

c. Slide cover off receiver and barrel assembly.

d. Disengage barrel by pushing down on snap-lock; slide back and release (Figure 4).

e. Remove cartridge from barrel at once after barrel is disengaged. Store cartridge per NAVAIR 11-100-1.1. (QA)

f. Remove arming cable housing from receiver and barrel by depressing retainer release. Remove arming cable housing from receiver, leaving arming cable pin installed (Figure 3).

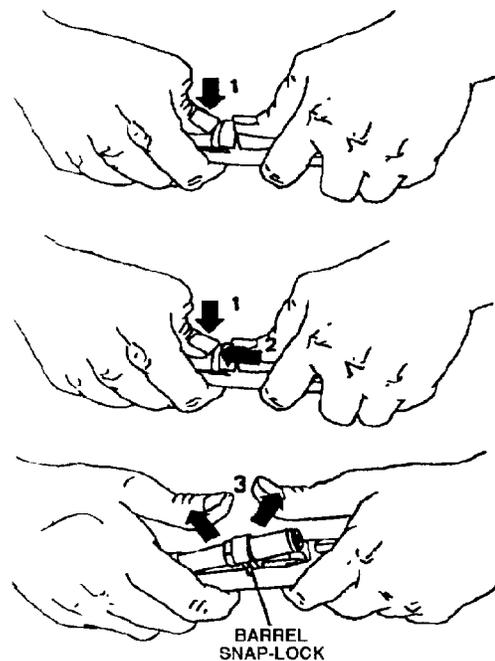


Figure 4. Disarming Ripcord Release

6.2-5362

h. Remove arming cable pin from receiver by grasping arming pin and pulling.

i. Remove arming cable and clip from arming cable housing.

j. Remove lanyard assembly from lanyard stowage channel and pocket.

**6. SPREADING GUN CARTRIDGE REMOVAL.**

**WARNING**

The spreading gun employs an explosive cartridge. Failure to observe procedures in this paragraph could result in serious injury. Safety pin must be installed in spreading gun.

**NOTE**

Use only special tools furnished for cartridge removal. A helper will assist the person doing the cartridge removal. A firing pin pull force check shall be made each time the parachute assembly is packed.

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

**CAUTION**

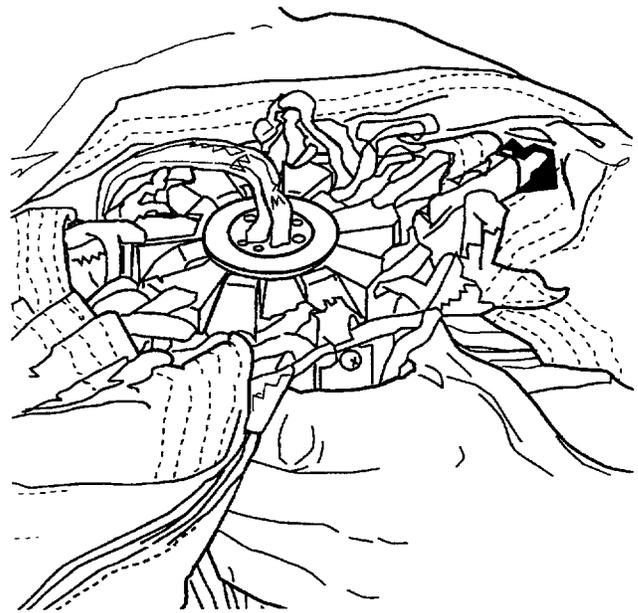
Cartridge extractor wrench surface must mate with cartridge. Resurface wrench if required.

b. Helper will place spreading gun on packing table, with cartridge opening in upright position and hold (Figure 5).

c. Packer will place pins of cartridge extractor wrench in holes in cartridge. Loosen cartridge (Figure 6).

**NOTE**

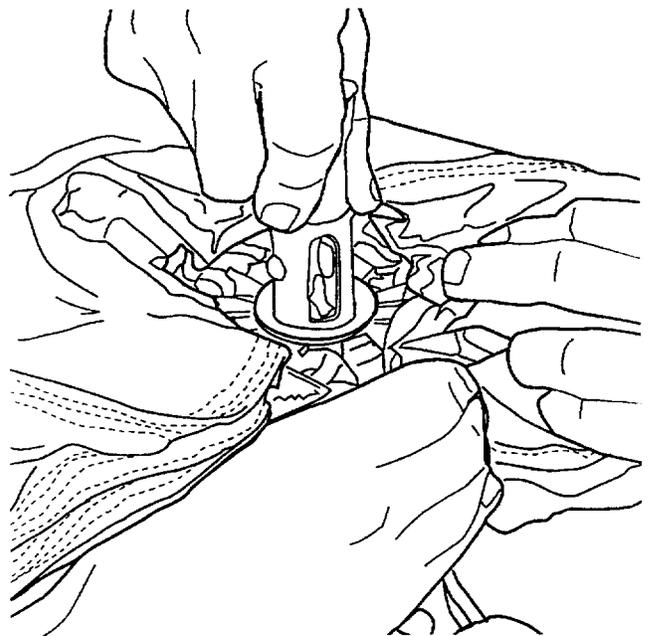
Ensure that proper malfunction description code is recorded. If difficulty occurs in removal of cartridge using extractor wrench furnished with test fixture, request assistance of explosive ordnance disposal (EOD) personnel.



6.2-5922A

**Figure 5. Positioning of Spreading Gun**

d. Manually unscrew and remove cartridge from chamber (Figure 6).



6.2-5923A

**Figure 6. Removal of Spreading Gun Cartridge**

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

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

**7. INSPECTION (SPECIAL).**

a. Maximum scheduled repack cycle is 1232 days.

**8. 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. Spreading gun retainer cord is changed with the spreading gun.

h. 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, Impulse MF-78	Refer to NAVAIR 11-100-1.1	
Cartridge M282 (TA-4)	Refer to NAVAIR 11-100-1.1	
Cartridge MF-37 (S-3)	Refer to NAVAIR 11-100-1.1	
Cartridge MW19	Refer to NAVAIR 11-100-1.1	
Cross-Connector Strap	(See Note 1)	(See Note 1)
Deployment Bag	None	15
Electronics Package Assembly	None	8
External Tristage Pilot Parachute	None	13
Internal Bridle Assembly	None	None
Pilot Parachute		15
Riser Assembly	None	15
Spreading Gun	None	11 1/2

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 WP 019 04 Illustrated Parts Breakdown.

**9. AUTOMATIC PARACHUTE RIPCORDER RELEASE.**

**NOTE**

Do not mismatch cover and power cable housing assembly and barrel and receiver assembly.

a. Serial numbers on the cover and power cable housing and receiver and barrel assembly for matched numbers. (QA)

b. Receiver and barrel assembly for nicks, cracks, gouges, distortion, corrosion, or other damage which could cause malfunction in-service.

c. Decals and labels for legibility and security of attachment.

d. Cover and power cable housing for nicks, gouges, distortion, corrosion, and security of power cable housing.

e. Power cable for freedom of movement and secure attachment of swaged ball and power cable eye (Figure 7).

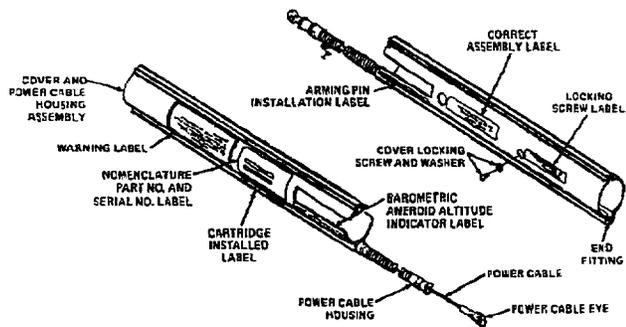


Figure 7. Attachment of Swaged Ball and Power Cable Eye

6.2-1119

f. Arming cable for kinks, broken strands, corrosion, and security of arming pin and sqaged ball.

g. End fitting for distortion, corrosion, cracks, breaks, and security of attachment.

h. Arming cable clip retainer and retainer pin for distortion, corrosion, and other damage.

i. Arming cable housing for bends, retention or end furrel, retention of housing retainer.

j. Aneroid for evidence of expansion and correct indication.

k. Ensure proper retention of arming pin retainer by inserting arming pin in retainer while barrel is unlocked. Press pin into place firmly until locked into pin groove. Pin should now be held securely.

l. Manually pull arming cable pin from retainer, ensuring that pin was properly secured. (QA)

m. Sealing compound on aneroid; seal must be intact. Cracks due to normal aging of seal material are acceptable (Figure 8).

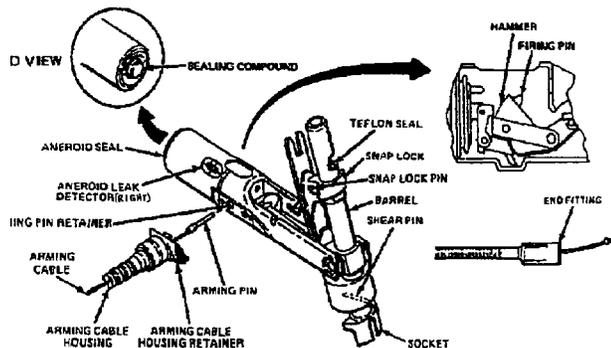


Figure 8. Sealing Compound Check

6.2-1114



Do not twist socket, as this will break shear pin.

n. Socket for visible damage and retention of socket and piston by shear pin.

o. Snap-lock pin for security and damage.

p. Teflon seal (inside of barrel) for placement.

q. Firing pin for flattening, gouges, and other damage.

r. Leaf springs on receiver and barrel assembly for damage; leaf spring retaining screw for condition and presence of torque seal (Figure 9).

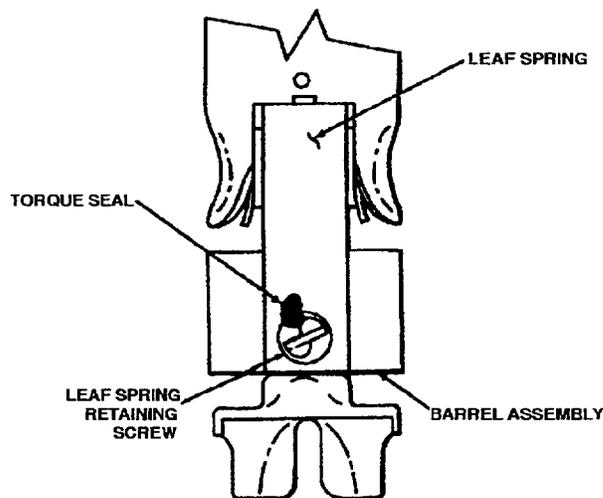


Figure 9. Presence of Torque Seal

6.2-1115

**10. RIPCORD RELEASE FIRING ALTITUDE CHECK.**

a. Install test chamber substitute arming pin in ripcord release.



Do not release firing mechanism without test slug installed, as this will distort the firewall.

b. Install test slug.



At no time will a tool or other device be used to open or close the ripcord release.

c. Press barrel down into position in receiver, ensure snap-lock pins lock barrel in position.

d. Perform firing altitude check:

**NOTE**

The ripcord release firing check must simulate firing at between 13,000 and 15,000 ft.

- (1) Install barrel and receiver in test chamber. (QA)
- (2) Set altimeter to 29.92 in. Hg. (QA)
- (3) Evacuate chamber to a minimum of 25, 000 ft. pressure altitude. (QA)
- (4) Decrease altitude at a rate of 175 to 200 ft./sec. (QA)
- (5) Actuate arm toggle to withdraw arming pin at approximately 20,000 ft. pressure altitude. (QA)
- (6) Verify altitude at which ripcord release firing pin strikes test slug. (QA)
- (7) Remove test slug from barrel; check primer for indent; indent must be present and centered. (QA)

**CAUTION**

Test slug must be removed from barrel after each use.

- (8) Repeat firing altitude check two additional times; using a new test slug each time; the ripcord release must pass all three firing altitude checks. (QA)
- (9) Discard test slugs. (QA)
- (10) Remove ripcord release from altitude chamber. (QA)

**11. RIPCORD RELEASE END FITTING REMOVAL TEST.**

**NOTE**

The arming cable and housing shall be removed from the automatic parachute ripcord release assembly.

a. Helper shall hold arming cable housing steady on packing table.

b. Attach gage to the swaged ball using Type I or IA nylon cord.

c. Using a straight steady pull, observe amount of pull required to remove end fitting from arming cable housing. Allowable force is 17 lbs. ± 3 lbs. (QA)

**12. SPREADING GUN.**

**WARNING**

Safety pin must be installed. Do not twist or pull on firing lanyard.

- a. Extractor sleeve for contamination, fraying, loose or broken stitching, security and condition of fasteners, and security of attachment.
- b. Decals and labels for presence and legibility.
- c. Firing lanyard and stowage sleeve for contamination, twists, cuts, burns, fraying, security of attachment and condition of fasteners.
- d. Spreading gun for corrosion, slugs properly held by shear band assembly, security of plates, condition of unbroken lock seal, and plate screws for presence and condition of torque seal.
- e. Firing pin housing for security. Grasp around housing slug/plates with left hand. With right hand grasp safety pin and top of firing mechanism. In counterclockwise direction try to rotate firing mechanism. Any rotation of the firing mechanism is cause for rejection.
- f. Retaining cord for proper attachment to the apex lines and cartridge. (QA)
- g. Firing lanyard for proper stowage in stowage sleeve channels and presence of tacking (Figure 10). (QA)

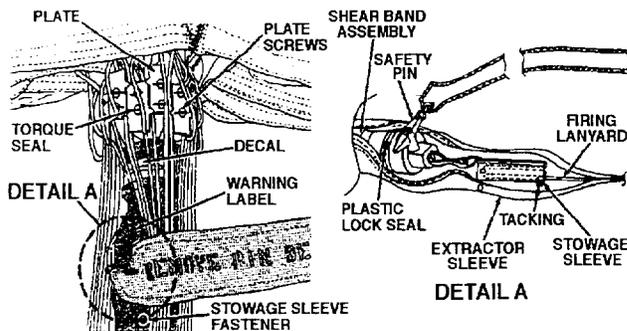


Figure 10. Firing Lanyard Stowage

**13. SUSPENSION LINE CONTINUITY.**

- a. Ensure spreading gun with suspension lines 14 and 15 are facing up.
- b. Lines to connector links and spreading gun for correct sequencing.
- c. Suspension lines shall pass thru corresponding numbered slots in spreading gun slugs. Ensure that loops attached to odd-numbered suspension lines pass thru slots in odd-numbered slugs. (QA)
- d. Suspension lines shall run free from skirt hem thru corresponding numbered slots in spreading gun slugs to connector links without dips or twists (Figure 11). (QA)

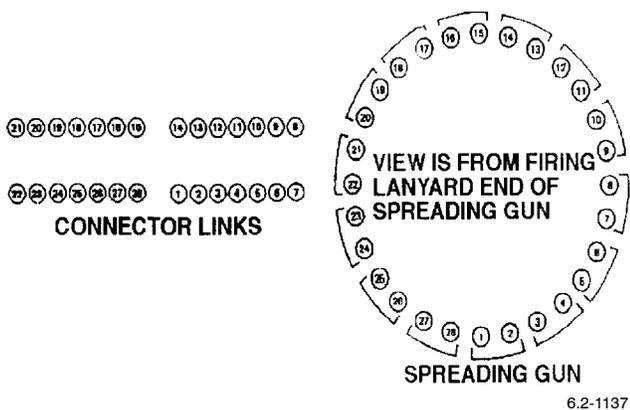


Figure 11. Suspension Lines in Numbered Slots

**14. CANOPY ASSEMBLY.**

- a. Canopy skirt hem, fabric surface, diagonal seams, radical seams, vent hem, water deflation pockets, for cuts, holes, ruptures, contamination, deterioration, and loose or broken stitching.
- b. Loop (18 lb. tape attachment) for condition and proper attachment to line 15 on radial seam.

**NOTE**

Loop may be located on line 14 radial seam in previously manufactured canopies and is acceptable.

- c. Suspension lines and canopy apex lines for fraying, ruptures, protruding inner core lines, burns, contamination, and presence of twists.
- d. Lines and spreading gun anchor loops for security of attachment to skirt hem.

- e. Attachment of four-line release anchor loops to suspension lines 3 and 26.
- f. Attachment of four-line release lanyards to anchor loops on suspension lines 3 and 26.
- g. Activate the four-line release and retacking WP 004 00. (QA)

**NOTE**

For Double “L” Connector Link, refer to WP 019 03 for disassembly, assembly, and inspection instructions.

- h. Connector links for corrosion, distortion, nicks, burrs, sharp edges, and cracks.
- 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 screwheads facing outboard (Figure 12). (QA)

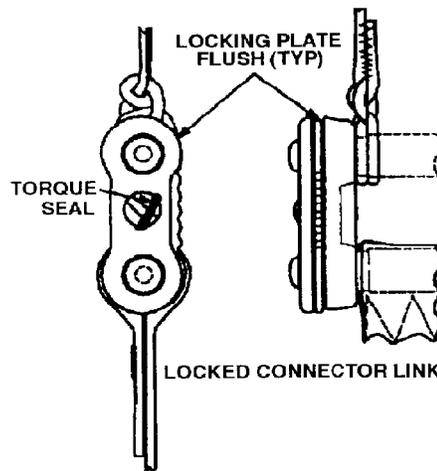


Figure 12. Torque Seal Unbroken

**15. PILOT PARACHUTE AND INTERNAL BRIDLE ASSEMBLY.**

- a. Pilot parachute:
  - (1) Fabric surfaces and seams for cuts, tears, fraying, and loose or broken stitching.
  - (2) Seam area at crown for seam separation.
  - (3) Spring assembly for distortion.
  - (4) Loose or broken tackings (4 places each) at bottom of the coil spring.

(5) Locking cone and grommet for condition, and security of attachment.

b. Internal bridle assembly:

(1) Webbing for cuts, fraying, and loose or broken stitching.

(2) Proper attachment to apex lines and pilot parachute loop.

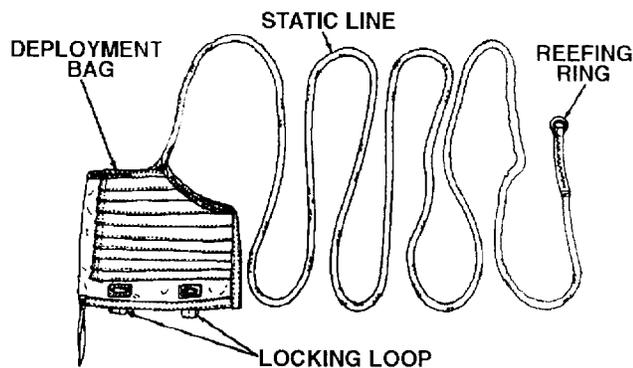
(3) Proper attachment of housing to bridle line.

**16. EXTERNAL PILOT CHUTE (EPC) DEPLOYMENT BAG.**

a. Reefing ring for corrosion, distortion, breaks, and security of attachment to static line.

b. Static line for contamination, cuts, tears, fraying, loose or missing stitching, and security of attachment to the bag.

c. Deployment bag and locking loops for contamination, cuts, tears, fraying, and loose or missing stitching (Figure 13).



**Figure 13. Deployment Bag**

6.2-1129

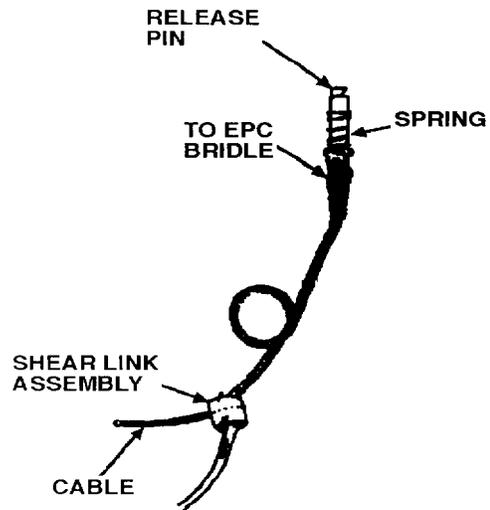
**17. EXTERNAL TRISTAGE PILOT PARACHUTE.**

a. Fabric surface, seams, suspension lines, center line, and lanyards for contamination, cuts, tears, fraying, and loose or broken stitching.

b. Suspension lines, center line, and lanyards for security of attachment.

c. Shear link assembly and cable for fraying, broken strands, loose swage ball, and security of attachment.

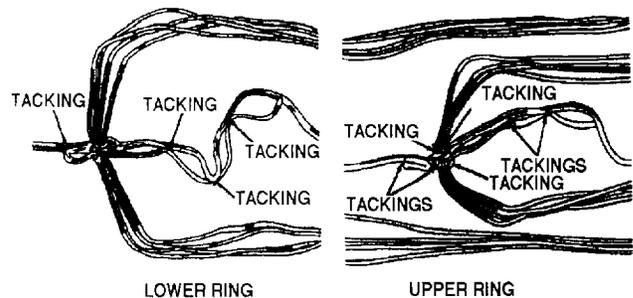
d. Release pin for dents, cracks, nicks, burrs, and broken or deformed spring (Figure 14).



**Figure 14. Release Pin**

6.2-1130

e. Presence and condition of all tackings (Figure 15).



**Figure 15. Condition of Tackings**

6.2-1131

**18. EPC RELEASE ASSEMBLY.**

a. Pull bottom parachute container flap back.

b. Open slide fastener that connects inside panel to expose EPC release assembly.

c. Remove nuts, washers, and screws (4) that secures EPC release assembly to container. Retain attaching hardware.

d. Remove EPC release assembly from container, and inspect outside for dirt or cracks.

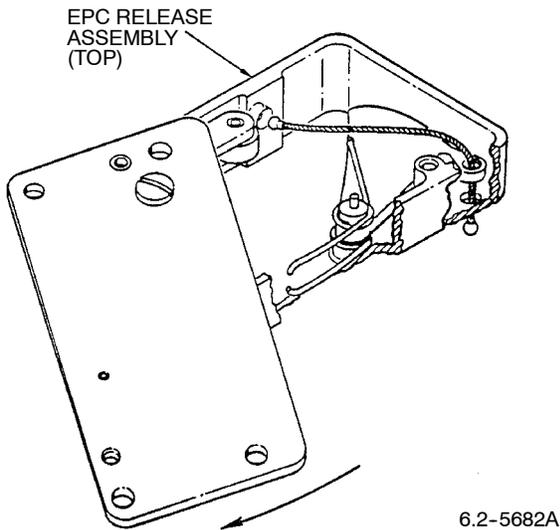
**NOTE**

If EPC release is unserviceable, scrap.

e. Remove Phillips-head screws (2) from EPC release assembly.

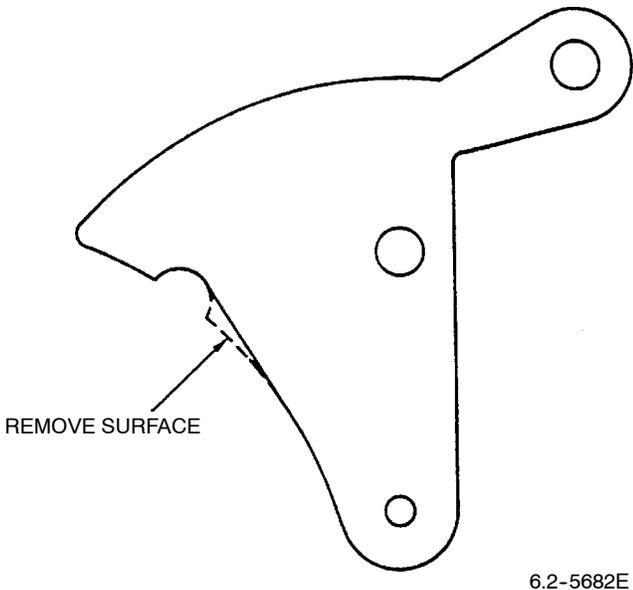
f. Remove tamper dot. Loosen the roundhead screw (1) approximately 1 1/2 turns. Do not remove screw.

g. Pivot EPC release assembly cover clockwise to expose internal components (Figure 16).

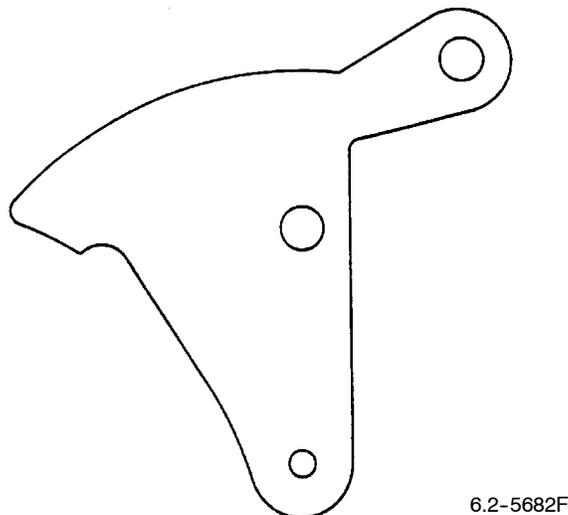


**Figure 16. Open EPC Release Assembly Cover**

h. Inspect cam assembly to ensure that front spring indent surface has been removed (Figures 17 and 18).

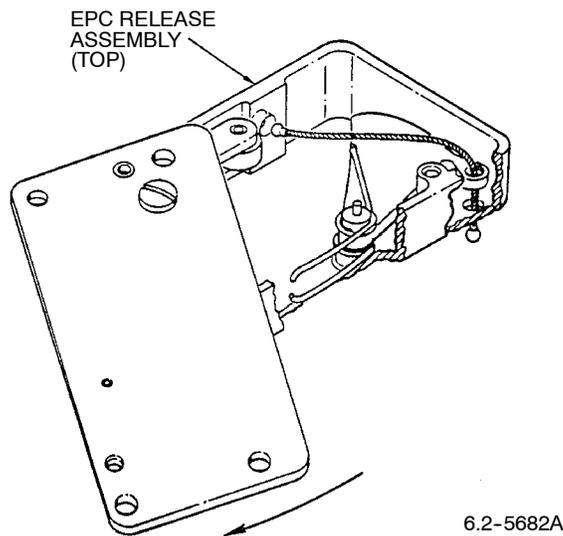


**Figure 17. Cam Not Modified**



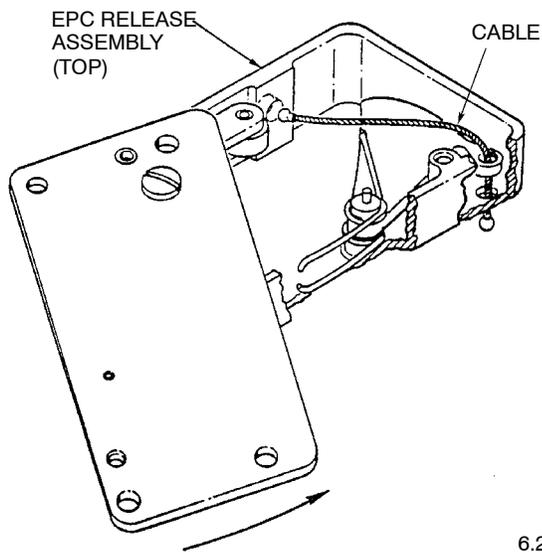
**Figure 18. Modified Cam**

i. Inspect EPC release mechanism cable for correct installation. The cable with large ball should enter from the rear of cam assembly, pass over the cam, and exit through top hole of EPC release assembly (Figure 19).



**Figure 19. Cable Installation**

j. Pivot EPC release assembly cover counter clockwise to closed position (Figure 20).



6.2-56821

**Figure 20. Close EPC Release Assembly**

k. Install Phillips-head screws (2) in the EPC release assembly, and tighten.

l. Tighten round head screw (1). Torque to  $8 \pm 1$  in-lb. (QA)

m. Apply torque seal to round-head screw.

n. Ensure part number 510AS129-2 is stamped on top portion of EPC release assembly.

o. Install nuts, washers and screws (4) to secure EPC release assembly to container.

p. Close slide fastener which connects inside panel.

**19. RISERS AND CROSS-CONNECTOR STRAPS.**

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

b. Four-line release lanyard flute and ripcord flute for wear and security of 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. Shoulder harness roller fittings for corrosion, damage, and security of attachment.

f. Ripcord grip retainer cover for condition and security of attachment.

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

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

i. Riser protection sheath for cuts, contamination, excessive wear, abrasions, and loose or broken stitching.

j. Riser protection sheath snaps for security of attachment, ease of use, and corrosion.

**20. RIPCORD ASSEMBLY.**

a. Cable for corrosion, bends, broken strands, and security of swaged terminal ball.

b. Locking pins for bends, dents, cracks, corrosion, security of attachment to cable.

c. Ripcord grip for dents, cracks, and corrosion.

d. Housing for corrosion, bends, dents, loose ferrules, breaks, cracks, and security of attachment.

**21. CONTAINER.**

a. Grommets, cones, cracks, corrosion, nicks, gouges, and snap fasteners for security of attachment.

b. Slide fasteners for condition and proper operation.

c. Fabric areas, release lanyard, and retaining loops for seam separations, loose or broken stitching, cuts, tears, contamination, and deterioration.

d. Presence and condition of warning labels.

e. Hardware for corrosion, bends, dents, nicks, sharp edges, and security of attachment.

f. External pilot parachute pocket locking loop and stowage channel for condition and proper attachment.

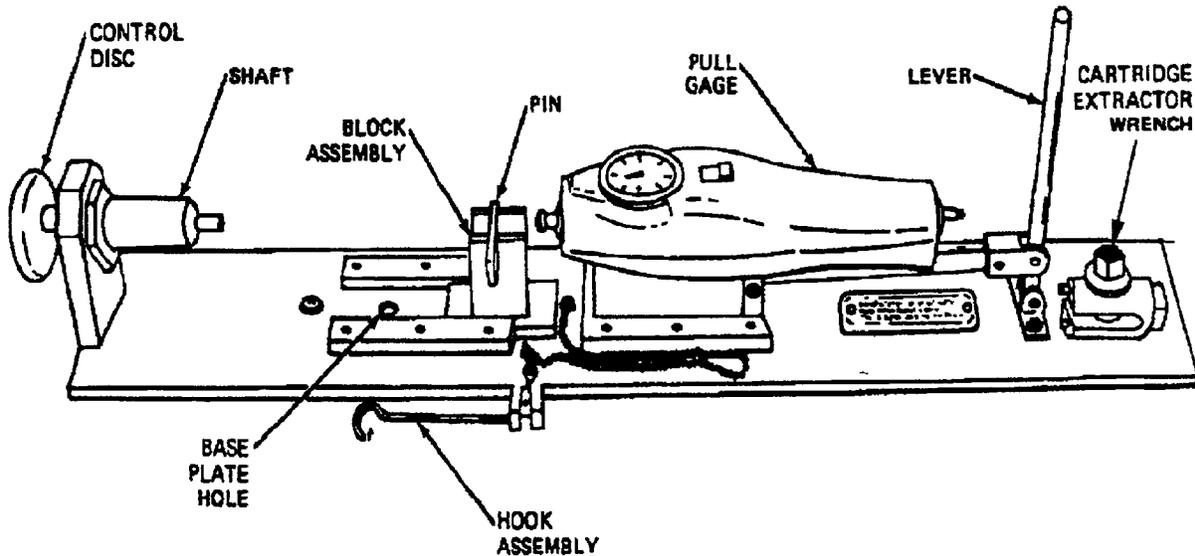
g. Spring opening assemblies for broken springs, contamination, corrosion, cuts, fraying, bent or broken hooks, elasticity, and loose or broken stitching.

h. Spring opening eyes (12) for security of attachment.

**22. PACKING.**

**23. PULL FORCE CHECK AND SPREADING GUN CARTRIDGE INSTALLATION.**

a. Clamp spreading gun test fixture (Figure 21) to packing table. Use one C-clamp positioned as closely as possible to clamp assembly.



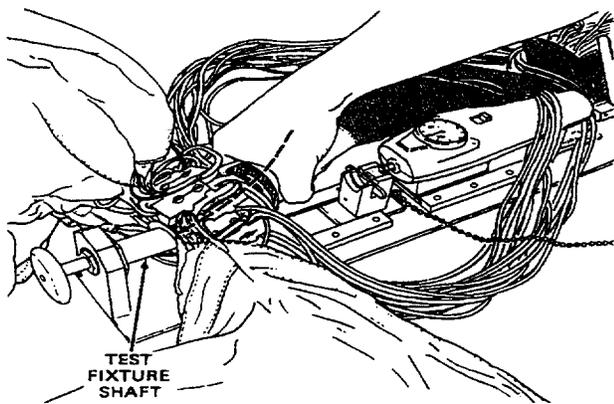
6.2-5476A

Figure 21. Spreading Gun Test Fixture

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

c. Remove safety pin from spreading gun.

d. Slide spreading gun onto test fixture so that shaft butts against bottom of cartridge chamber (Figure 22).

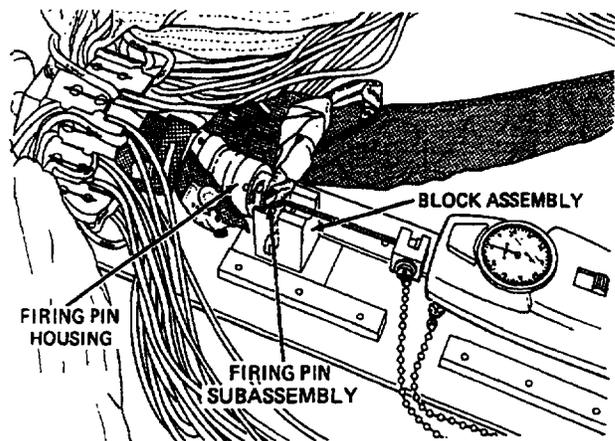


6.2-1499

Figure 22. Installation of Spreading Gun on Test Fixture

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

f. Slide block assembly at center of test fixture under firing pin housing until block assembly pin slides into base plate hole. Align firing pin subassembly so that eye is horizontal and firing lanyard is located on top (Figure 23).



6.2-1500

Figure 23. Alignment of Spreading Gun in Test Fixture

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

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

**CAUTION**

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

i. Pull test fixture lever until firing pin subassembly releases. Verify pull force is  $32 \pm 6$  in-lbs. If spreading gun fails first test it shall be tested twice more. Spreading gun must pass both retests. (QA)

**NOTE**

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

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

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

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

m. Install safety pin in spreading gun. Remove spreading gun from test fixture as follows:

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

(2) Remove spreading gun from test fixture. Do not remove gun by pulling on firing lanyard.

(3) Remove test fixture from packing table.

**NOTE**

Putting finger into cartridge chamber to check for a protruding firing pin after cocking is another check for an uncocked gun.

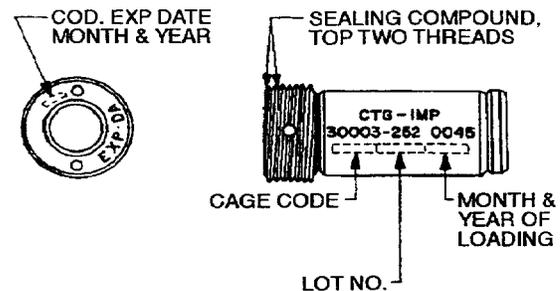
**CAUTION**

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

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

o. Enter Cartridge part number, Department of Defense Identification Code, lot number, container open date, service life expiration date and serial number on Parachute Record (OPNAV 4790/101). (QA)

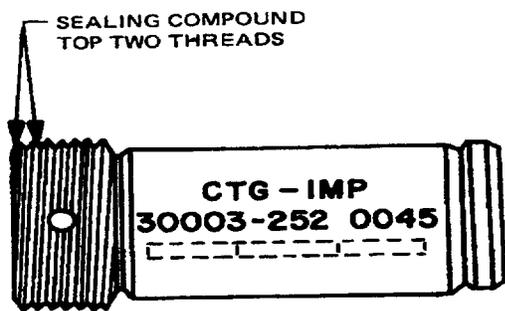
p. Spreading gun cartridge. Mark in black ink, with characters no smaller than 1/16-in. and as large as practical, the CAGE Code, lot number, and month and year of can open/installation, on side of cartridge. On cartridge head, mark month and year of can open/installation, and service life expiration date (Figure 24).



6.2-5512

Figure 24. Spreading Gun Cartridge Marking

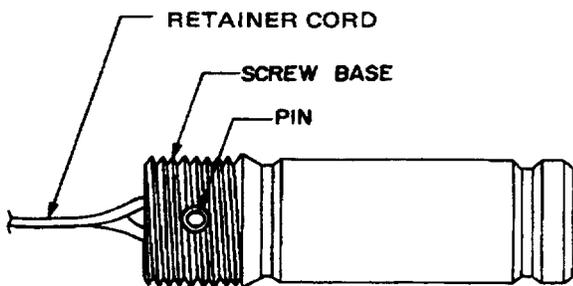
q. Apply MIL-S-45180 Type II sealing compound to top two threads of cartridge (Figure 25).



6.2-5526

Figure 25. Spreading Gun Cartridge Installation

r. Ensure there are no knots in retaining cord. Attach cartridge to retainer cord by passing pin thru screw base of cartridge and loop in end of retainer cord (Figure 26).



6.2-5498

Figure 26. Attachment of Retainer Cord to Cartridge

s. Helper will place spreading gun on packing table, with cartridge opening upright position and hold (Figure 5).

**WARNING**

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

**NOTE**

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

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

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

u. Place pins of cartridge extractor wrench into holes in cartridge and torque to a value of  $84 \pm 12$  in-lbs. (Figure 6). (QA)

**24. STRAIGHTENING OF CANOPY GORES.**

**WARNING**

Ensure that safety pin is installed in spreading gun and spreading gun firing lanyard is detached from connector link.

**NOTE**

Ensure attachment loop sewn to radial seam of line 15 is uppermost when canopy is folded.

Loop may be located on line 14 radial seam in previously manufactured canopies and is acceptable.

a. Arrange canopy on packing table with folded cores 15 thru 28 on packer's side and folded gores 1 thru 14 on helper's side. Ensure attachment loop is located on top uppermost radial seam of folded canopy (Figure 27).

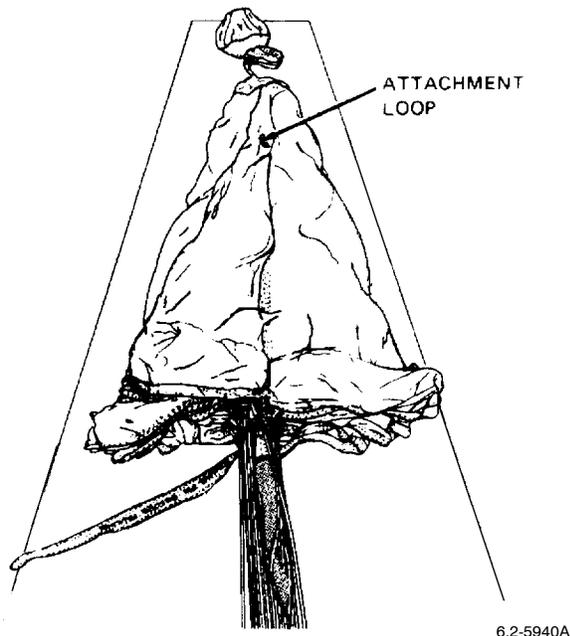


Figure 27. Arrangement of Canopy

b. Helper shall place a shot bag on helper's side of skirt hem (Figure 28).

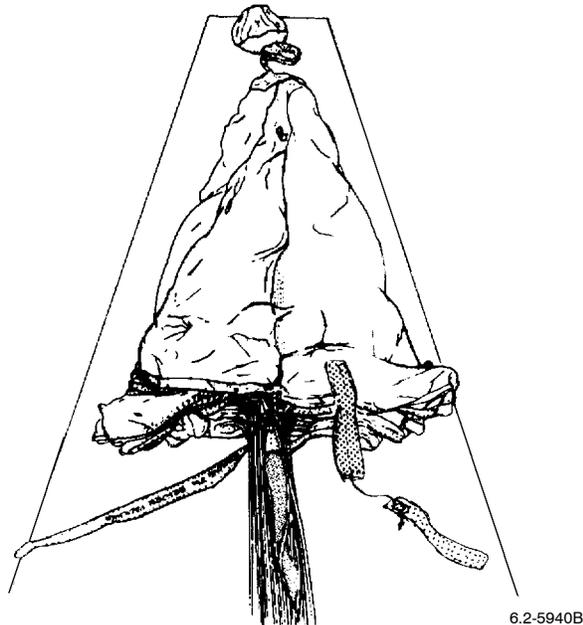


Figure 28. Placement of Shot Bag on Helper's Side

c. Packer shall rotate all gores on packer's side as a group, except bottom gore, over to helper's side of packing table. Packer shall straighten and smooth bottom gore on packer's side of table, throughout its length to apex (Figure 29).

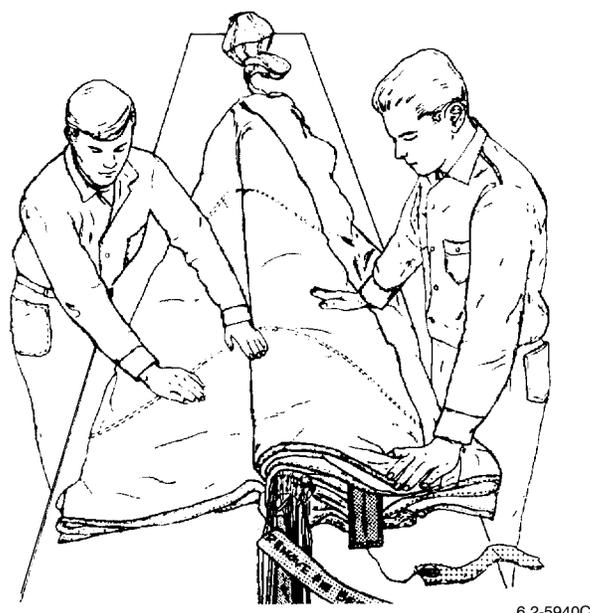


Figure 29. Packer Shall Rotate All Gores on Packer's Side

d. Packer shall return gores above shot bag on helper's side of packing table to packer's side one at a time. Each fold shall be straightened and smoothed (Figure 30).

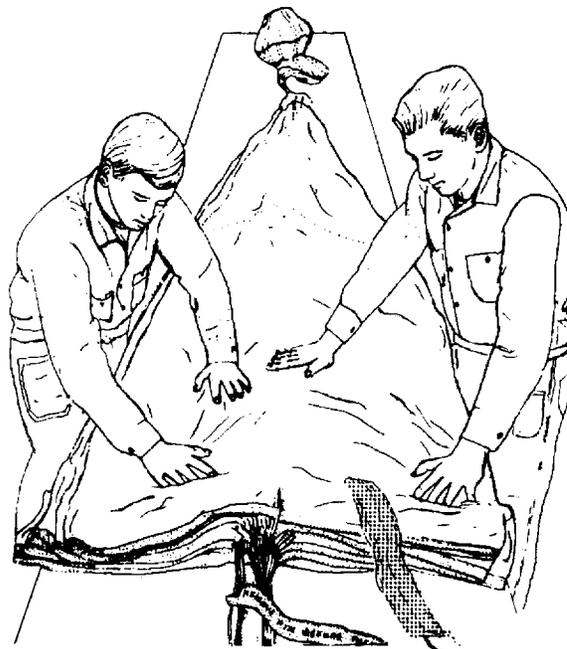
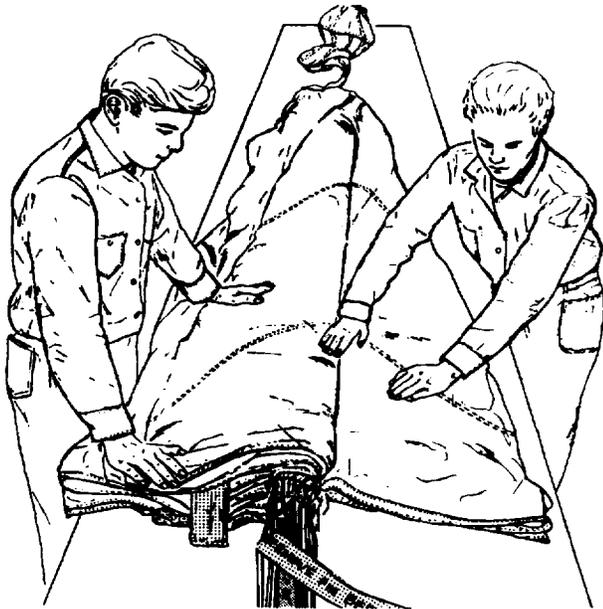


Figure 30. Packer Shall Return Gores Above Shot Bag on Helper's Side

e. Helper shall remove shot bag from canopy and place it on skirt hem of packer's side.

f. Helper shall rotate all gores on helper's side as a group; except bottom gore over to packer's side of packing table. Helper shall straighten and smooth gore on helper's side of table, throughout its length to apex (Figure 31).

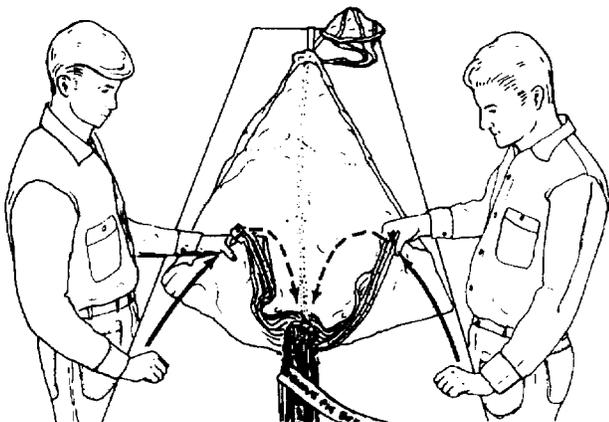


6.2-6144A

**Figure 31. Helper Shall Rotate All Gores on Helper's Side**

g. Helper shall return gores above shot bag on packer's side of table to helper's side one at a time. Each fold shall be straightened and smoothed. Remove shot bag on packer's side.

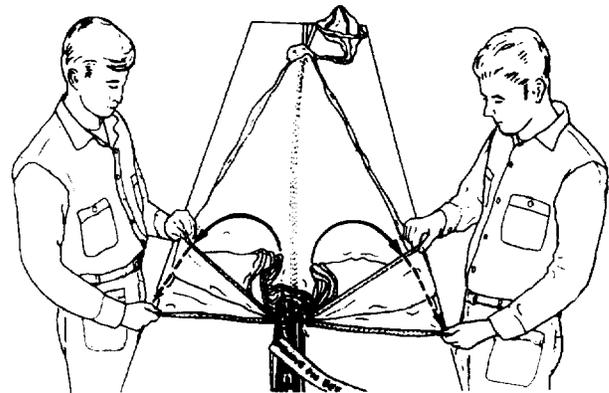
h. Packer and helper shall grasp skirt hem at mid-sections of gores and rotate toward suspension lines (Figure 32).



6.2-6144B

**Figure 32. Packer and Helper Shall Grasp Skirt Hem and Rotate to Center**

i. Each fold shall be aligned and counted when placed back onto table (Figure 33).



6.2-6144C

**Figure 33. Each Fold Shall Be Aligned and Counted**

j. Each group of folds on left and right of spreading gun shall contain 14 gores.

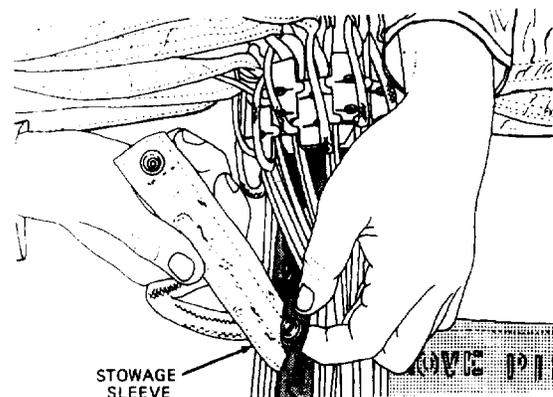
**25. STOWAGE OF STOWAGE SLEEVE IN EXTRACTOR SLEEVE.**

**WARNING**

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

a. Ensure 1/2-in. tapes are not twisted around firing lanyard.

b. Insert stowage sleeve into extractor sleeve open end first (Figure 34).



6.2-5431A

**Figure 34. Insert Stowage Sleeve Into Extractor Sleeve**

c. Engage fastener on stowage sleeve to fastener on extractor sleeve. Engage extractor sleeve fasteners on each side of safety pin. Pull extractor sleeve straight and gently pull slack from firing lanyard (Figure 35). (QA)

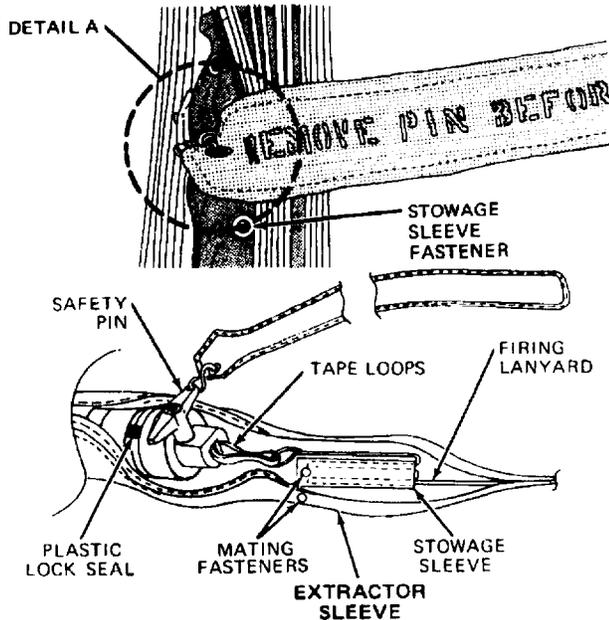


Figure 35. Engage Fastener on Stowage Sleeve

26. PREPARATION OF CONTAINER FOR PACKING.

a. Rotate risers over suspension lines. Position container on packing table so that bottom end is toward canopy and inside faces up.

**CAUTION**

Do not use old retaining bands. New bands shall be used each time assembly is packed.

b. Install new suspension line retaining bands (using Lark's head knot) on eight inboard retaining band loops located on helper's side of packing table, and on eight inboard retaining loops located on packer's side of table (Figure 36).

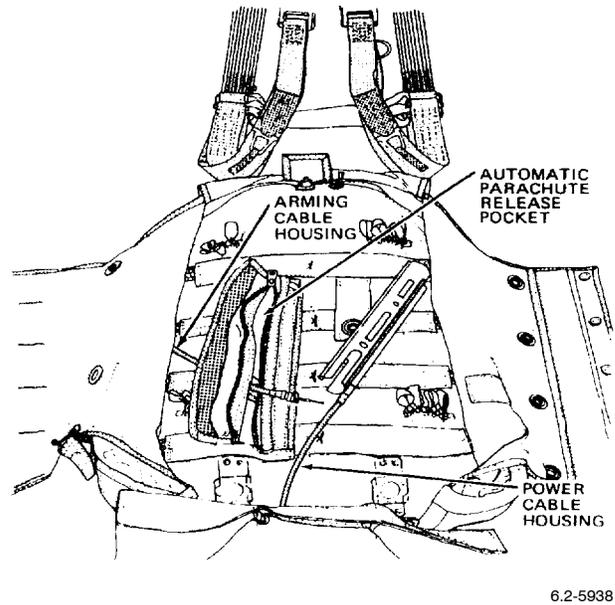


Figure 36. Preparation of Container

27. AUTOMATIC PARACHUTE RIPCORD RELEASE ASSEMBLY AND ARMING.

NOTE

Right side of release assembly contains the aneroid leak detector.

**WARNING**

Ripcord release with proper altitude setting, time delay cartridge, arming cable housing, and arming cable must be used.

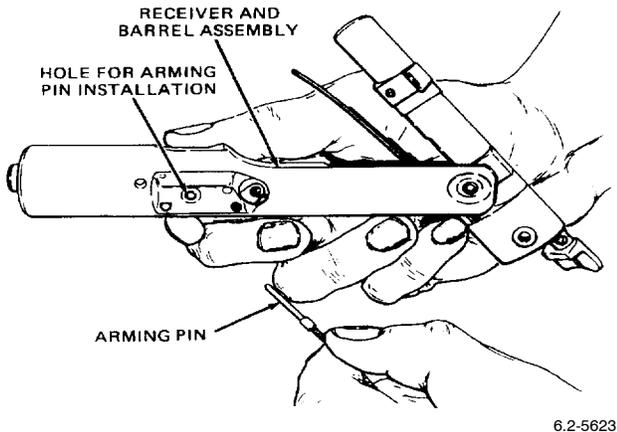
a. Ensure ripcord release has proper altitude setting, arming cable housing, and arming cable. (QA)

b. Ensure arming cable housing is routed through hole in left side of release pocket and button hole in left side of container.

c. Insert arming cable into cable housing.

d. Attach clip retainer to cable housing.

e. With receiver and barrel assembly in the open position, install arming pin release assembly by inserting and locking (arming pin is fully seated when an audible click is heard) the arming pin into the arming pin retainer, ensuring the arming cable housing exits out the left side of container (Figure 37). (QA)



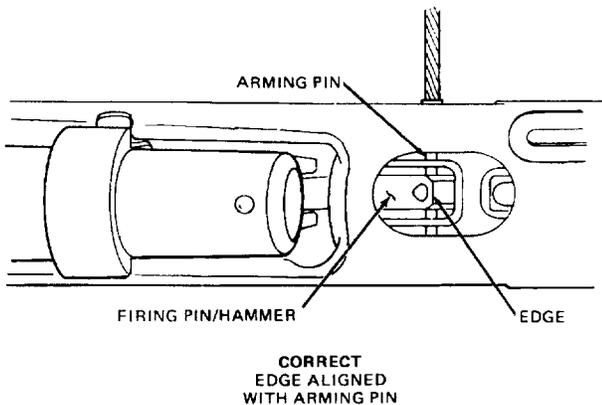
6.2-5623

Figure 37. Installation of Arming Pin

**WARNING**

To ensure proper penetration of cartridge primer, firing pin/hammer assembly must be completely retracted. If edge where curved surface meets flat surface of the hammer assembly is not aligned directly above arming pin, release assembly is not properly armed.

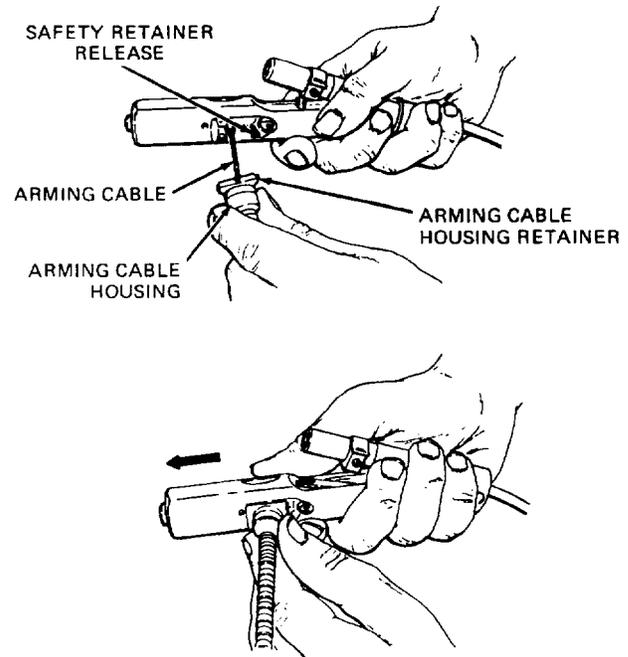
f. Ensure that firing pin/hammer assembly is completely retracted. The firing pin/hammer is completely retracted if top edge of hammer is aligned above arming pin (Figure 38). (QA)



6.2-5370B

Figure 38. Verification of Firing Pin Hammer Retraction

g. Connect arming cable housing retainer to receiver and barrel assembly. Ensure that safety retainer secures housing to receiver (Figure 39).



6.2-5624

Figure 39. Attachment of Arming Cable

**WARNING**

Complete arming and installation is mandatory from this point as a safety measure.

h. Enter cartridge time delay, part number, type, expiration date, and load lot number on Parachute Record (OPNAV 4790/101). (QA)

**WARNING**

Before installing delay cartridge in automatic parachute release, be sure that arming pin has been inserted thru both the hammer and lock.

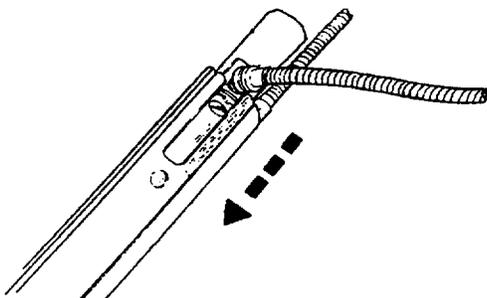
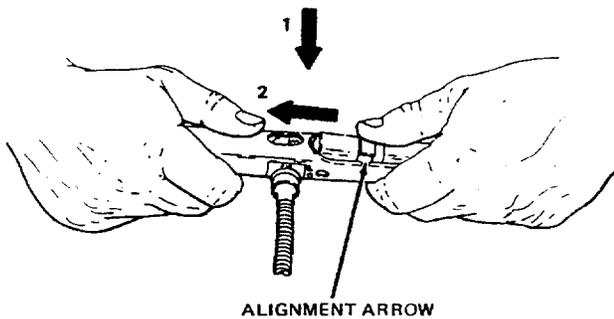
i. Insert correct cartridge in barrel. Refer to WP 019 04. (QA)

**WARNING**

If arming pin is improperly installed, cartridge will fire while locking barrel.

j. While pressing barrel down, look thru inspection hole in receiver and ensure that hammer assembly does not swing toward firewall. If hammer swings, arming pin is improperly installed. Do not attempt to assembly release assembly further, as this could discharge the cartridge. Disassembly improperly armed release assembly and rearm.

k. Press barrel down into position in receiver. As barrel reaches proper position, exert forward pressure on snap-lock, causing snap-lock pins to lock barrel in position. Ensure that snap-lock is aligned with alignment arrow (Figure 40). (QA)



6.2-5625

Figure 40. Locking Barrel and Installation of Cover

l. Position cover and power cable housing assembly with power cable facing container.

m. Position receiver and barrel assembly so locking screw hole aligns with locking screw hole in cover and power cable housing assembly (Figure 40).

n. Hold release assembly as shown and slide receiver and barrel assembly into cover and power cable assembly until holes for screws are aligned.

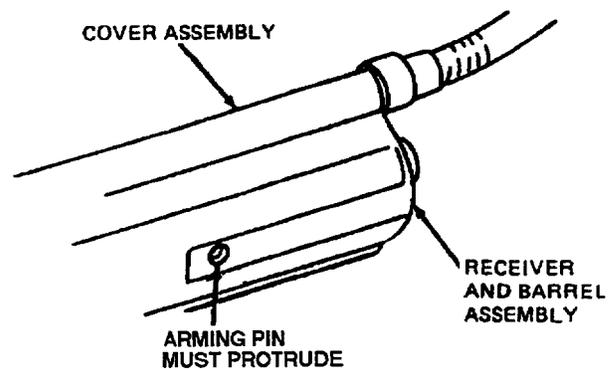
o. Install cover locking screw and lockwasher. Apply torque seal to locking screw.

**WARNING**

After automatic parachute release has been assembled with delay cartridge, firing pin is in a cocked position. Movement of arming cable from parachute release in excess of 0.5-in. will cause actuation of the device.

**28. AUTOMATIC PARACHUTE RIPCORD RELEASE ARMED CHECKOUT AND INSTALLATION.**

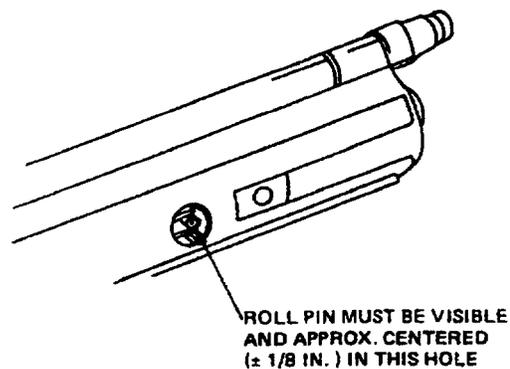
a. Ensure arming device pin protrudes (about 1/32-in.) from arming pin retainer (Figure 41).



6.2-6145A

Figure 41. Ensure Arming Pin Protrudes

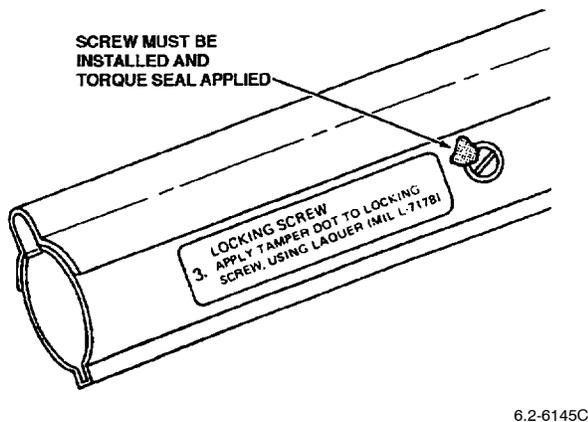
b. Ensure roll pin is visible and centered  $\pm 1/8$ -in. in viewing hole (Figure 42).



6.2-6145B

Figure 42. Ensure Pin is Visible

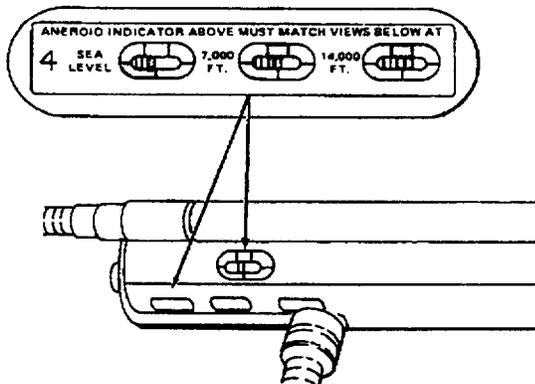
c. Ensure cover locking screw is installed with tamper dot applied (Figure 43).



6.2-6145C

Figure 43. Ensure Cover Locking Pin Installed

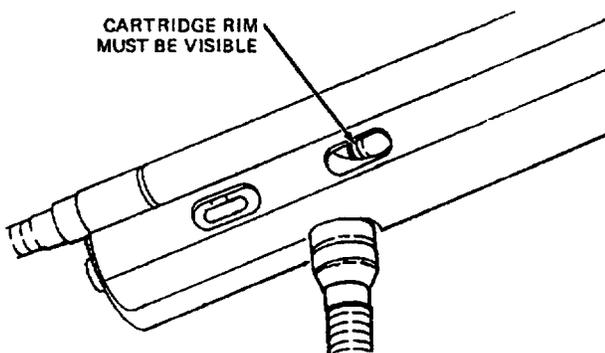
d. Ensure aneroid indicator is in proper position for local elevation (Figure 44).



6.2-6145D

Figure 44. Ensure Aneroid Indicator in Proper Position

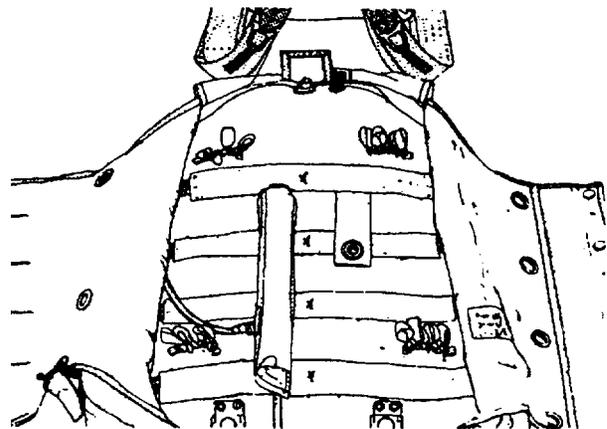
e. Ensure cartridge is installed. Look thru port and verify cartridge rim is visible (Figure 45). (QA)



6.2-6145E

Figure 45. Ensure Cartridge is Installed

f. Install release into actuator pocket. Ensure that power cable housing is routed flush with bottom of container. Close fastener (Figure 46).



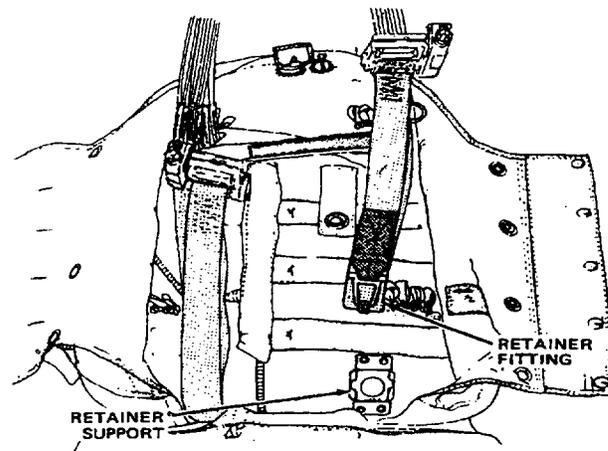
6.2-6145F

Figure 46. Install Release Into Pocket

## 29. ATTACHMENT OF RISERS TO CONTAINER.

a. Remove tension strap from canopy apex; then remove tension hooks from connector links and packing table.

b. Rotate risers onto container, and secure riser retainer fittings to riser retainer supports. Risers must be placed over arming cable housing (Figure 47).

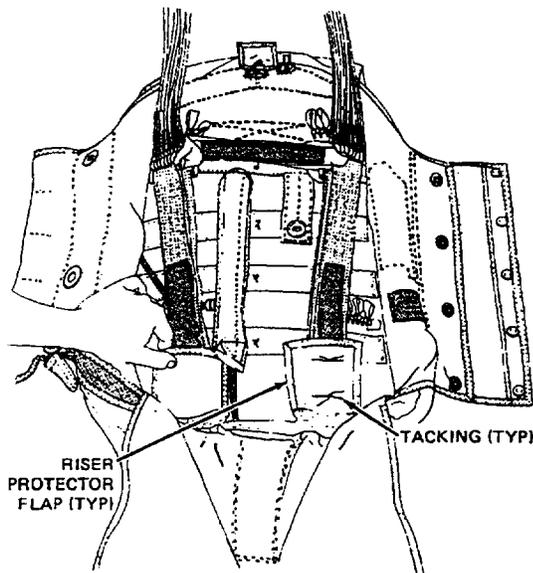


6.2-5644

Figure 47. Attachment of Risers to Container

c. Position riser protector flaps over risers.

d. Tack each protector flap to container in two places and 2-in. apart from one another. Tack with one turn of size FF thread, doubled and waxed. Form tacking by passing thread down thru protector flap, under retainer support, thru channel, and up thru protector flap. Tie off (Figure 48).

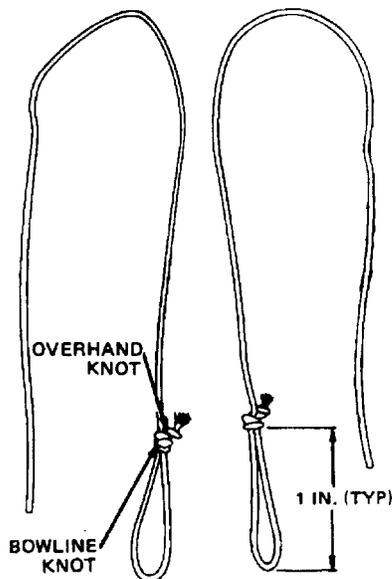


6.2-5645

Figure 48. Tacking Riser Protector Flaps to Container

30. INSTALLATION OF CONNECTOR LINK TIES.

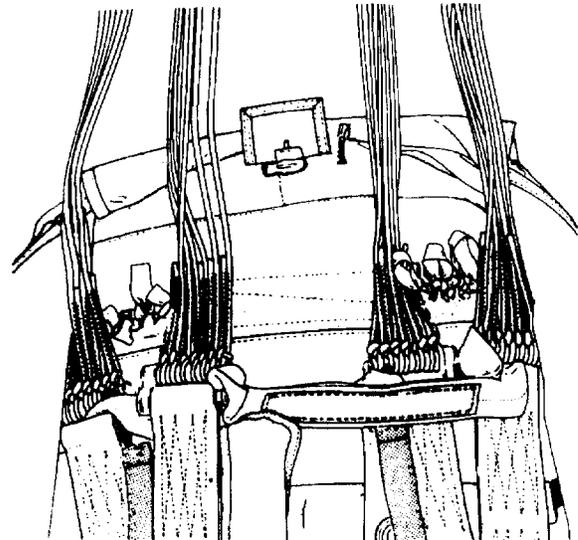
- a. Cut two 12-in. lengths of Type I or IA nylon cord and sear ends.
- b. Form a 1-in. loop in one end of each tie cord and secure with a bowline knot. Tie an overhand backup knot in end of each cord (Figure 49).



6.2-6146A

Figure 49. Form a 1-in. Loop

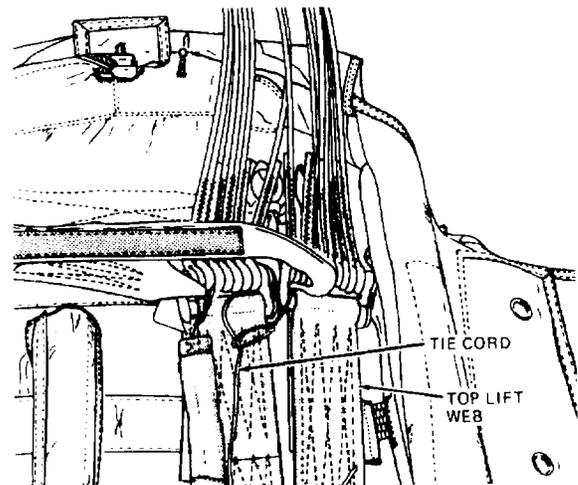
- c. Position connector links side by side so that top connector links are on helper's side of bottom connector links (Figure 50).



6.2-6146B

Figure 50. Position Connector Links

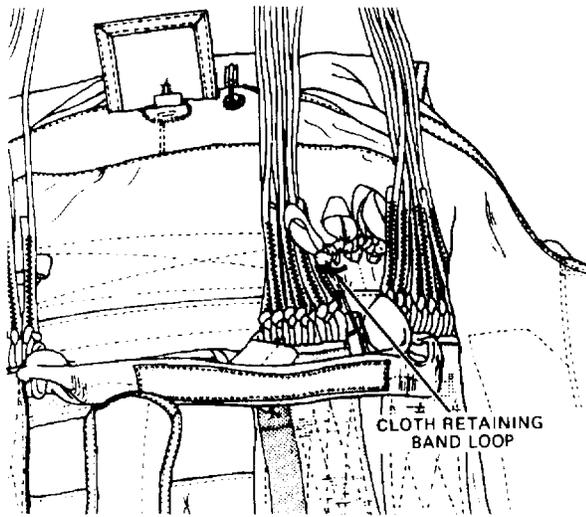
- d. Form a noose around connector links located on helper's side with one of the tie cords (Figure 51).



6.2-6146C

Figure 51. Form a Noose Around Connector Links

- e. Tighten noose and route tie cord under suspension lines and cross connector straps draw tight and tie free end of tie cord to bottom in-board retaining band loop with 3 to 4 half-hitches, ending with an overhand knot. Trim excess cord (Figure 52).



6.2-6146D

Figure 52. Tighten Noose and Route Tie Cord

f. Repeat steps d and e on packer's side of container.

**31. INSTALLATION OF RIPCORD AND RIPCORD RELEASE LANYARD.**

**NOTE**

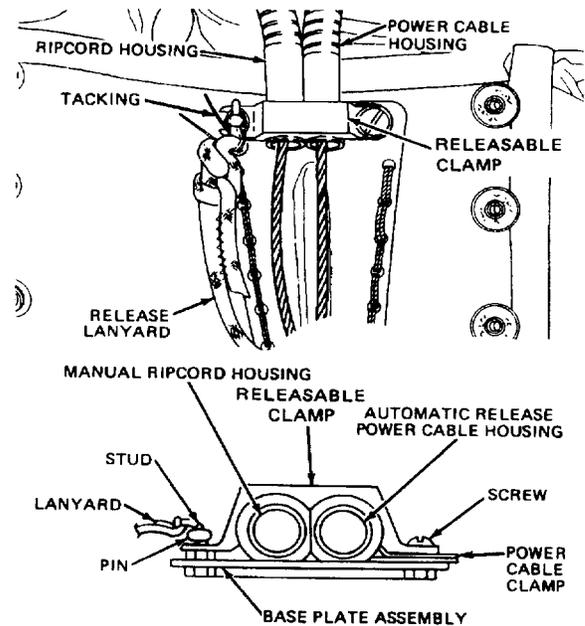
Tie off all tackings with a surgeon's knot topped with a square knot, followed with a binder knot per WP 002 00. Trim off excess leaving 1/2-in.

- a. Mark release lanyard 36-in. from locking pin end.
- b. Fold top end flap onto container so that base plate faces up.

**WARNING**

Power cable housing must be properly attached to base plate with clamp assembly.

- c. Secure power cable housing to baseplate assembly with clamp and screw. Position large slotted end of releasable clamp under screwhead on base plate. Position ripcord housing on left of power cable housing with two flat sides together and other two flat sides against base plate (Figure 53). (QA)



6.2-6147

Figure 53. Installation of Ripcord Release Lanyard and Clamp

**WARNING**

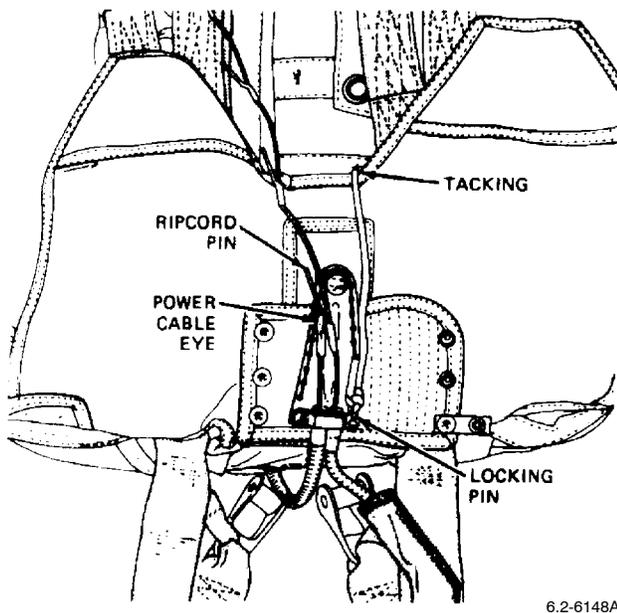
Base plate releasable clamp must be positioned over hex nut prior to installing locking pin.

- d. Holding ripcord and power cable housings under releasable clamp, place over top of hex nut stud and insert release lanyard locking pin into stud hole. Tighten screw and secure clamp in place. Locking pin should be finger tight. If necessary, slightly loosen screw (Figure 53). (QA)

- e. Tack locking pin to stud with one turn size FF thread, single and waxed. Pass thread thru lanyard knot and then tie off (Figure 53). (QA)

- f. Insert top ripcord pin thru beveled side of eye in power cable. Rig ripcord release lanyard as described below.

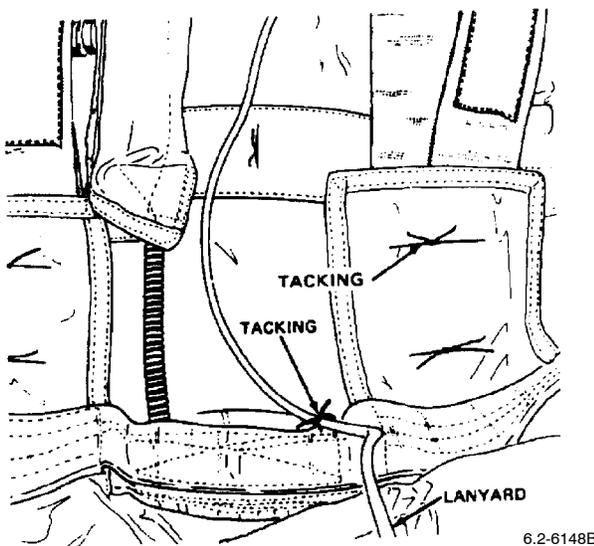
- g. Route release lanyard to top end flap "V". Tack lanyard to top end flap at "V" with 1/8-in. slack between locking pin and tacking. Tacking shall pass around lanyard and thru end flap and consist of one turn of size E thread, single and waxed; tie off (Figure 54).



6.2-6148A

**Figure 54. Route Release Lanyard to Top End Flap V**

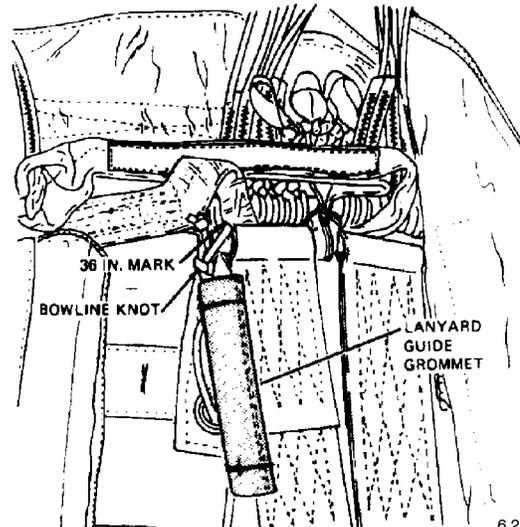
h. Route lanyard along inside of container end flap to power cable buttonhole. Tack lanyard to lower edge of container, allowing 1/8-in. slack between tackings. Tacking shall pass around lanyard and then thru container fabric and shall consist of one turn size E thread, single and waxed; tie off (Figure 55).



6.2-6148B

**Figure 55. Route Lanyard Along Inside of Container**

i. Reeve lanyard up thru lanyard guide grommet. Position 36-in. mark on lanyard over bar on inboard connector link. Secure lanyard to connector link bar with a bowline knot followed by an overhand knot (Figure 56). (QA)



6.2-6148C

**Figure 56. Reeve Lanyard Up thru Lanyard Guide Grommet**

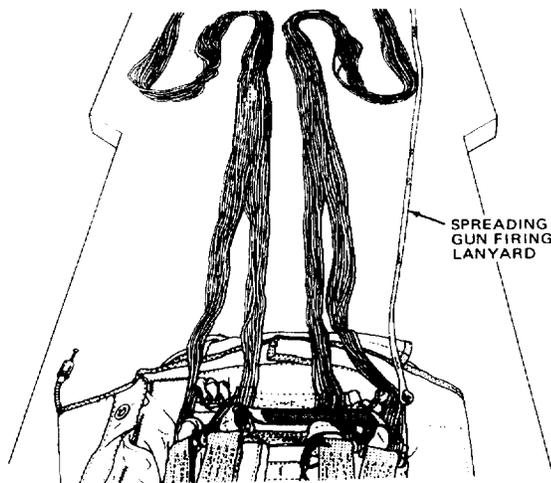
**32. ATTACHMENT OF FIRING LANYARD TO CONNECTOR LINK.**

**WARNING**

Safety pin must be installed in spreading gun.

Ensure no suspension lines are dropped from connector link bar.

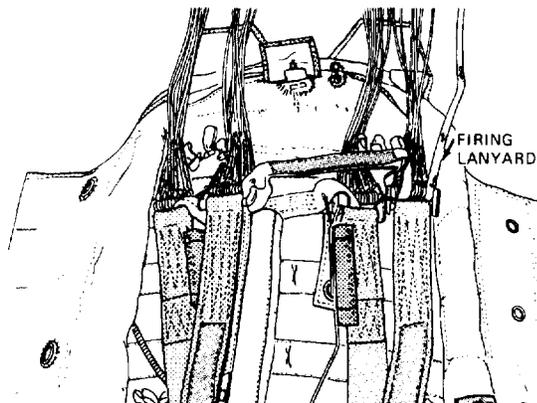
a. At spreading gun, route firing lanyard between suspension lines 7 and 8. Slide canopy towards container and form S-folds in suspension lines large enough to allow loop in end of firing lanyard to align with connector links (Figure 57).



6.2-6149A

**Figure 57. Route Firing Lanyard Between Suspension Line 7 and 8**

b. Remove yoke and plate assembly on outboard top connector link located on helper's side. Insert connector link bar thru loop in firing lanyard and reattach yoke and plate assembly. Tighten screw to a torque value of 20 to 25 in-lbs. Apply torque seal to connector link screwhead (Figure 58). (QA)



6.2-6149B

**Figure 58. Remove Yoke and Plate Assembly**

**33. STOWAGE OF SUSPENSION LINES.**

**NOTE**

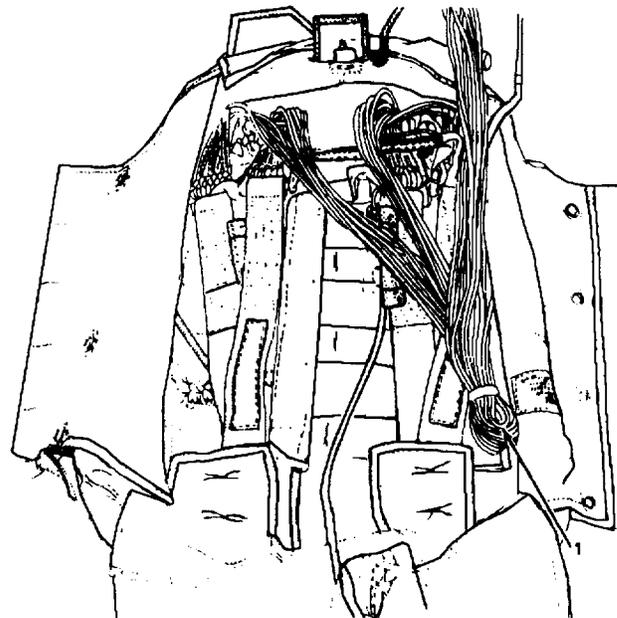
During stowing operation, ensure suspension lines do not become loose or rotated and no suspension lines are left out of retaining bands.

**NOTE**

Canopy shall be drawn along packing table only in sufficient lengths to permit suspension line bights to be formed for insertion into retaining bands.

Retaining bands must lie flat around stows without twist or folded under edges.

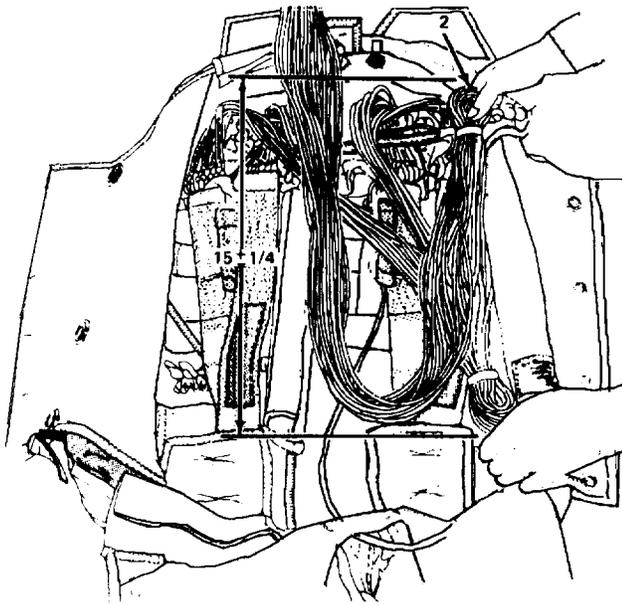
a. Packer shall grasp suspension lines about 16-in. from connector links and form and stow first suspension line bight in retaining band farthest from canopy on helper's side (Figure 59).



6.2-5811A

**Figure 59. Packer Shall Grasp Suspension Lines 16-in. From Connector Links**

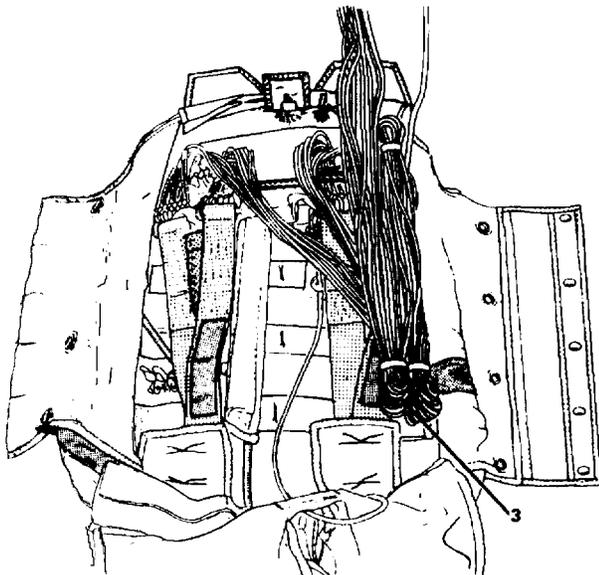
b. Packer shall form and stow second bight in retaining band opposite first stow on helper's side. There shall be 14 3/4 to 15 1/4-in. of line between bights (Figure 60).



6.2-5811B

**Figure 60. Packer Shall Form and Stow Second Bight**

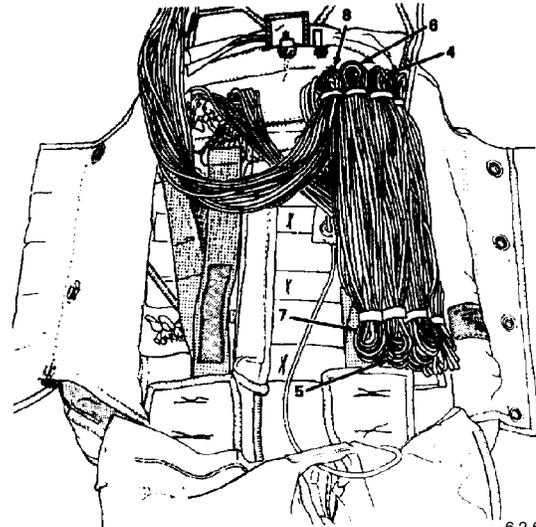
c. Third bight is form in same manner as second bight. Bight is stowed next to first stow (Figure 61).



6.2-6150A

**Figure 61. Third Bight is Formed in Same Manner**

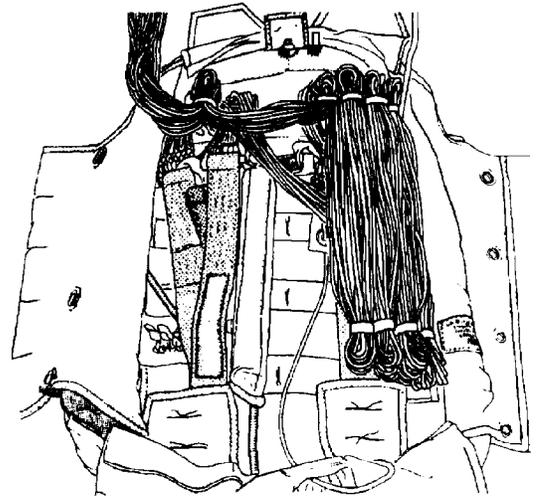
d. Stow bights 4 thru 8 in same manner as bights 1 thru 3 (Figure 62).



6.2-6150B

**Figure 62. Stow Bights 4 thru 8 in Same Manner**

e. Stow bight 9 in inboard retaining band across from stow 8 (Figure 63).



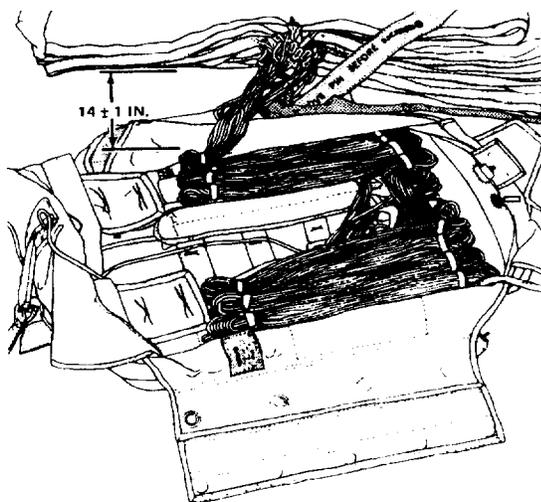
6.2-6150C

**Figure 63. Stow Bight 9 in Inboard Retaining Band**

**WARNING**

There shall be  $14 \pm 1$ -in. of suspension line between last stow and skirt hem.

f. Stow bights 10 thru 16 in same manner as bights 1 thru 8. there shall be  $14 \pm 1$ -in. of distance between last stow and skirt hem. The distance may be adjusted by increasing or decreasing length of line between bights 8 and 9 (Figure 64). (QA)



6.2-6150D

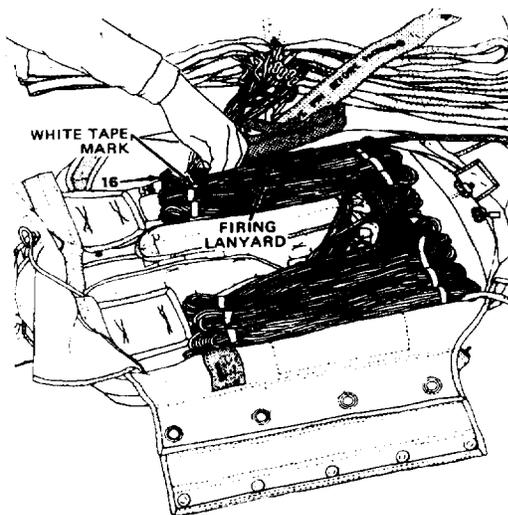
Figure 64. Stow Bights 10 thru 16

34. STOWAGE OF FIRING LANYARD IN CONTAINER.

**WARNING**

Safety pin must be installed in spreading gun.

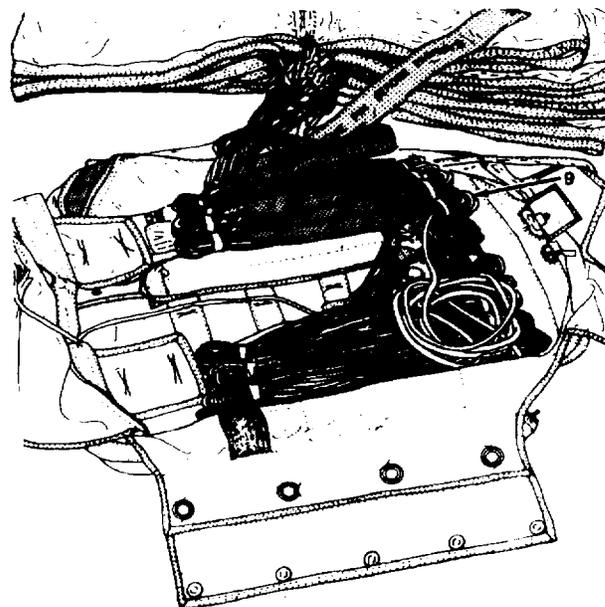
a. Packer shall form a bight in firing lanyard at white tape mark on extractor sleeve. Stow firing lanyard bight in center of suspension line bight 16 (Figure 65).



6.2-6151A

Figure 65. Packer Shall Form a Bight in Lanyard

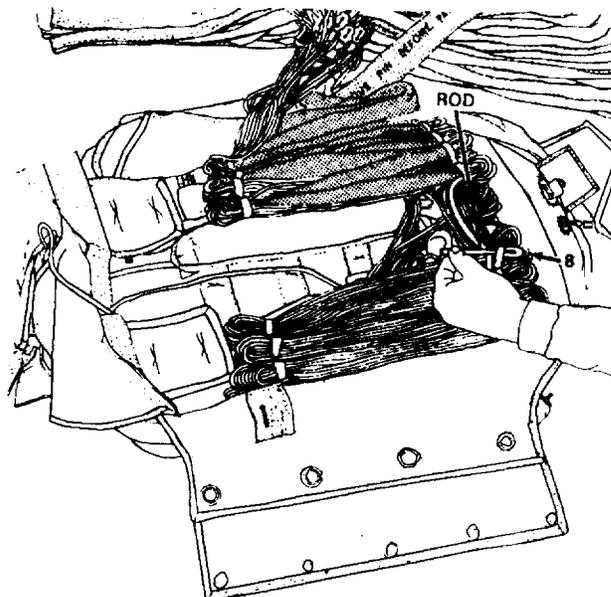
b. Continue to stow lanyard in center of bights 15 thru 9 (Figure 66).



6.2-6151B

Figure 66. Continue to Stow Lanyard in Center Bights

c. Using a 3/8-in. rod with a smooth rounded end, tuck a 5/8-in. bight of firing lanyard into retaining band holding bight 8. Position bight on top of suspension lines (Figure 67).

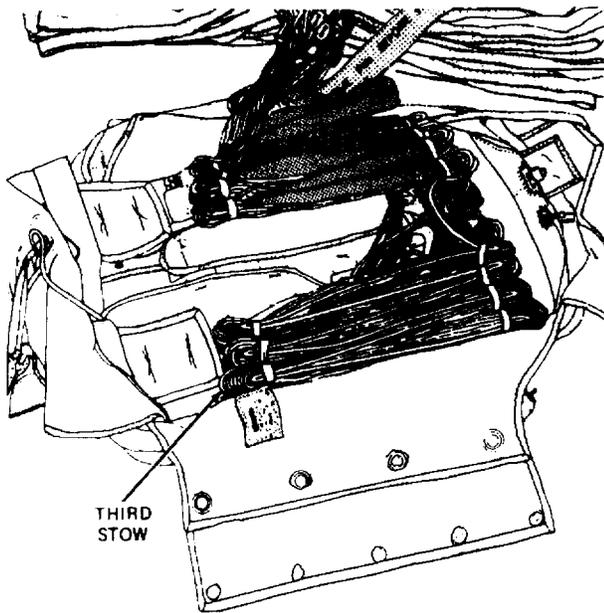


6.2-6151C

Figure 67. Tuck Firing Lanyard into Retaining Band

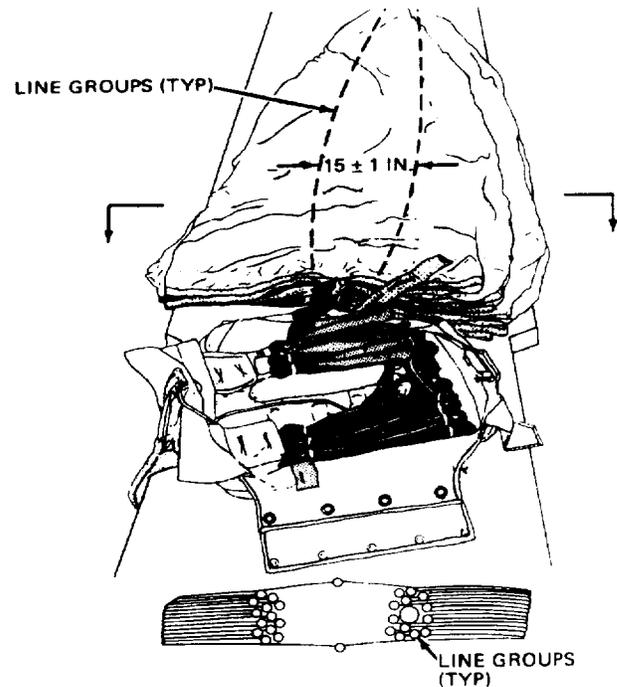
d. Stow remainder of firing lanyard in center of bights 7 thru 3. Position remainder of firing lanyard between suspension lines and outboard connector link on helper's side of container (Figure 68). (QA)

c. Spread the two groups of suspension lines  $15 \pm 1$ -in. apart the length of canopy. This corresponds roughly to width of container. Allow normal tapering at vent and skirt hem (Figure 69).



6.2-6151D

Figure 68. Stow Remainder of Firing Lanyard



6.2-6152A

Figure 69. Spread the Two Groups of Suspension Lines Apart

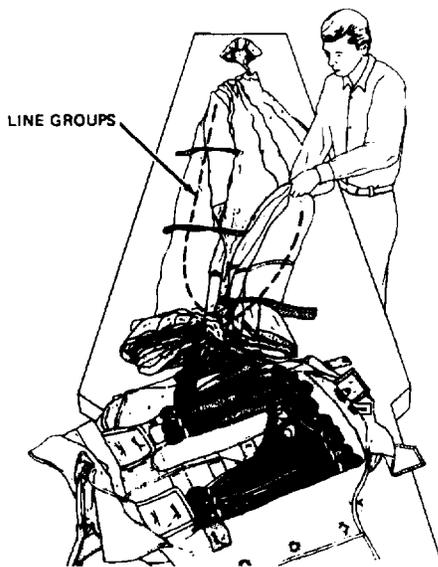
**35. PREPARATION OF CANOPY FOR FOLDING.**

a. Cut a 36-in. length of MIL-T-5608, Type II, Class A, 3/8-in. wide nylon tape. Tie an overhand knot in each end of tape.

b. Insert tape thru loop on canopy radial seam and lay tape across canopy.

d. Straighten skirt hem.

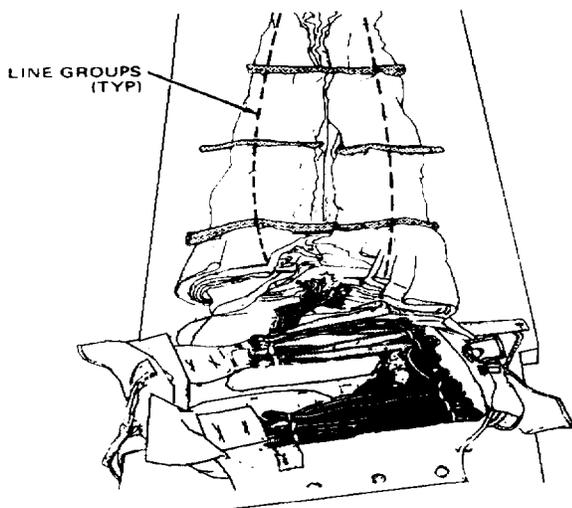
e. Fold all gores over as a group, the skirt edges being brought to center of spreading gun. Allow canopy to break at tie loop for canopy tie. Keep canopy in place with three shot bags (Figure 70).



6.2-6152B

**Figure 70. Fold all Gores Over as a Group**

f. Fold all gores as a group on the helper's side, in the same manner. Adjust canopy gores to obtain a finished canopy width of 20-in (Figure 71).



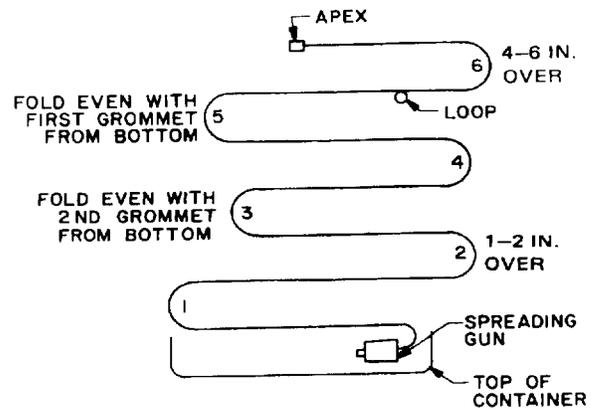
6.2-6152C

**Figure 71. Fold all Gores as a Group on Helper's Side**

**36. STOWAGE OF SPREADING GUN AND CANOPY.**

a. Remove shot bag from canopy at skirt hem. (QA)

b. Six folds shall be made when stowing canopy in container. Use the following illustration as a guide while stowing canopy (Figure 72).



6.2-5815A

**Figure 72. Six Folds Shall be Made When Stowing Canopy**

c. Grasp skirt hem and spreading gun. Helper shall draw skirt hem and spreading gun across container to top edge. Position firing mechanism of the spreading gun towards bottom of container.

**WARNING**

Safety pin must be removed from spreading gun.

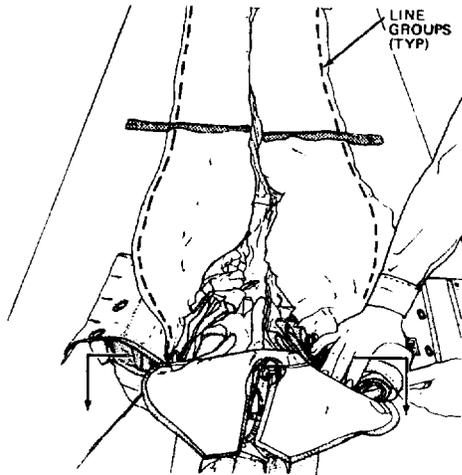
d. Remove safety pin from spreading gun (Figure 73). (QA)



6.2-5815B

**Figure 73. Remove Safety Pin**

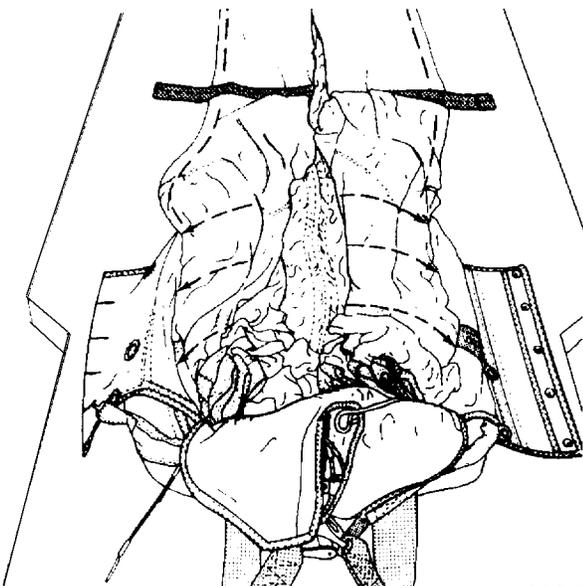
e. With canopy lowered into position onto container, line groups slightly overlap each side of container. Fan skirt hem about 20 to 35-degrees. Maintain this fan position and with hand lying flat insert skirt into top corners of container. Keep center of container as free as possible of canopy bulk (Figure 74).



6.2-5815C

Figure 74. Canopy Lowered into Position

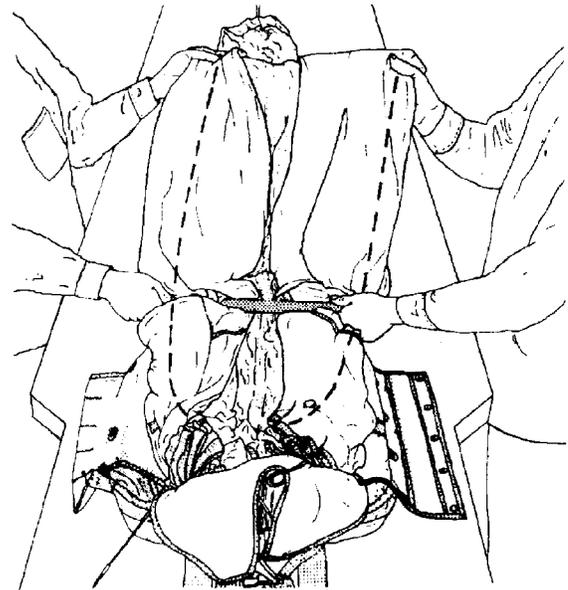
f. Stow as compactly as possible, edges of the two gore groups with related line groups into container, with a downward, outward motion (Figure 75).



6.2-5816A

Figure 75. Stow as Compactly as Possible

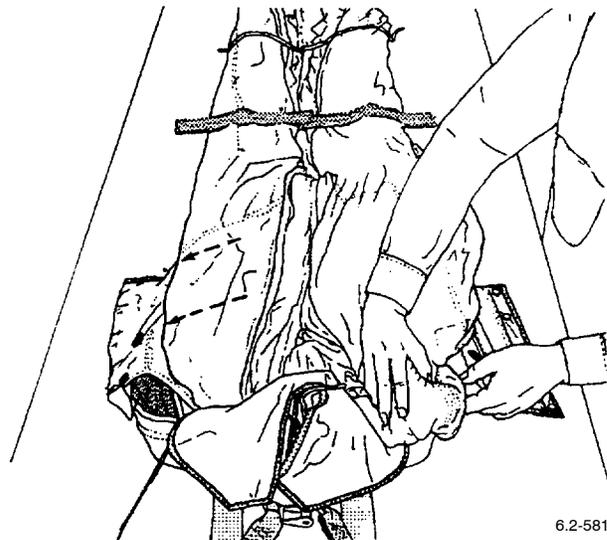
g. To form first fold, hold a long bar in place on top of canopy even with bottom edge of container. Grasp canopy about the length of container from long bar. Rotate this fold towards top of container. Second fold is extended over top edge of container 1 or 2-in (Figure 76).



6.2-5816B

Figure 76. Form First Fold

h. Insert folded canopy corners into container corners with flat of hands. Work gore material with line groups into sides of container. Keep center of container as free of canopy material as possible (Figure 77).



6.2-5816C

Figure 77. Insert Folded Canopy Corners into Container

i. To form third fold, first remove two remaining shot bags, then hold a long bar in place on top of canopy even with second grommet from bottom of side flaps. Grasp canopy, about two-thirds length of container from long bar. Rotate this fold towards top of container. Fourth fold is extended over the top edge of the container 1 or 2-in (Figure 78).

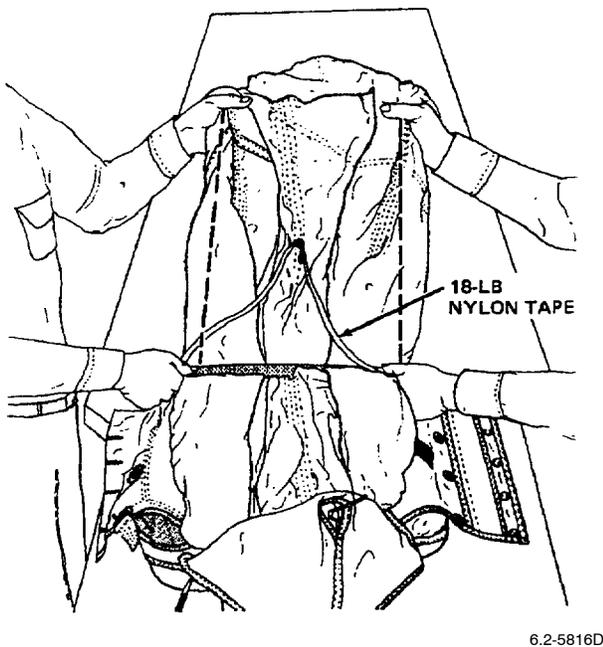


Figure 78. To Form Third Fold

j. Stow canopy and line groups toward sides. Particular attention must be paid to inserting fold four in area of riser slots. Center is still kept clear of canopy material as much as possible (Figure 79).

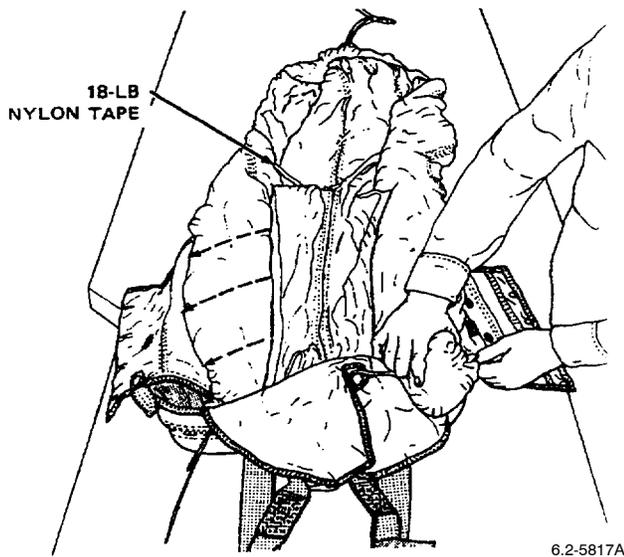


Figure 79. Stow Canopy and Line Groups

**NOTE**

Ensure nylon tape in loop on radial seam remains centered.

k. Form fifth fold by holding long bar even with bottom set of grommets. End of fold extends  $5 \pm 1$ -in. over top edge of container (Figure 80).

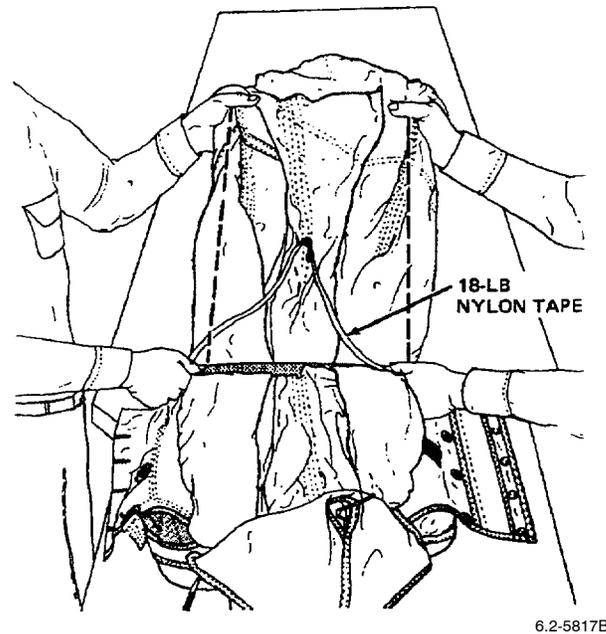


Figure 80. Form Fifth Fold

l. Route one end of MIL-T-5608, Type II, Class A, 3/8-in. wide nylon tape thru vent lines and spreading gun retaining cord, tie ends of tape together with a surgeon's knot. Knot should be positioned as near ends of tape as possible to ensure canopy apex is not compressed by pulling tape up tight (Figure 81). (QA)

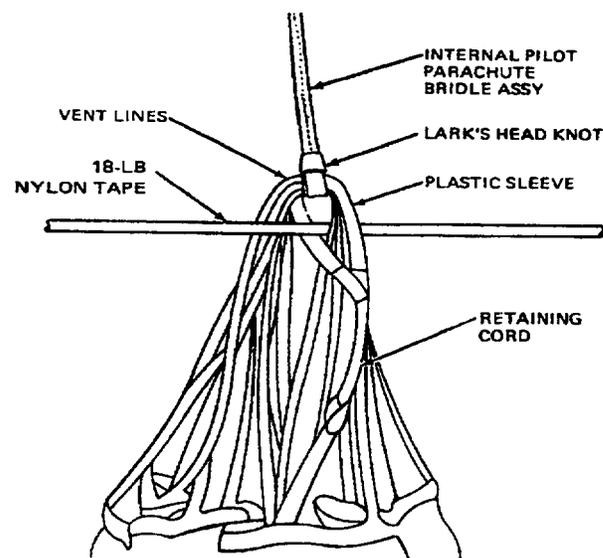


Figure 81. Route One End of Nylon Thru Vent Lines

**NOTE**

Care must be taken not to break tape securing radial seam loop to vent lines.

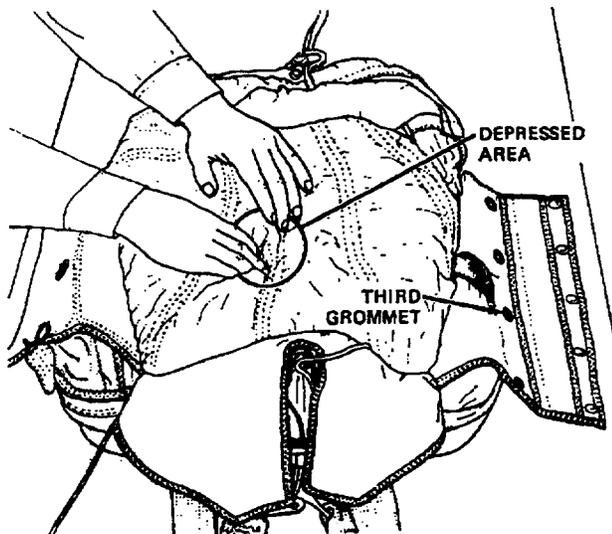
m. Spread vent hem across width of container. Insert fold 6 into top corners of container. Maintain flow of canopy material towards sides of container (Figure 82).



6.2-5818A

**Figure 82. Spread Vent Hem Across Width of Container**

n. Form a deep depression along center line even with third grommet from container bottom. This serves as a spring bed for internal pilot parachute (Figure 83).

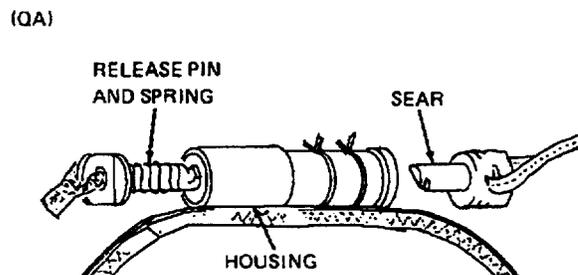


6.2-5818B

**Figure 83. Form a Deep Depression Along Center Line**

o. Insert release pin and spring attached to external pilot parachute bridle into wide end of override disconnect housing. Push sear into housing, using a temporary locking pin, until sear protrudes from opposite end.

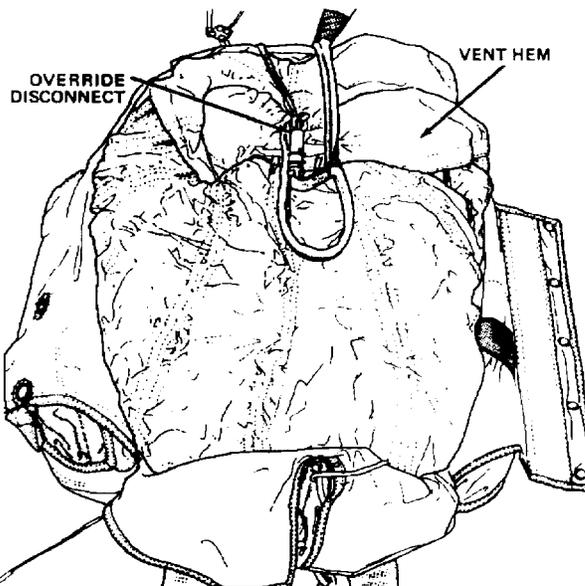
p. Engage sear on internal pilot parachute connector strap with release pin and spring in housing and release tension on release pin and spring (Figure 84). (QA)



6.2-5818C

**Figure 84. Engage Sear on Internal Pilot Parachute Connector Strap**

q. Place override disconnect on top of vent hem (Figure 85).

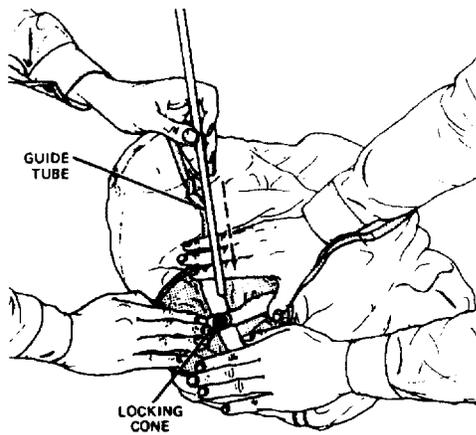


6.2-5818D

**Figure 85. Place Override Disconnect on Top**

r. Remove any entanglements in pilot parachute connector strap.

s. Position pilot parachute vertically on packing table and insert guide tube into grommet in crown of pilot parachute. Guide tube shall extend to bottom of pilot parachute and be positioned over locking cone in spring base plate (Figure 86).



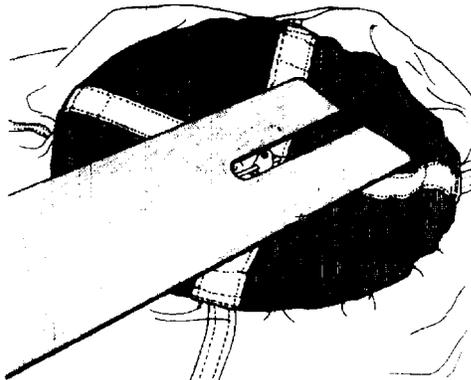
6.2-6153A

**Figure 86. Position Pilot Parachute Vertically on Packing Table**

**CAUTION**

Ensure that pilot parachute cloth is neither twisted nor entangled in compressed pilot parachute spring.

t. Completely compress pilot parachute spring, and remove guide tube from locking cone. Cone shall protrude thru grommet. Pull all nylon cloth away from locking cone so that no cloth shows thru grommet (Figure 87).

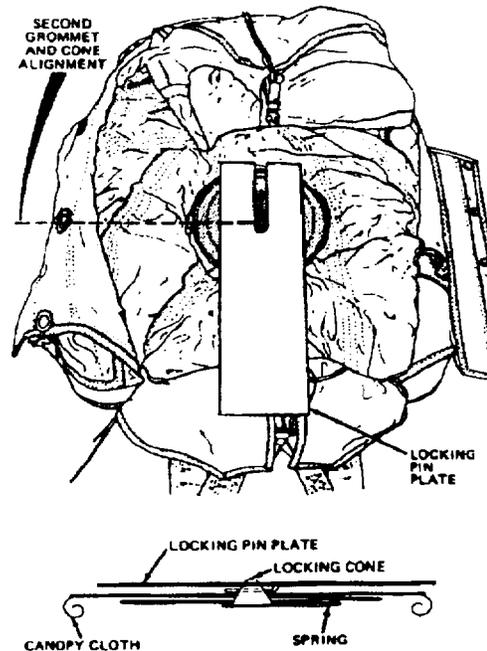


6.2-6153B

**Figure 87. Completely Compress Pilot Parachute Spring**

u. Insert pin of temporary locking pin plate into bottom hole of locking cone to keep pilot parachute compressed.

v. Position pilot parachute so locking cone is aligned with second grommet from top end of container. Pilot parachute temporary locking pin plate shall extend over top end flap. Tuck pilot parachute cloth under outer edge of crown (Figure 88). (QA)



6.2-6153C

**Figure 88. Position Pilot Parachute so Locking Cone is Aligned**

w. Route external pilot parachute bridle out bottom end of container on external pilot parachute pocket side. (QA)

**37. CLOSING CONTAINER.**

**WARNING**

Safety pin must be removed from spreading gun.

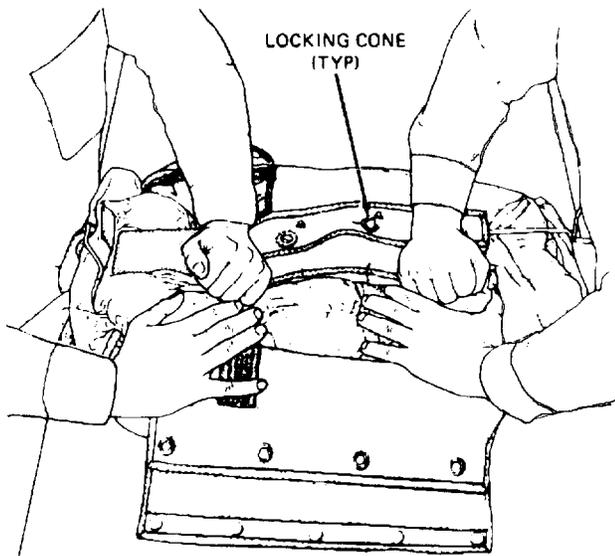
**NOTE**

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. Only the temporary locking pin shown in WP 004 00 shall be used.

b. Rotate container 90-degrees clockwise.

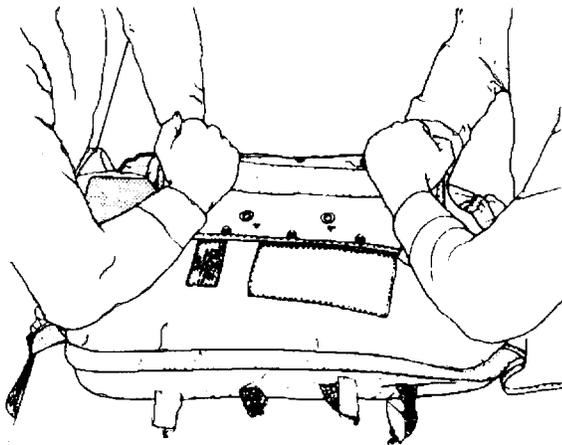
c. Pull side flap with locking cone over pilot parachute and folded canopy (Figure 89).



6.2-6154A

**Figure 89. Pull Flap with Locking Cone Over Pilot Parachute**

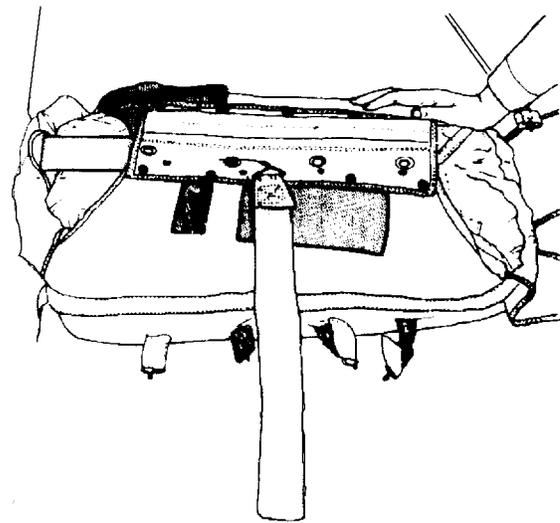
d. Pull side flap with grommets over side flap with locking cone (Figure 90).



6.2-6154B

**Figure 90. Pull Side Flap with Grommets Over Locking Cone**

e. Align second grommet from top of container on each side flap over locking cone in pilot parachute. Insert temporary locking pin in top hole in pilot parachute locking cone. Note direction of temporary locking pin (Figure 91).



6.2-6154C

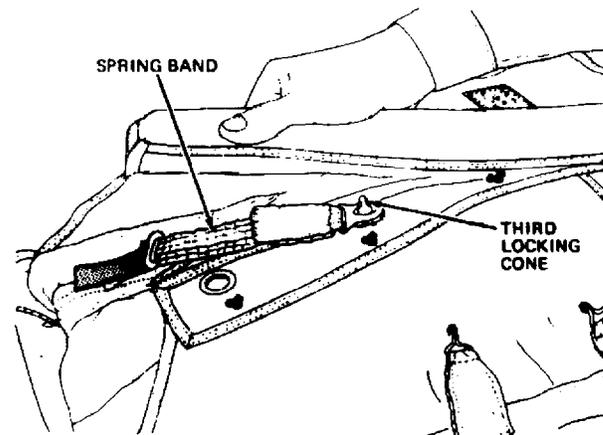
**Figure 91. Alignment of Second Grommet**

f. Remove temporary locking pin plate. (QA)

**NOTE**

Ensure that bent hook on opposite end of spring band assembly faces down.

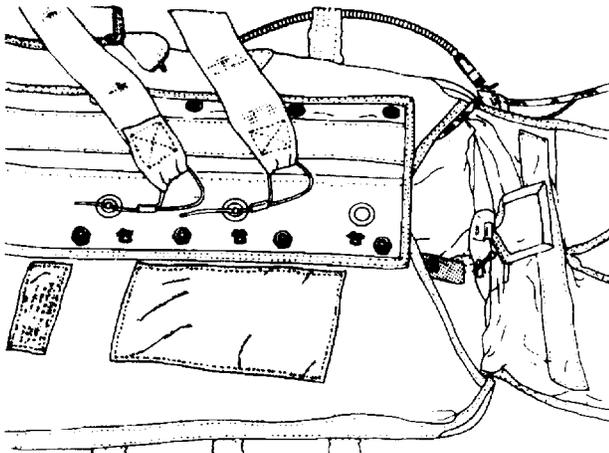
g. Place end tab spring band on third locking cone from top of container so that end tab is bend-side down. Spring band should be positioned to exit bottom left side of container (Figure 92). (QA)



6.2-6154D

**Figure 92. Place End Tab of Spring Band on Third Locking Cone**

h. Align third grommet from top of container over spring band and over locking cone on opposite side flap. Insert temporary locking pin in locking cone from bottom to top of container. Note direction of temporary locking pins. Ensure that metal tab end of spring band is positioned between third locking cone and third grommet from top of container (Figure 93). (QA)

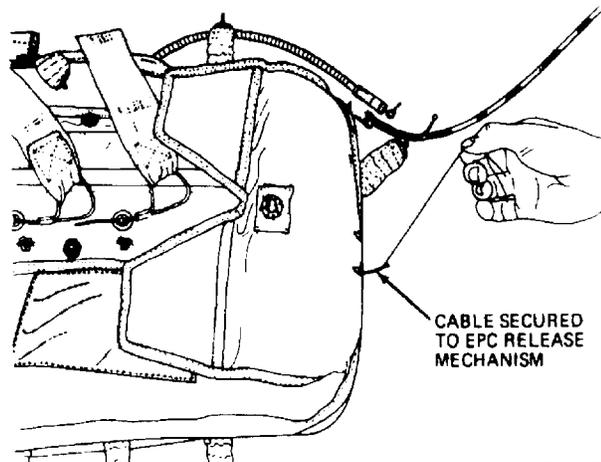


6.2-6155A

Figure 93. Align Third Grommet From Top

i. Cut a 12-in. length of waxed size FF thread, with Lark's head knot; tie thread around ball end of cable that extends from external pilot parachute release mechanism.

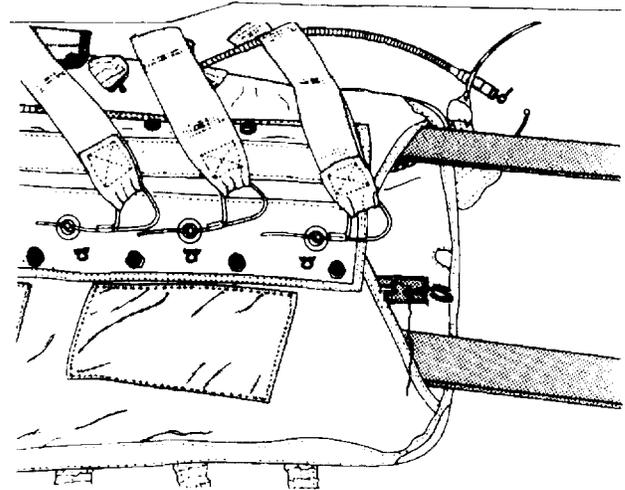
j. Pass both thread and cable thru button hole in bottom of container (Figure 94).



6.2-6155B

Figure 94. Pass Both Thread and Cable thru Button Hole

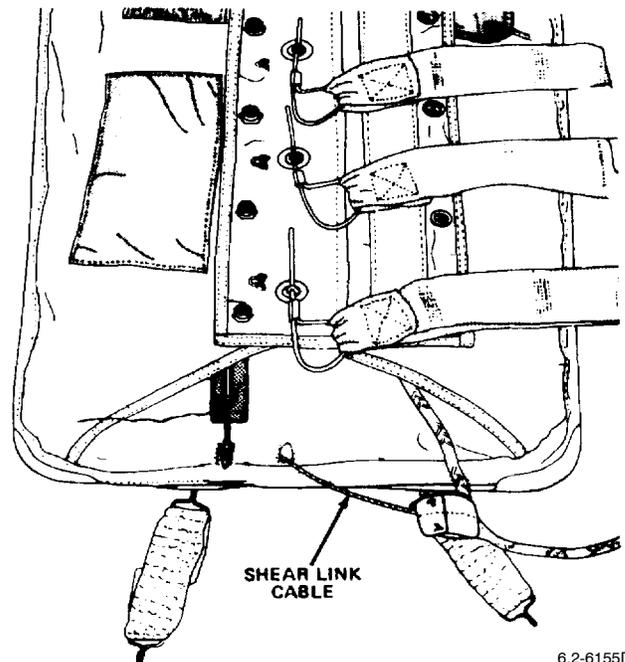
k. Tuck bottom end flap under side flaps using long bars inserted into pockets. Align grommets in side flaps over locking cone in bottom end flap. Insert temporary locking pin. Ensure external pilot parachute bridle is routed out bottom end of container on stowage pocket side of end flap locking cone (Figure 95).



6.2-6155C

Figure 95. Tuck Bottom End Flap Under Side Flaps

l. Pass swaged ball of shear link cable attached to external pilot parachute shear link thru buttonhole in bottom end flap of container (Figure 96).



6.2-6155D

Figure 96. Pass Swaged Ball of Shear Link Thru Button Hole

m. Pass thread attached to swaged ball on cable of release mechanism thru button hole in spring opening assembly.

n. Insert swaged ball of shear link cable firmly into opening of release mechanism. Maintain pressure on shear link cable by pushing it into opening of release mechanism.

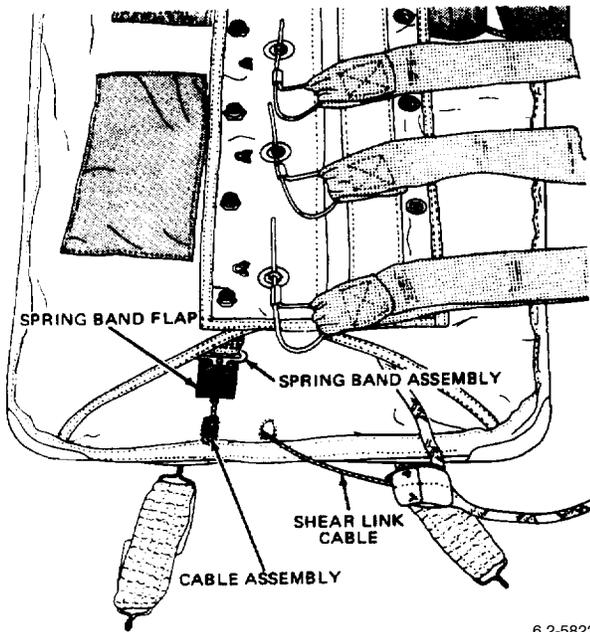
o. Pull forward on ball of release mechanism cable to its maximum travel, simultaneously maintaining pressure on shear link cable. Pull spring band assembly toward bottom of container and then insert release mechanism cable ball into slot of spring band assembly. Release mechanism cable must extend  $1 \frac{7}{8} \pm 1/8$ -in. from release mechanism, measured from ball end to hole in release mechanism (Figure 97). (QA)

**WARNING**

Parachute must pass the following test to be placed in service.

**NOTE**

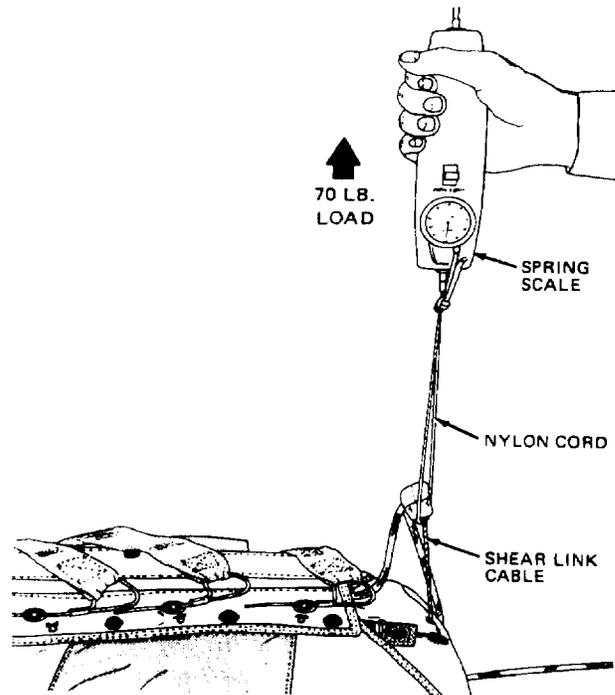
Application of a 70 lb. load on shear link cable will determine if cable is properly engaged in release mechanism.



6.2-5822A

**Figure 97. Pull Forward on Ball of Release Mechanism Cable**

p. Attach spring scale to shear link cable with a nylon cord. Using a straight steady pull, apply a 70 lb. load upward from release mechanism. Cable must remain locked in release mechanism (Figure 98). (QA)



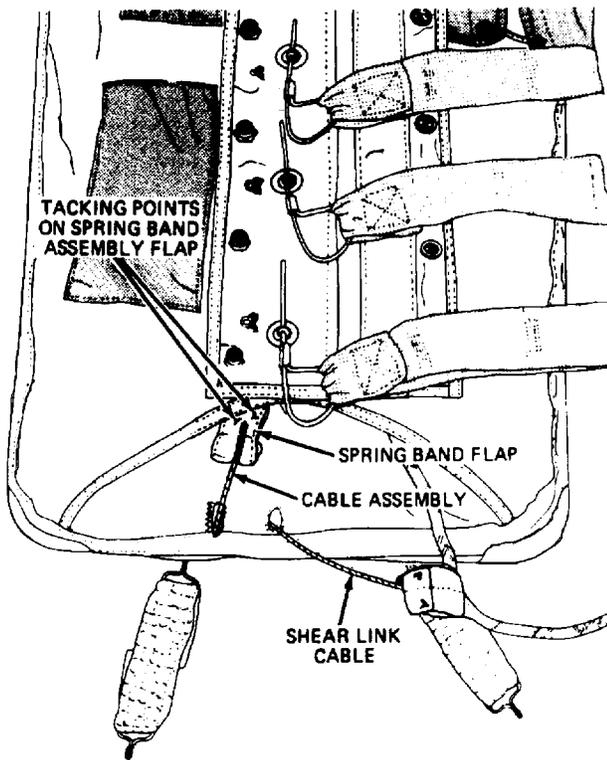
6.2-5822B

**Figure 98. Attach Spring Scale to Shear Link Cable**

q. The shear link cable, with about 30 lbs. pull applied, shall release when tension on cable/ball assembly is removed. Test this release function at least twice, re-inserting swaged ball of shear link cable after each test per steps m thru o. (QA)

r. Remove size FF thread from cable.

s. Fold back end tab of spring opening assembly and tack both sides of tab to spring opening assembly at point nearest hook. Use one turn of size E thread, single and waxed; tie off. Ensure tacking does not penetrate container end flap (Figure 99). (QA)



6.2-5823A

**Figure 99. Fold Back End Tab of Spring Opening Assembly**

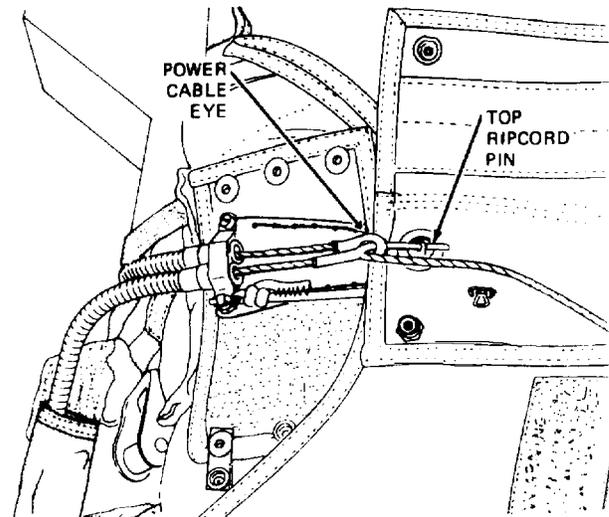
t. Tuck top end flap under side flaps with long bar.

**WARNING**

Use of ripcord pins as an alignment aid during installation may cause bending of pins and result in excessive pull forces.

Ensure that ripcord pins are centered in locking cones so that shoulder of ripcord pin is not jammed against locking cone, but extends more than 1/4-in. beyond base of grommet.

u. Align grommets on side flaps over locking cone on top end flap. Insert top ripcord pin into beveled side of power cable eye and insert pin into top locking cone (Figure 100).



6.2-5823B

**Figure 100. Align Grommets on Side Flaps**

v. Replace remaining temporary locking pins with ripcord pins, working from top to bottom of container (Figure 101). (QA)



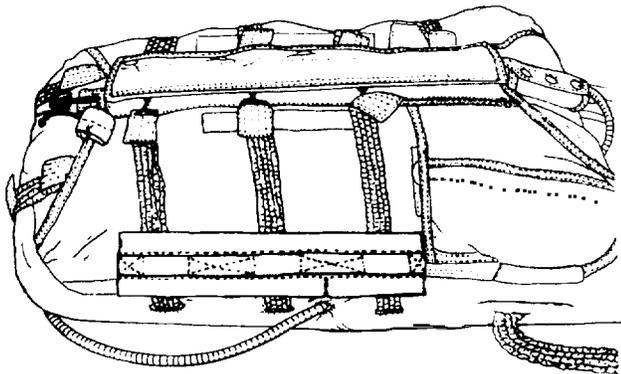
6.2-5823C

**Figure 101. Replace Temporary Locking Pins**

**WARNING**

Container spring opening assemblies must pass under external pilot parachute lanyard and static line.

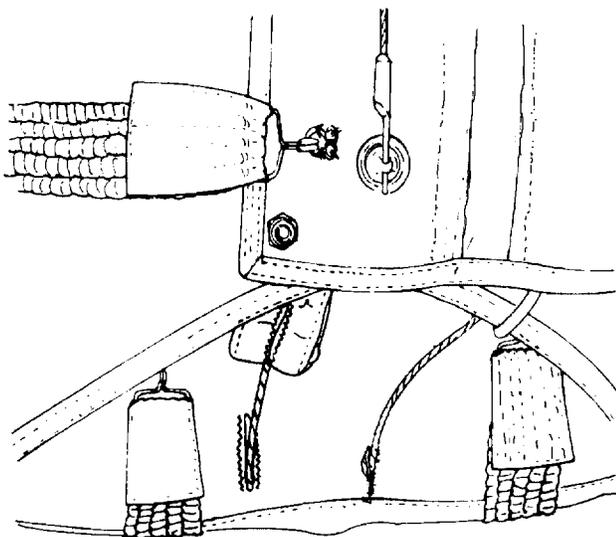
- w. Attach side flap spring opening assemblies except for top right assembly which passes over the EPC pocket (Figure 102).



6.2-6156A

**Figure 102. Attach Side Flap Spring Opening Assemblies**

- x. Attach bottom spring opening assemblies (Figure 103).

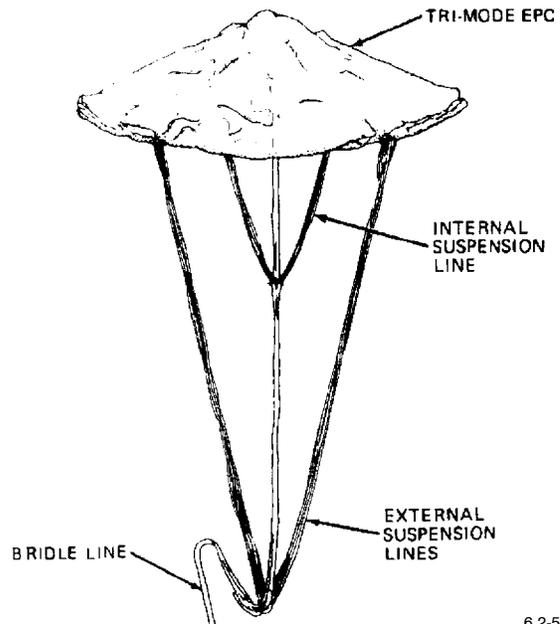


6.2-6156B

**Figure 103. Attach Bottom Spring Opening Assemblies**

**38. FOLDING AND STOWING EXTERNAL PILOT PARACHUTE.**

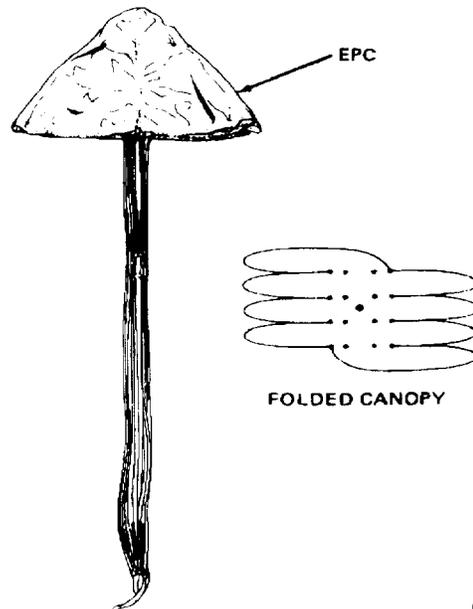
- a. Lay out external pilot parachute on packing table and remove any dips and twists in internal and external suspension lines (Figure 104).



6.2-5828A

**Figure 104. Lay Out External Pilot Parachute**

- b. Fold top gore onto group of gores on packer's side of table; at same time, helper shall fold bottom gore under group of gores on helper's side of table (Figure 105).



6.2-5828B

**Figure 105. Fold Top Gore Onto Group of Gores**

c. Fold skirt at 90-degree angles and position on each side of suspension lines (Figure 106).

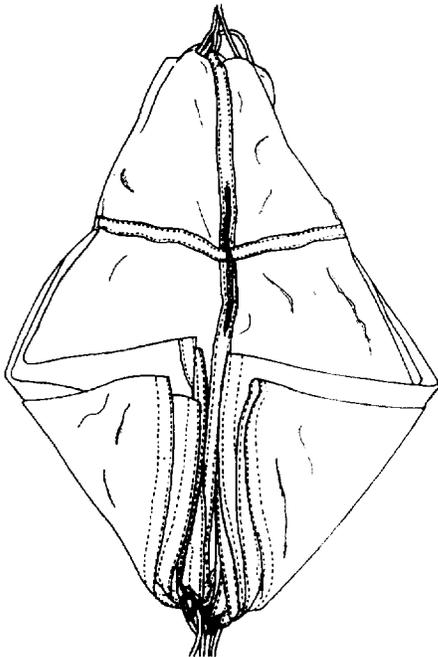


Figure 106. Fold Skirt at 90° Angles

d. Fold both gore groups towards center line to achieve width of deployment bag (Figure 107).

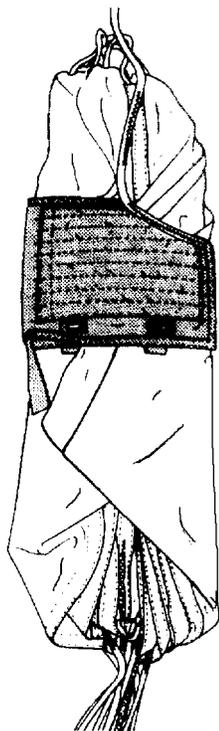


Figure 107. Fold Both Groups Towards Center

e. S-fold canopy in 7-in. folds (Figure 108).

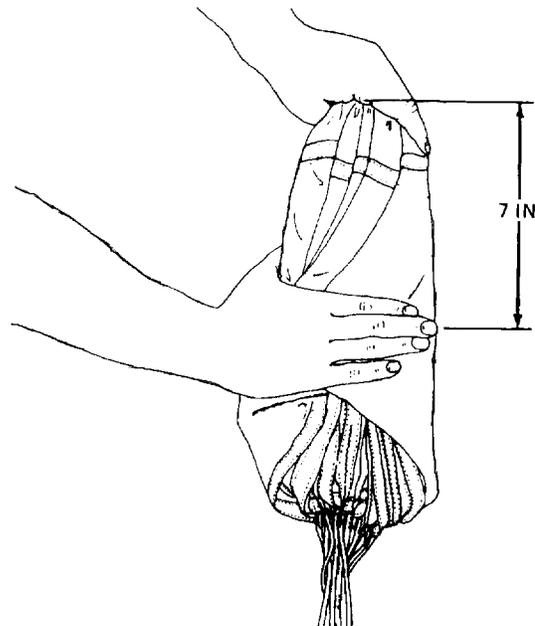


Figure 108. S-Fold Canopy

f. Position apex towards packer's side of table. Align deployment bag with curved indent towards helper. Bag locking loop openings face up (Figure 109). (QA)

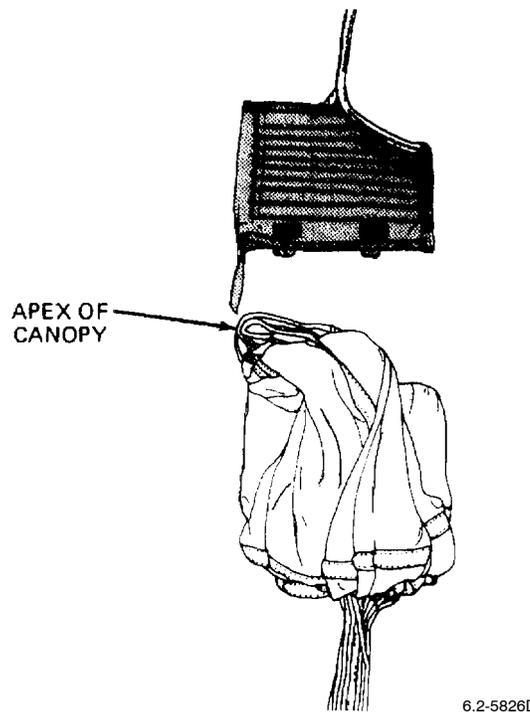
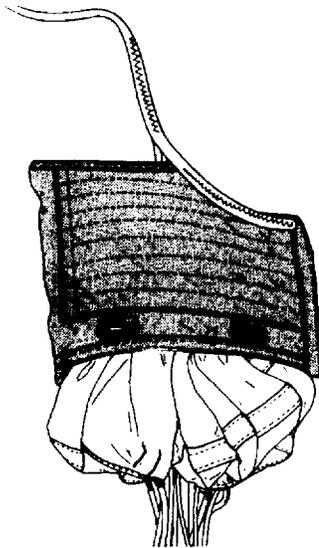


Figure 109. Position Apex Towards Packer's Side

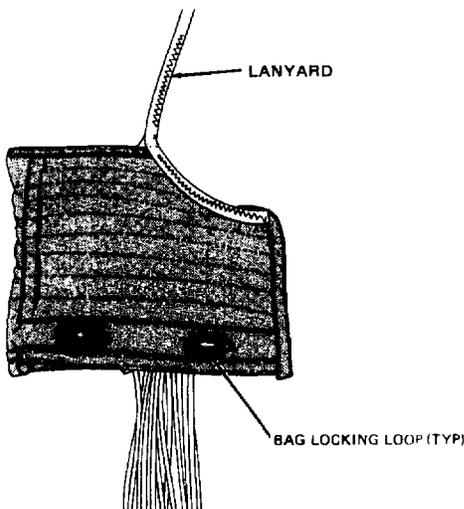
g. Compress canopy and insert into deployment bag. Smooth and adjust canopy to shape of deployment bag with least thickness (Figure 110).



6.2-5827A

**Figure 110. Compress Canopy and Insert into Deployment Bag**

h. Insert bag locking loops thru locking loop openings (Figure 111).



6.2-5827B

**Figure 111. Insert Bag Locking Loops**

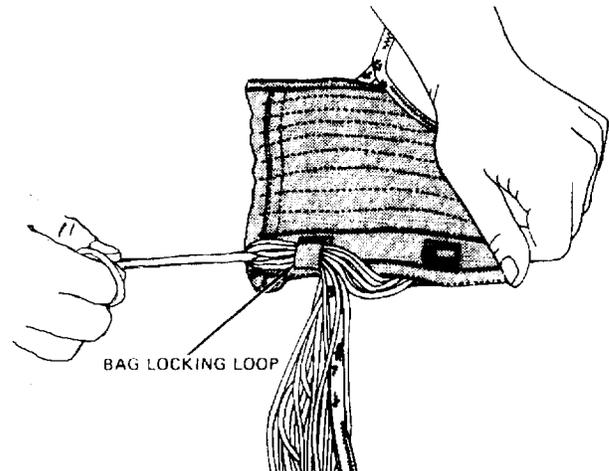
**CAUTION**

Rapid removal of draw cord can damage suspension lines.

**NOTE**

Beeswax may be lightly applied to draw cord for lubrication.

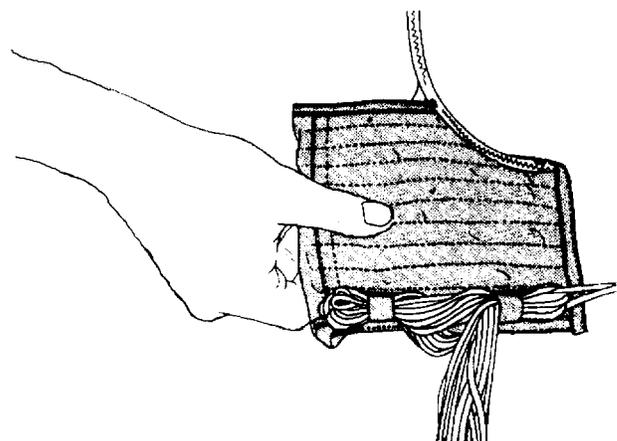
i. Stow first bight of suspension lines into deployment bag locking loop using a draw cord. Remove draw cord slowly (Figure 112).



6.2-5827C

**Figure 112. Stow First Bight of Suspension Lines**

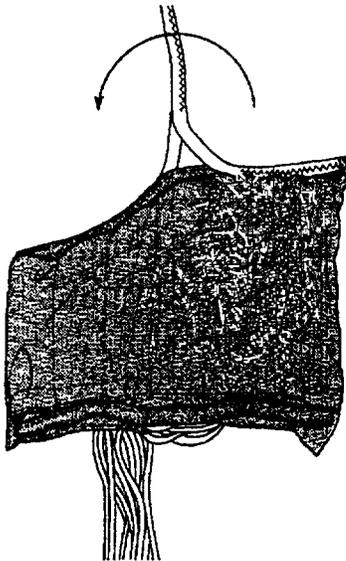
j. Stow second bight into remaining locking loop (Figure 113).



6.2-5827D

**Figure 113. Stow Second Bight**

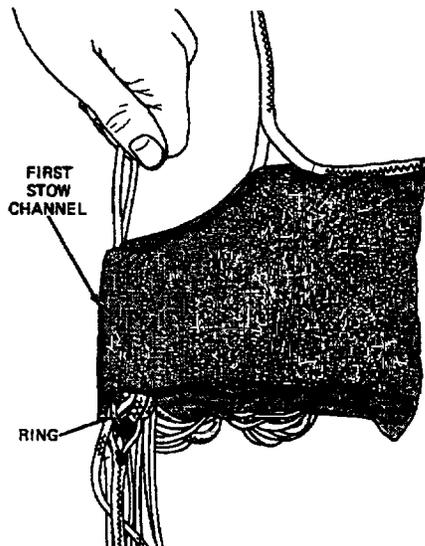
k. Rotate deployment bag over 180-degrees as shown to prepare for suspension line stowage (Figure 114).



1902-110

**Figure 114. Rotate Deployment Bag 180°**

l. Stow third bight of lines using draw cord into right hand (wide) short channel. Ring should rest at mouth of first stow channel (Figure 115).



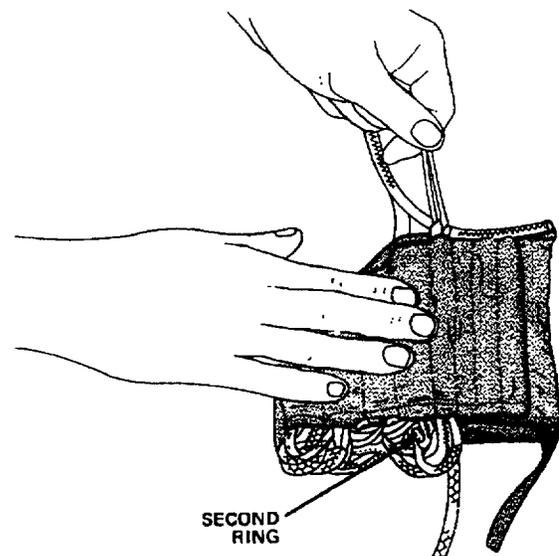
1902-111

**Figure 115. Stow Third Bight**

m. Remove draw cord. Bight loop must not extend beyond bottom edge of channels.

n. Complete stowing lines in wide channels; do not pull second ring into channel.

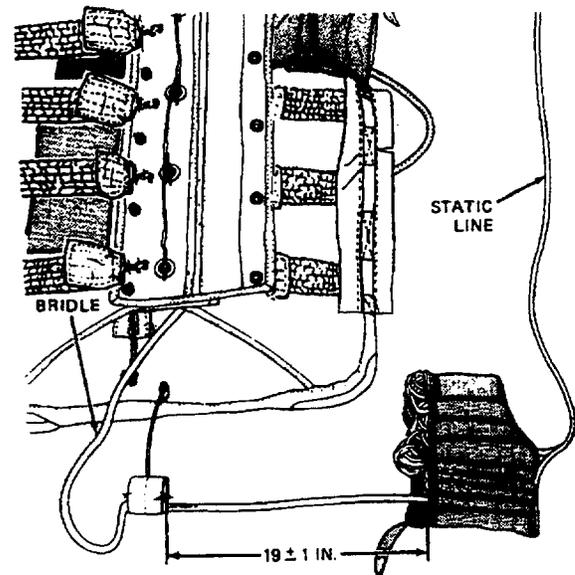
o. Stow EPC bridle in narrow channel on same side of bag. Bights do not extend beyond bottom of channel (Figure 116).



1902-112

**Figure 116. Stow EPC Bridle**

p. Complete stowage of bridle. Last stow is adjusted to allow  $19 \pm 1$ -in. of bridle to extend from deployment bag (Figure 117).



1902-113

**Figure 117. Complete Stowage of Bridle**

q. Rotate bag over 180-degrees, using draw cord, make first stow of static line into first stow channel of deployment bag on inside closest to locking bag. Stows will commence from tab end of deployment bag. Ring end of static line shall extend from edge of stow channel  $22 \pm 1$ -in. when stow is complete. Stowed bight shall not extend beyond edge of channel (Figure 118).

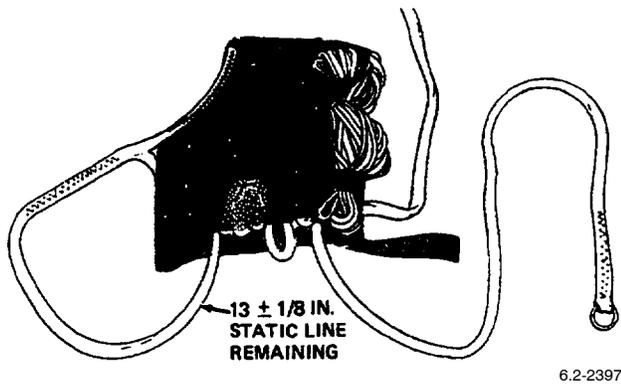


Figure 118. Rotate Bag over 180°

r. Continue stowage of static line into channels 2 and 3 with the fourth stow only, leaving 3/4-in. extending from edge of stow channel and edge of bag between channels 3 and 4.

s. Complete static line stowage leaving  $13 \pm 1/8$ -in. of static line remaining unstowed from attachment point to bag (Figure 118). (QA)

**39. STOWAGE OF DEPLOYMENT BAG IN EXTERNAL PILOT PARACHUTE POCKET.**

**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. Using flat of the hand, create a depression in external pilot parachute pocket. Shift internal mass of canopy with external force as required.

b. Insert deployment bag with locking loops facing up and outward from parachute container center line (Figure 119).

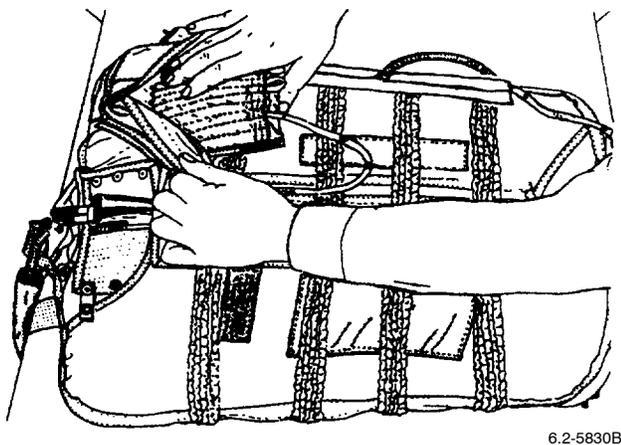


Figure 119. Insert Deployment Bag with Locking Loops Facing Up

**WARNING**

Ensure that remaining 13-in. of static line is not routed under deployment bag when bag is installed into EPC pocket.

c. Position remaining static line on top of, and toward center of container. Using a length of nylon cord, draw container pocket locking loop up thru the 3/4-in. static line loop formed during fourth stow (Figure 120). (QA)

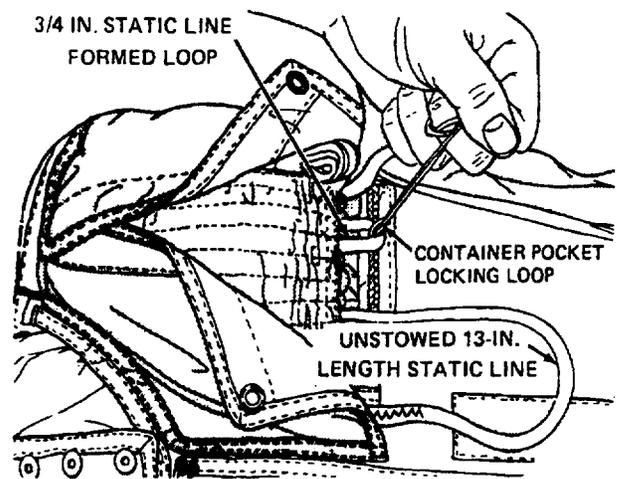


Figure 120. Position Remaining Static Line on Top

d. Continue drawing container pocket locking loop up and thru grommets installed on pocket closing flaps (Figure 121). (QA)

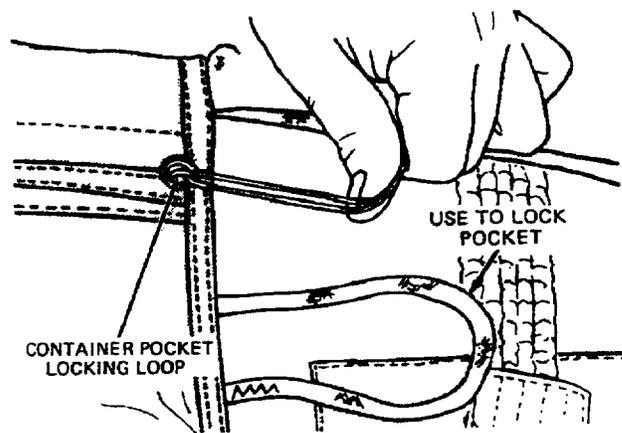


Figure 121. Continue to Draw Container Pocket Up

e. Lock pocket flaps by inserting and drawing the unstowed lanyard into container pocket locking loop, forming a bight of about 3/4-in. stow excess lanyard on top of deployment bag under left pocket flap (Figure 122). (QA)

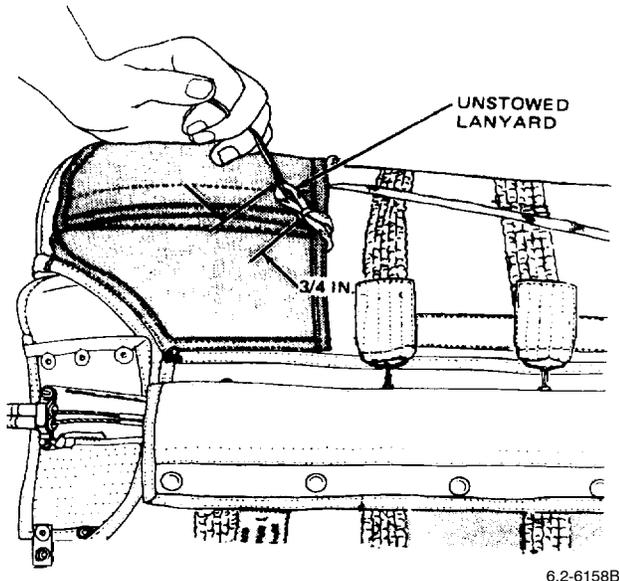


Figure 122. Lock Pocket Flaps

f. Attach remaining spring opening assembly to top right eyelet passing thru guide loop on side of EPC pocket (Figure 123).

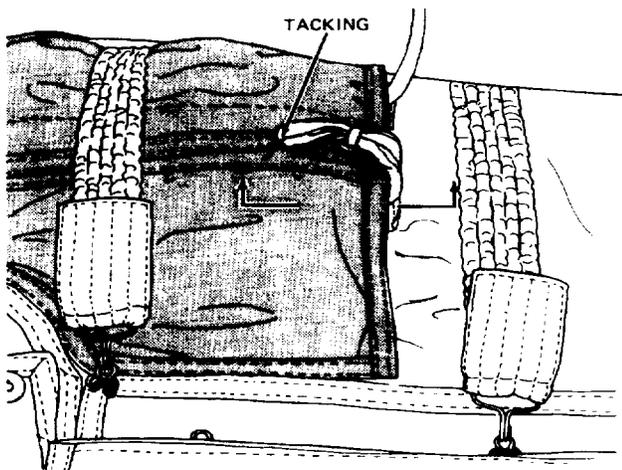
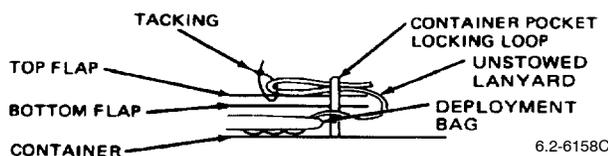


Figure 123. Attach Remaining Spring Opening Assembly



g. Tack lanyard loop to pocket edge with one turn of size E thread, single and waxed; tie off. (QA)

**40. STOWAGE OF EXTERNAL PILOT PARACHUTE BRIDLE LINE.**

**NOTE**

Tie off all tacking 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. Position bridle line in protector tunnel with deployment bag tab over bridle.

b. Fold bottom protector flap over deployment bag tab and bridle. Tack at each end with one turn of size E thread, single and waxed. Tacking shall pass thru bottom protector flap, deployment bag tab, and bridle, in that order; tie off (Figure 124).

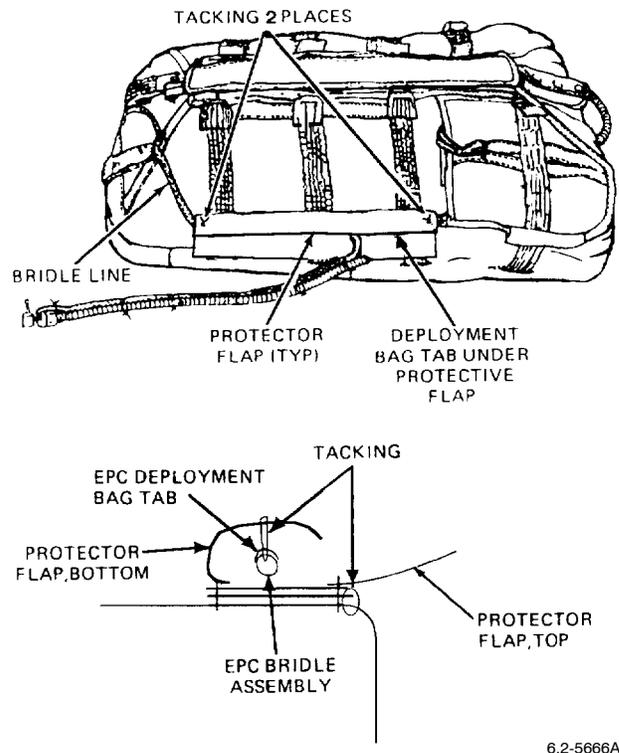
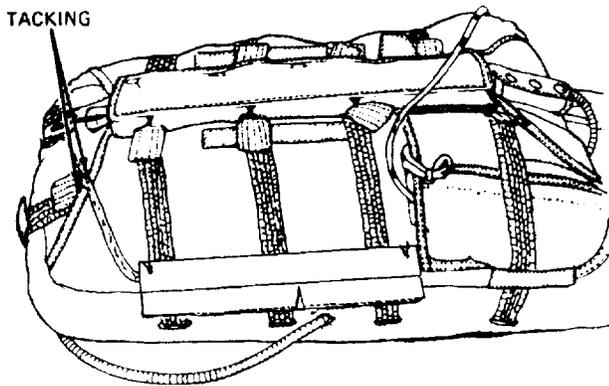


Figure 124. Lock Pocket Flaps by Inserting and Drawing the Unstowed Lanyard

c. Position shear link under side flap and secure by tacking release cable to flap. Pass one turn size E thread, single and waxed, around cable and thru flap; tie off. Tack bridle line to side flap with one turn size E thread, single and waxed; tie off (Figure 125).

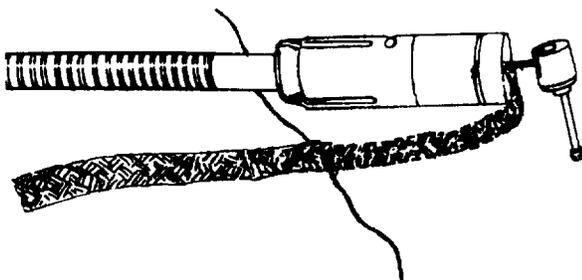


6.2-61598B

Figure 125. Position Shear Link Under Side Flap

**41. STOWAGE OF DEPLOYMENT BAG STATIC LINE.**

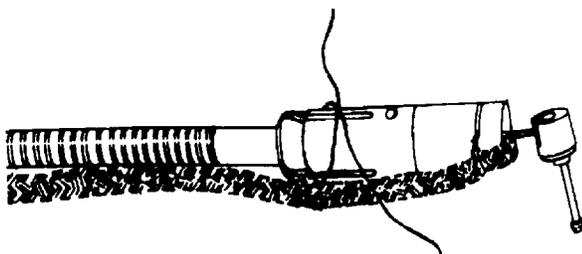
a. Route a 12-in. length size 6 nylon thread, single and waxed, around static line at concave groove in retainer clip. Tie off with a binder knot (Figure 126).



6.2-6138A

Figure 126. Route a 12-in. Length of Size 6 Thread Around Static Line

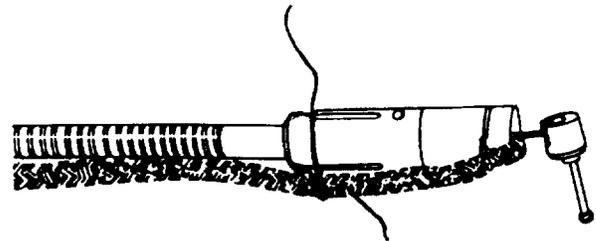
b. Route free ends of thread around opposite sides of retainer clip groove (Figure 127).



6.2-6138B

Figure 127. Route Free Ends of Thread Around Opposite Sides

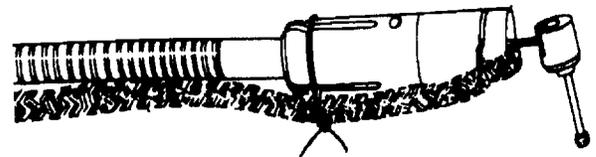
c. Bring thread ends back around static line pulling the static line snug against the retainer clip (Figure 128).



6.2-6138C

Figure 128. Pull Static Line Snug Around Retainer Clip

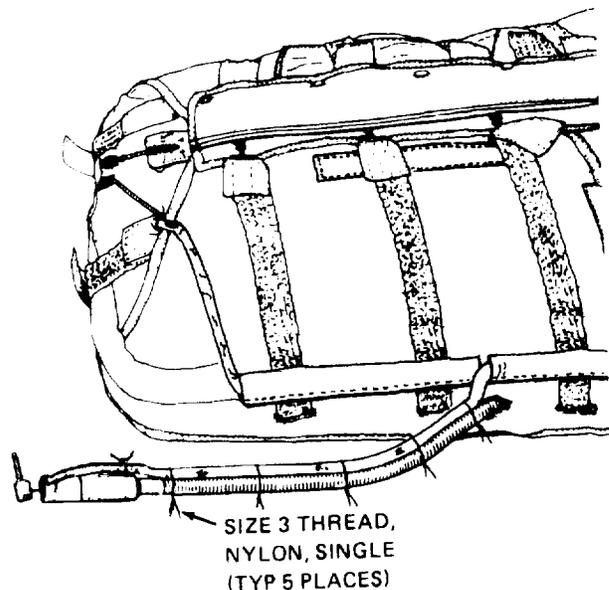
d. Secure ends; Tie off. Trim excess to 1/2-in (Figure 129).



6.2-6138D

Figure 129. Secure Ends

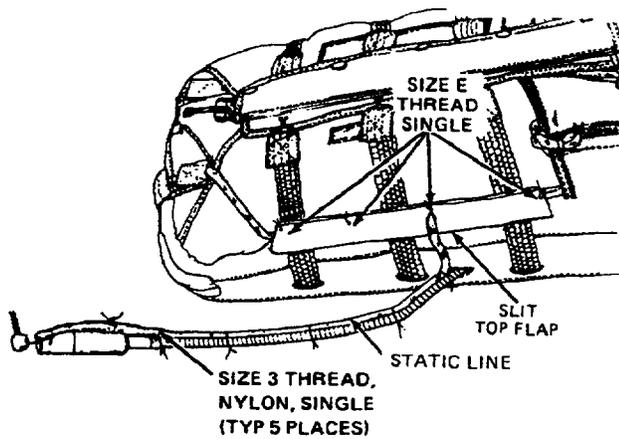
e. Route static line align arming cable housing. Tie static line to housing with ties placed in grooves of housing at five equally spaced points between end of housing ferrule and where housing exits container, one turn of size 3 thread, single and waxed; tie off. Ties will be made around static line, not thru it. Trim excess to 1/2-in. (Figure 130). (QA)



6.2-6160A

Figure 130. Route Static Line Align Cable Housing

f. Allowing no slack, route static line from last tie directly up to slit in top protector flap. Stow remaining static line in protective tunnel. Place top protector flap over bottom protector flap and tack protective tunnel closed in four places with one turn size E thread, single and waxed; Tie off. Upper tacking shall pass thru top flap, static line and bottom flap. Second tacking shall pass thru both slit edges of top flap, static line, and bottom flap. Third tacking shall centered between lower spring opening assembly from bottom, tacking shall pass thru top and bottom flaps only. Bottom tacking shall pass thru top and bottom flaps only (Figure 131). (QA)



6.2-6160B

**Figure 131. Allowing No Slack Route Static Line From Last Tie to Slit in Top Protector Flap**

**NOTE**

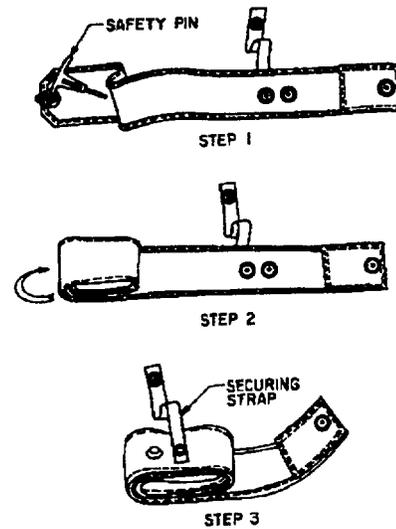
Tie off all tacking with a surgeon's knot topped with a square knot, followed with a binder knot per WP 002 00. Trim off excess leaving 1/2-in.

**42. STOWAGE OF SAFETY PIN FLAG.**

a. Position spreading gun safety pin flag on table with securing strap facing down and safety pin as shown (Figure 132).

b. Fold flag with safety pin tucked inside so securing strap faces up (Figure 132).

c. When flag is completely folded, pass securing strap around upper left side spring opening assembly and close snap fastener. Close flag snap fastener.



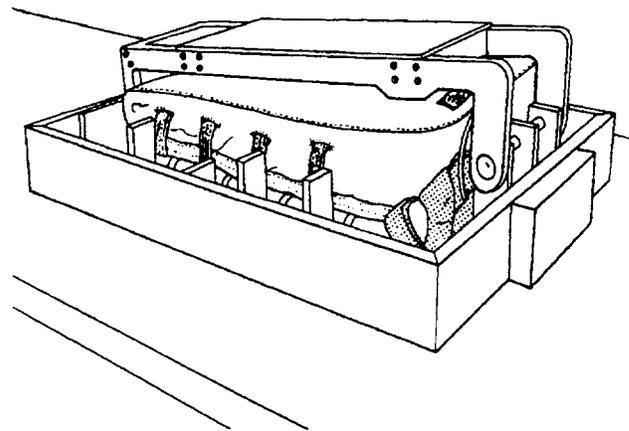
6.2-5835

**Figure 132. Stowage of Spreading Gun Safety Pin Flag**

**43. GO-NO-GO CHECK.**

a. Remove lumbar pad on assembly (PN 576AS100-35).

b. Check flatness of packed assembly using template (WP 004 00). If container fails to fit under template, adjustment of internal mass by external hand pressure is permissible (Figure 133). (QA)



6.2-5836

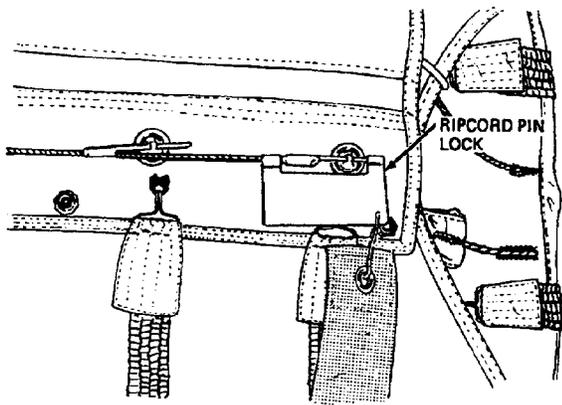
**Figure 133. Go-No-Go Check**

c. Reinstall lumbar pad on assembly (PN 576AS100-35).

**44. RIPCORD PIN PULL CHECK.**

a. Set spring scale to zero.

b. Insert ripcord pin lock on bottom ripcord pin (Figure 134).



6.2-6161

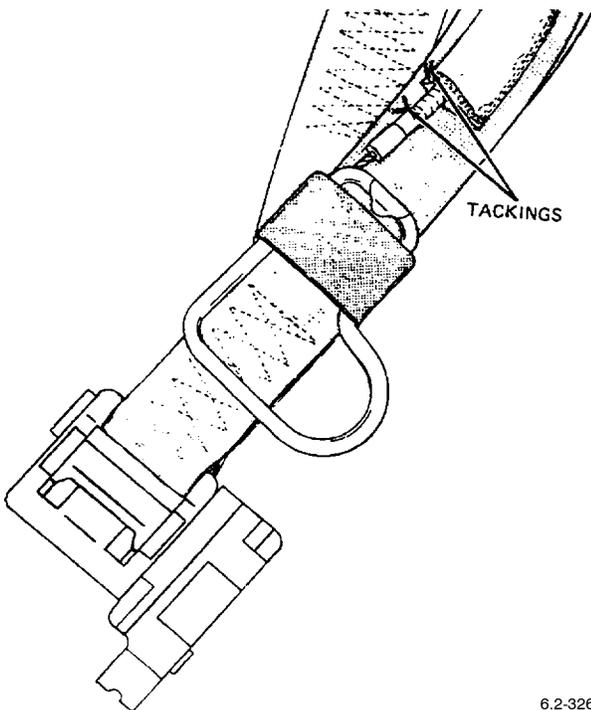
Figure 134. Ripcord Pin Pull Check

c. Ensure ripcord grip is fully seated in ripcord grip retainer. Attach spring scale to ripcord grip using nylon cord. Using a straight steady pull, remove grip from retainer. Force required shall be  $15 \pm 5$  lbs. (QA)

d. If pull force is not within limits, use pliers to adjust ripcord grip retainer. Ensure plier jaws are covered with protective material. After adjustment, repeat ripcord grip pull test.

e. Reset scale to zero. Apply a straight steady load on ripcord grip until initial movement of ripcord pins is observed. Maximum allowable force is 27 lbs. (QA)

f. Reinsert ripcord grip into retainer (Figure 135).



6.2-3268

Figure 135. Reinsert Ripcord Grip

**WARNING**

Ripcord pin lock must be removed.

g. Remove ripcord pin lock. (QA)

h. Reposition ripcord pins so they are centered in locking cones. (QA)

**45. ATTACHMENT OF RISER PROTECTION SHEATH.**

**NOTE**

Either sheath may be used for left or right riser assembly.

a. Fold the sheath over the set of two left riser webbing straps. Place the sheath between the shoulder restraint strap and rear riser and over the front riser strap with the fold on the inside and opening toward the outside of the risers route the restrictor strap thru the slit on top left of the sheath and flute containing the ripcord cable and housing. Fasten the four snaps.

b. Fold the sheath around the set of two right riser webbing straps. Place the sheath between the shoulder restraint strap and rear riser strap and fold over the front riser strap. With the fold on the inside and opening toward the outside of the risers route the restrictor strap thru the slit on the top right of the sheath. Fasten the four snaps.

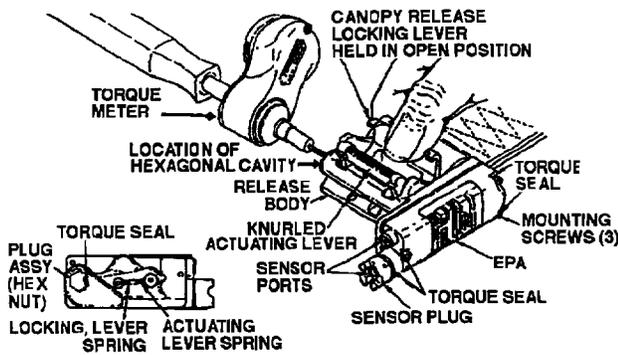
c. Adjust and ensure that the top of each sheath completely covers each set of risers jutting out from the container.

**46. 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 136). (QA)



6.2-1112

Figure 136. 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.



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 137), 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).

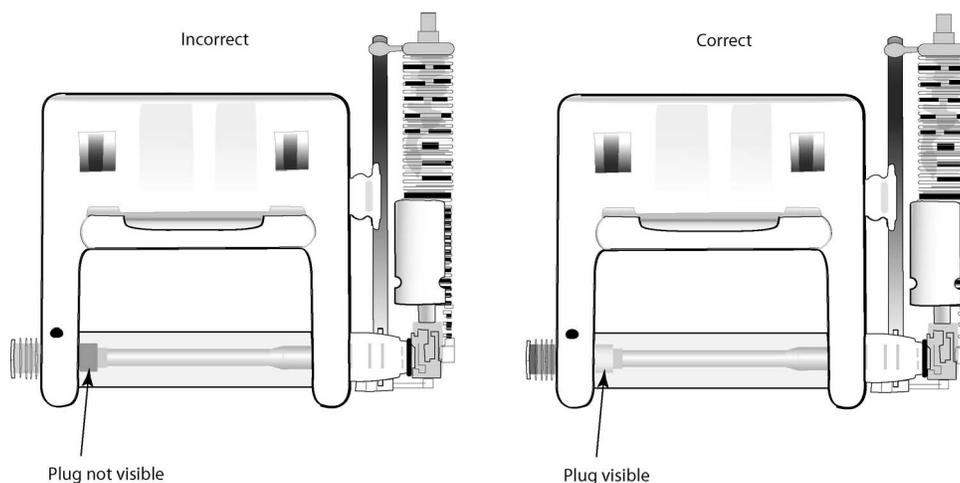


Figure 137. PHSRU X-Ray

**47. FINAL CHECKOUT.**

- a. Account for all packing tools and spreading gun safety pin. (QA)
- b. Examine packed parachute for general condition.
- c. Close ripcord pin and base plate 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-12 PERSONNEL PARACHUTE ASSEMBLY**

**PART NO. 576AS100-37 and 576AS100-38**

**List of Effective Work Package Pages**

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**Reference Material**

Common Repairs	WP 004 00
Intermediate and Depot Maintenance, Maintenance Procedures, Parachute Harness Sensing Release Units	WP 024 02
Intermediate and Depot Maintenance, Original Issue Rigging Procedures, Parachute Harness Sensing Release Units (PHSRU), MXU-746/P and MXU-747/P	WP 024 01
Intermediate and Depot Maintenance, Packing Procedures, NES-12 Personnel Parachute Assembly	WP 019 02
Organizational Repair Procedures, NES-12 Personnel Parachute Assembly	WP 019 01
Parachute Loft Requirements/Administration	WP 003 00
Support Equipment	WP 005 00

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**Record of Applicable Technical Directives**

<u>Type/No.</u>	<u>Date</u>	<u>Title and ECP No.</u>	<u>Date Inc.</u>	<u>Rescission Date</u>
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None

1. INTRODUCTION.

a. This work package (WP) contains instructions for the maintenance, repair, replacement and fabrication of various parachute part or subassemblies to ensure that proper 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. CANOPY ASSEMBLY REPAIRS.

3. REPLACEMENT OF CANOPY ASSEMBLY.

**NOTE**

For Double “L” Connector Link, refer to Paragraph 47 for disassembly, assembly, and inspection instructions.

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



Safety pin must be installed in spreading gun.

b. Remove spreading gun link yoke and plate assemblies.

c. Remove spreading gun per WP 004 00.

d. Remove connector links from riser loops and cross-connector straps; then reinstall yoke and plate assemblies.

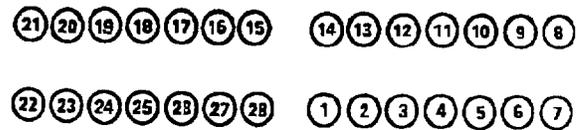
e. Dispose of canopy assembly per supply directives.

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

g. Attach tension strap hook to canopy vent lines.

h. Locate gore 28 (nameplate gore) and place it uppermost 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 lines 1 thru 14 on helper’s side (Figure 1). Grasping each group of lines, walk from skirt hem to connector links removing any dips and twists between two groups.



6.2-5318

**Figure 1. 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 1).

k. Apply tension.

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

m. Pull vent collar 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 1). 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 a sufficient height to ensure line is free of dips and twists. Continue this procedure with lines 13 thru 1 (Figure 1). 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  $30 \pm 1/2$ -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 019 02.

r. Record any damage on canopy damage chart WP003 00.

s. Reattach pilot parachute, internal bridle line and spreading gun retainer cord.

t. Lay out risers and cross-connector straps on packing table.

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

x. Insert bottom connector links thru loop in each cross-connector strap and then thru loops in bottom risers.



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

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

z. Reattach yoke and plate assemblies to bottom connector links ensuring knurled plate faces up and screwheads face outboard.

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

ab. Insert top connector links thru loop in each cross-connector strap and then thru loops in top risers.

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

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

ae. Perform suspension line continuity check as in steps o and p.

**NOTE**

Top right connector link screwhead will be torqued after attachment of spreading gun firing lanyard.

af. Tighten screws on top left 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. Reattach spreading gun per WP 004 00.

ai. Mark date placed in service on canopy assembly per WP 004 00. Mark canopy serial number and contract number on assembly label. Make required entries on Parachute Record (OPNAV 4790/101). (QA)

aj. Fabricate four-line release lanyards per WP 004 00.

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

al. Rig four-line lease lanyards per WP 004 00.

**4. REMOVAL AND INSTALLATION OF SUSPENSION LINES FOR PROPER SEQUENCING.**

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 47 for disassembly, assembly, and inspection instructions.

a. Remove connector link yoke and plate assembly.

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



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

c. Sequence lines on connector link bar per (Figure 1).

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

e. Check suspension line continuity (Figure 1).

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

g. Apply torque seal to screwhead.

**5. CONTAINER ASSEMBLY REPAIRS.**

**6. REPLACEMENT OF CLAMP BASE ASSEMBLY AND/OR LOCKING CONE ON CONTAINER TOP FLAP.**

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. Cut and remove stitching retaining base assembly and locking cone from top flap. Remove base assembly and locking cone.

b. If base assembly is to be replaced, remove clamp and screws and retain for reinstallation. If locking cone is to be replaced, leave clamp with ripcord housing/power cable housing attached to base assembly.

c. Using a sufficient length of size 6 thread, doubled and waxed, to complete repair, tie a binder knot 3 to 4-in. from end of thread for tie-off; when stitching is complete.

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

e. Start handstitching from inside of container at widest end of base assembly, using a running stitch thru each hole in the base assembly and applicable holes in locking cone. Stitch to last hole in sequence; then stitch back around base assembly to starting hole. Tie off; trim ends 1/2-in. (QA)

**7. FABRICATION OF CONTAINER BASE PLATE PROTECTOR FLAP EXTERNAL TAB.**

Support Equipment Required

Part Number	Nomenclature
—	Hot Knife

Materials Required

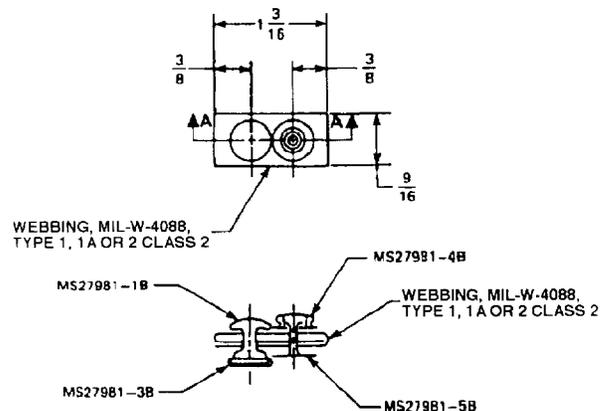
Specification or Part Number	Nomenclature
PIA-W-4088	Webbing, Nylon, Type I, Class I, IA or 2
MS27981-1B	Snap, Fastener, Button
MS27981-3B	Snap, Fastener, Socket
MS27981-4B	Snap, Fastener, Stud
MS27981-5B	Snap, Fastener, Eyelet
V-T-295	Thread, Nylon, Size FF, Type I or II, Class A

**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. Using a hot knife, cut a 3 3/4-in. length of webbing.

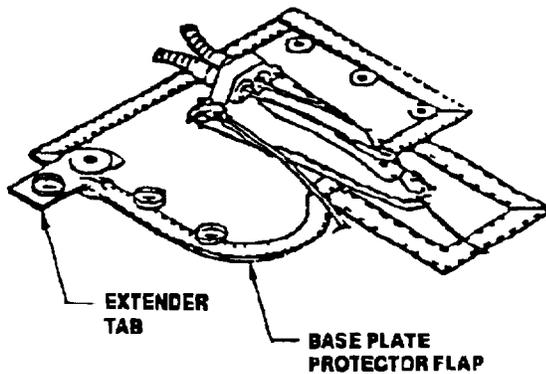
b. Fold the webbing and install the snap fasteners, to construct the extender tab (Figure 2).



6.2-7197

**Figure 2. Manufacture of Extender Tab**

c. Snap the extender tab onto the top snap fastener of the ripcord base plate protector flap. Lock extender tab to closure flap with one turn of size FF thread, doubled and waxed; tie off (Figure 3).



6.2-7190

Figure 3. Installation of Extender Tab

**8. REPLACEMENT OF CONTAINER.**

Support Equipment Required

Part Number	Nomenclature
—	Hot Knife

Materials Required

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

- a. If installed, remove container protective cover.
- b. If serviceable, remove EPC release from container per Paragraph 11.
- c. Inspect replacement container per WP 004 00.

**WARNING**

Do not allow hot nylon drippings or hot ends of nylon webbing to come in contact with skin or clothing.

d. Using a hot knife, make a 3/4-in. slit in top flap (perpendicular to selvage edge) of protector tunnel; cut horizontally opposite buttonhole located on side of container.

e. Using a hot knife, cut open the buttonhole on right side of container for the ripcord release arming cable housing.

f. Install EPC release assembly in container per Paragraph 12.

g. Install container protective cover per Paragraph 10.

h. Mark date placed in service on identification and service life label and complete assembly label marking. Make required entries on Parachute Record (OPNAV 4790/101).

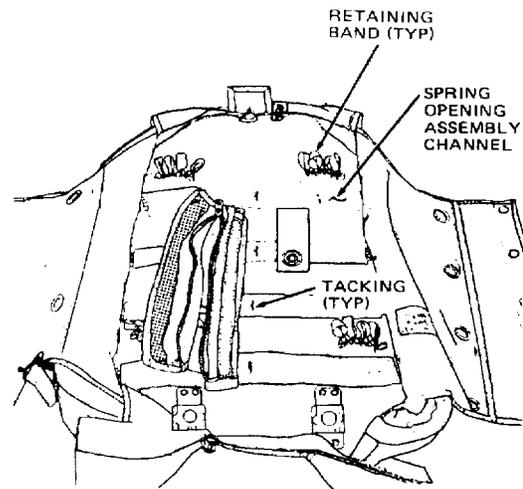
**9. INSTALLATION OF SUSPENSION LINE RETAINING BANDS.**

**CAUTION**

Do not use old retaining rubber bands. Only new retaining bands shall be used.

a. Ensure new retaining bands are used. (QA)

b. Install new suspension line retaining rubber bands (using lark's head knot) on eight inboard retaining band loops located on helper's side of packing table, and on eight inboard retaining loops located on packer's side of table (Figure 4).



6.2-5937

Figure 4. Installation of Suspension Line Retaining Bands

**10. REPLACEMENT OF CONTAINER COVER.**

Materials Required

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

**NOTE**

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

- a. Remove old protective cover.
- b. Pull protective cover over container. Pass spring opening assemblies thru respective slots.
- c. Pass kit retention straps thru flaps. Close flaps.
- d. Pass ripcord release power cable thru slot in top of cover
- e. Secure protective cover by tacking on the four corners and then whipstitching around outer edge of cover. Whip-stitching stitch shall be 1-in. apart, stitch with size of 6 thread, single and waxed; tie off. (QA)

**11. REMOVAL OF SERVICEABLE EPC RELEASE.**

**NOTE**

Serviceable EPC releases shall be removed from non-RFI containers and retained for installation in replacement containers.

- a. Pull bottom flap back.
- b. Open slide fastener which connects inside panel to expose EPC release assembly.
- c. Remove four nuts, washers, and screws which secure EPC release assembly in place to container.
- d. Remove EPC release from container and inspect outside surface for dirt, cracks, and unbroken torque seal on roundhead screw. If necessary, reapply torque seal to roundhead screw.
- e. Tag EPC release RFI and store in a plastic bag.

**NOTE**

If EPC is found unserviceable after inspection, it shall be scrapped.

**12. REPLACEMENT OF EPC RELEASE.**

**Materials Required**

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

- a. Pull bottom flap back.
- b. Open slide fastener which connects inside panel to expose EPC release assembly mounting area.
- c. Insert EPC release assembly into container, against installed mounting bracket. Part number will be visible (upward) for proper orientation (Figures 5 and 6).
- d. Insert and position retainer plate between EPC release assembly and container. If properly positioned, wide tab of retainer plate will be in line with cable release button hole in container.
- e. Position plate on outside of container using a drift or small screwdriver to maintain hole alignment.
- f. Insert two mounting screws from outside, thru two top holes, container frame, retainer plate, EPC release assembly, and mounting bracket. Place washers onto these screws and attach nuts finger tight.
- g. Insert two remaining mounting screws from outside thru two remaining lower holes in outside plate, container frame, EPC release assembly and mounting bracket. Place washers onto these two screws and attach nuts finger tight.



Overtorque can cause cracking of the container frame.

- h. Tighten nuts snugly to a minimum of two threads showing. (QA)
- i. Apply torque seal to mounting nuts.
- j. Ensure spring opening assemblies are properly routed out thru container openings.
- k. Close slide fastener. (QA)

**13. MODIFICATION OF EXTERNAL PILOT CHUTE (EPC) RELEASE MECHANISM CAM ASSEMBLY.**

**Materials Required**

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

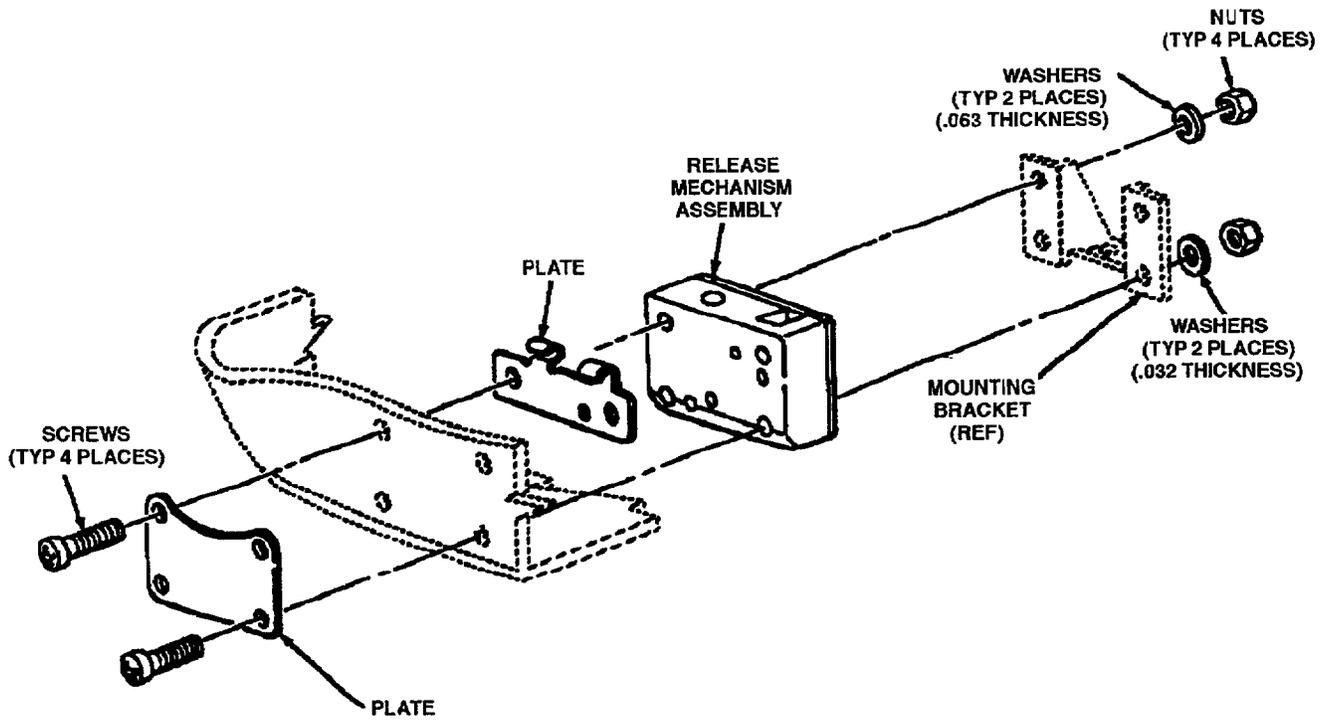


Figure 5. External Pilot Parachute Release Assembly, Exploded View

6.2-5681A

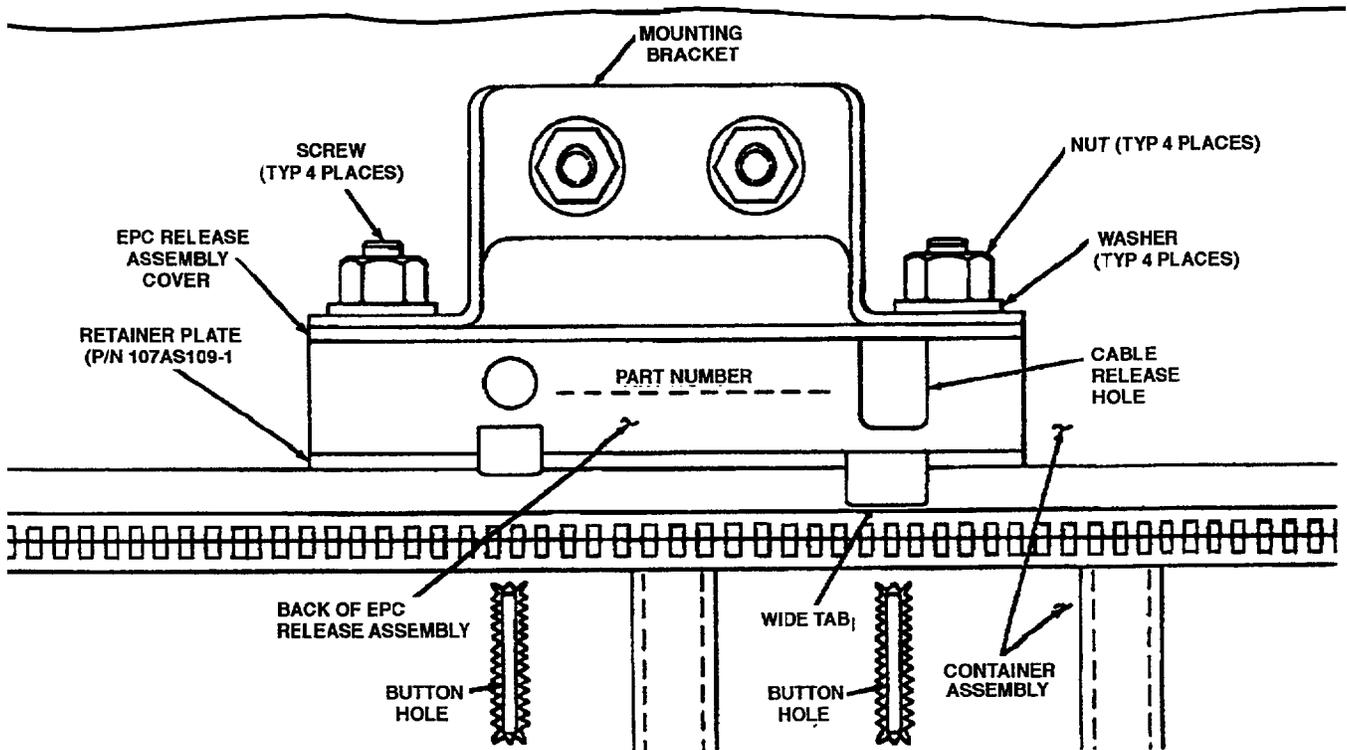


Figure 6. View of EPC Release Assembly Inside Parachute Container

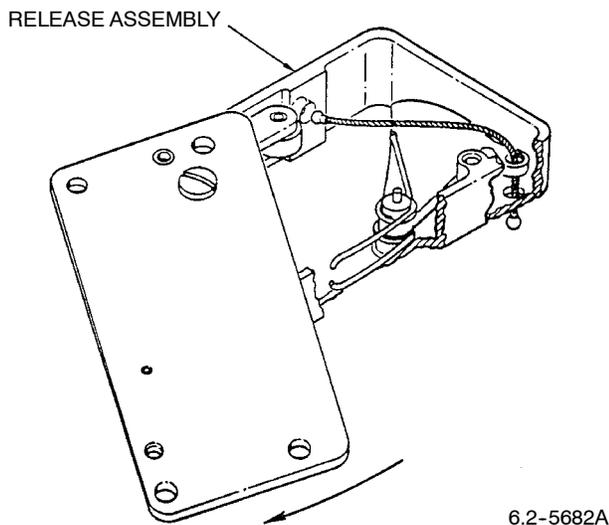
6.2-5682A

- a. Pull bottom flap back.
- b. Open slide fastener which connects inside panel and expose EPC release assembly.
- c. Remove four nuts, washers and screws holding EPC release assembly to container. Retain attaching hardware (Figure 5).
- d. Remove EPC release from container. Inspect outside for dirt, cracks and unbroken torque seal on roundhead screw. (QA)

**NOTE**

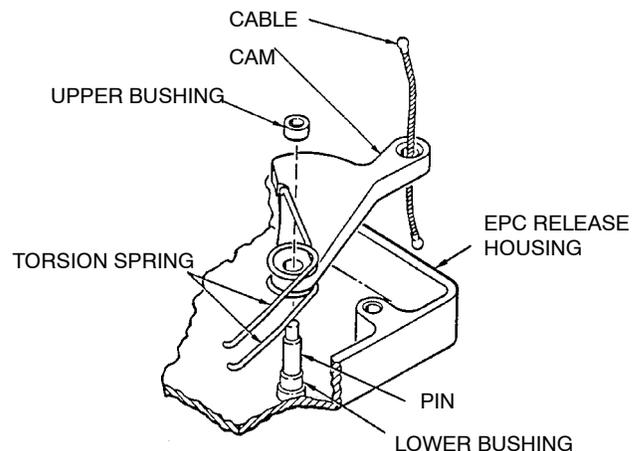
If EPC release is unserviceable, scrap.

- e. Remove the two Phillips-head screws from the EPC release assembly.
- f. Loosen the roundhead screw approximately 1 1/2 turns. Do not remove screw.
- g. Pivot EPC release assembly cover clockwise to expose internal components (Figure 7).



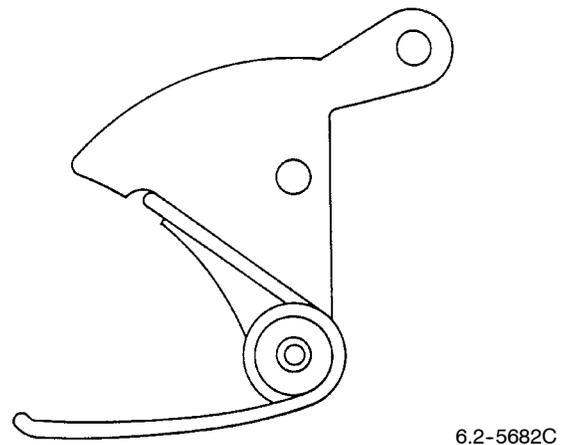
**Figure 7. Pivot EPC Release Assembly**

- h. Remove upper bushing from pin. Do not lose lower bushing on the pin (Figure 8).
- i. Remove cable assembly from cam assembly (Figure 8). (QA)



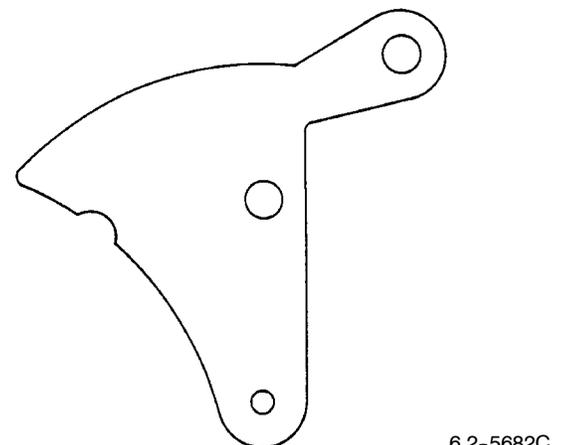
**Figure 8. Remove Upper Bushing From Pin**

- j. Remove torsion spring and cam (Figure 9).



**Figure 9. Remove Torsion Spring**

- k. Remove torsion spring from cam (Figure 10).

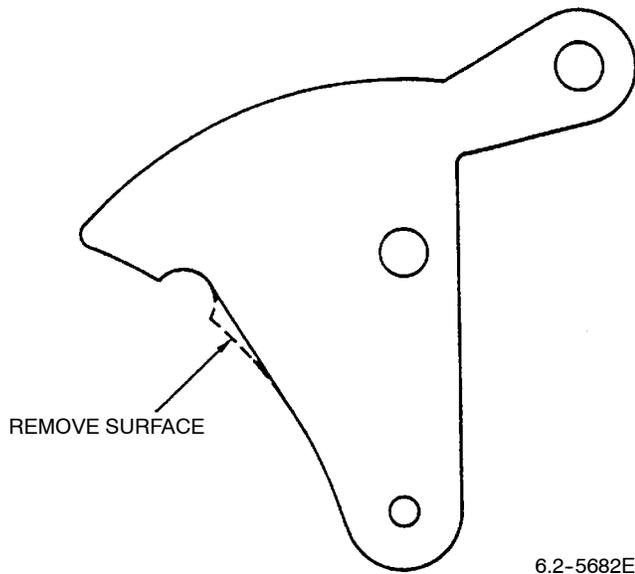


**Figure 10. Remove Torsion Spring from Cam**

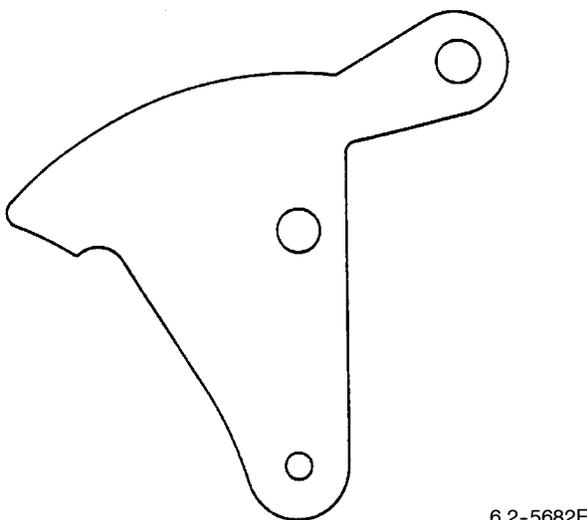
**NOTE**

The following step should be accomplished in a machine shop.

1. Remove the surface area per Figure 11, to conform with Figure 12. Smooth all rough edges. (QA)

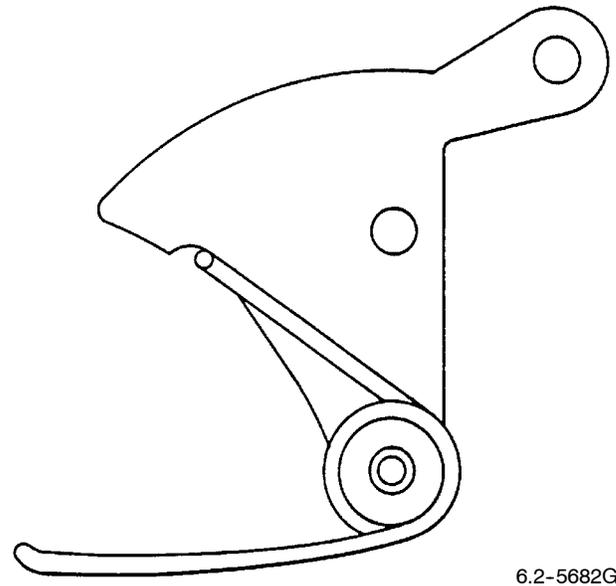


**Figure 11. Remove Surface Area**



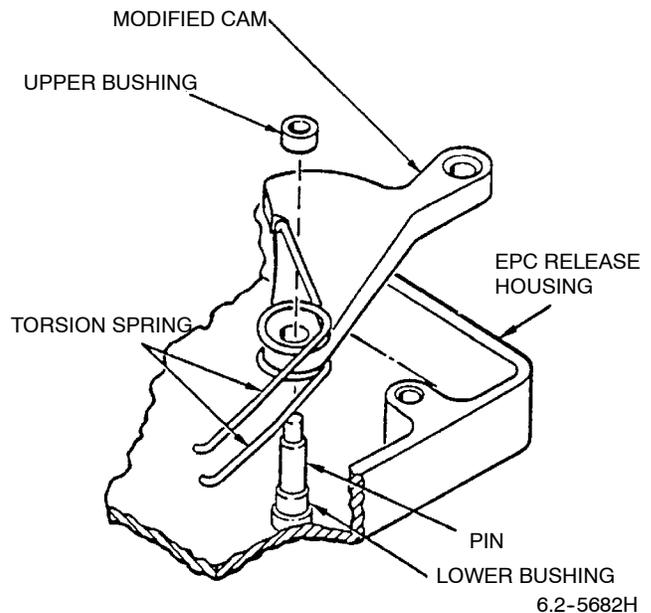
**Figure 12. Remove to Conform With**

- m. Position the modified cam between the two coils of the torsion spring (Figure 13).



**Figure 13. Positioning of Modified Cam**

- n. Place the cam assembly on the pin with the torsion spring (Figure 14).



**Figure 14. Placement of Cam on the Pin**

- o. Place upper bushing on pin.
- p. Pass the small end of the cable assembly thru the lower right-hand hole in the EPC release assembly housing and thru the hole in the lever arm of the cam assembly. Pass balance of cable thru opening on back of housing (Figure 15). (QA)

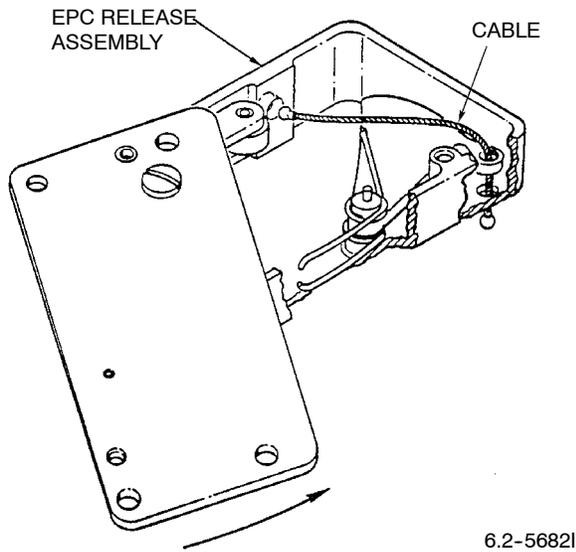


Figure 15. Pass Small End of Cable thru Lower Right Hand Hole

- q. Pivot cover counter-clockwise to closed position.
- r. Install the Phillips-head screws (2) and tighten.
- s. Torque the round-head screw to  $8 \pm 1$  in-lbs. Use torque screw driver. (QA)
- t. Apply torque seal to round-head screw slot.
- u. Mark out existing part number on EPC release assembly and ink stamp new part number on top of release assembly. (QA)
- v. Reidentify container, and parachute assembly (if not previously accomplished).
- w. Make required entries on Parachute Record (OPNAV 4790/101).

**14. REPLACEMENT OF SPRING OPENING ASSEMBLY TACKINGS.**

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 loose or broken tacking.
- b. With hooks facing up, center spring opening assembly in container channel, leaving it in a relaxed state.
- c. Tack spring opening assembly to channel in center of container with one turn of size 6 thread, doubled and waxed; tie off (Figure 16).

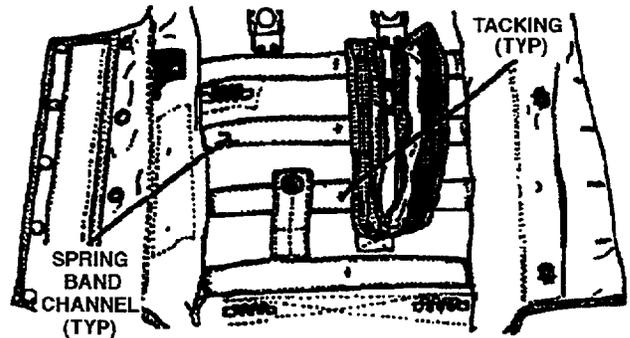


Figure 16. Replacement of Spring Opening Assembly Tackings

**15. REPLACEMENT OF SIDE FLAP SPRING OPENING ASSEMBLY.**

Materials Required

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

**NOTE**

Parachute assembly container must be open with canopy and lines removed.

- a. Measure length of replacement spring opening assembly. Required length is  $21 \frac{3}{8} \pm 1/4$ -in. when measured with no tension applied from end of one hook to end of other hook.
- b. Inspect spring opening assembly per WP 019 02.
- c. Completely remove tacking.
- d. Attach replacement spring opening assembly, with hook facing up, to hook of defective spring, and at the same time, pull replacement spring assembly thru channel.

e. Center replacement spring opening assembly in container leaving it in a relaxed state.

f. Tack replacement spring opening assembly per Paragraph 14. (QA)

**16. REPLACEMENT OF BOTTOM FLAP SPRING OPENING ASSEMBLY.**

a. Measure length of replacement spring opening assembly. Required length is  $4 \frac{7}{8} \pm 1/8$ -in. when measured with no tension applied from end of one hook to end of other hook.

b. Inspect spring opening assembly per WP 019 02.

c. Remove defective spring opening assembly.

d. Attach hook of replacement spring opening assembly opposite end tab to eye on container frame with hook facing down. Crimp hook to eye.

e. Attach remaining hook to corresponding eye on container end flap at proper point during packing.

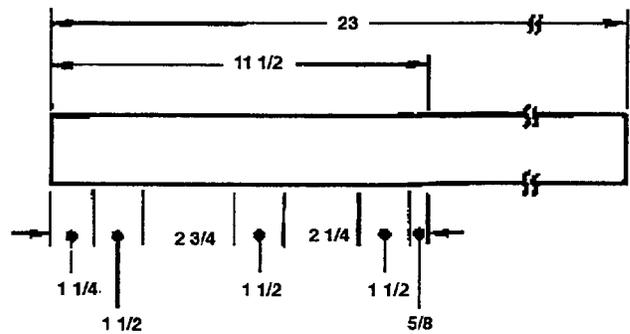
**17. FABRICATION OF EPC BRIDLE PROTECTOR FLAP.**

Materials Required

Specification or Part Number	Nomenclature
PIA-T-5038	Tape, Nylon Reinforcing, Type IV, Class I or IA
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

a. Remove parachute canopy from container during repack of the parachute assembly, remove the top and bottom external pilot chute (EPC) bridle protector flaps by carefully removing the old stitching attaching the flaps to the container. Using a hot knife, cut two 11 1/2-in. and one 23-in. length of nylon tape.

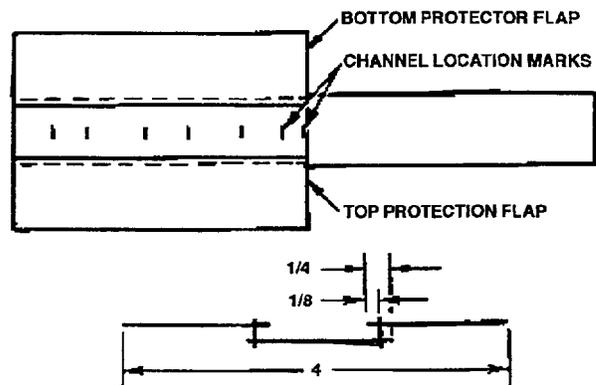
b. Mark the locations from the spring opening band channels on the 23-in. length of tape. Sew the two 11 1/2-in. lengths to the 23-in. length with size E thread (Figure 17).



6.2-7174

Figure 17. Mark Locations for Spring Opening Band Channels

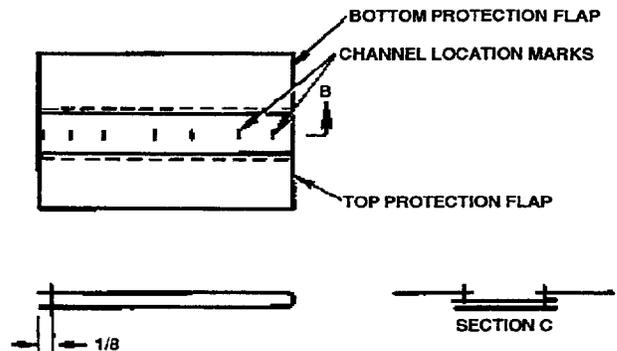
c. Fold the free end of the 23-in. tape back under itself so that it is even with the opposite end. Sew the ends together with size E thread (Figure 18).



6.2-7175

Figure 18. Fold Free End

d. Set down the tape between the channels in a box X stitch pattern with size E thread (Figure 19).



6.2-7176

Figure 19. Set Down Tape Between Channels

e. Using a hot knife, cut a 1 1/4-in. slit 3 1/4-in. from the right-hand edge of the top protector flap to route the EPC static line (Figure 20).

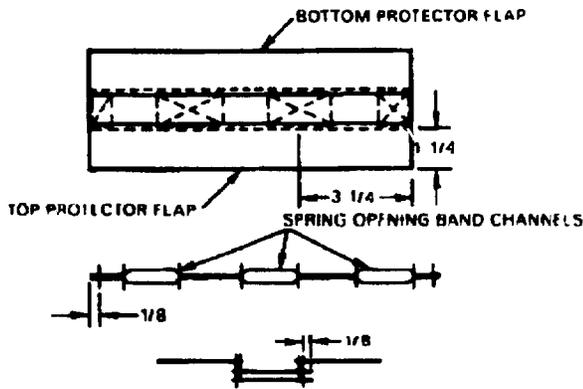


Figure 20. Using a Hot Knife Cut Slit 6.2-7177

f. Install new EPC bridle protector flap 3/16-in. below EPC pocket by routing spring opening bands thru the channels on bottom of protector flap. Start stitching with an overhand knot, secure protector flap in place by sewing the outer edge of the flap between the channels and the end of the container binding with size FF thread, single and waxed. Using a whip stitch pattern, tie off with an overhand knot (Figure 21). (QA)

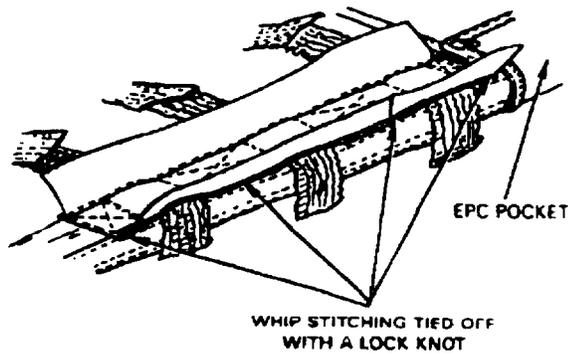
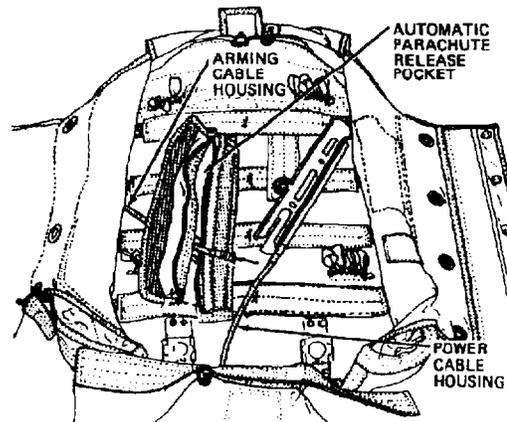


Figure 21. Install New EPC 6.2-7178

**18. INSTALLATION OF AUTOMATIC PARACHUTE RIPCORD RELEASE POWER AND ARMING CABLE HOUSING IN CONTAINER.**

a. Route end of arming cable housing thru housing port located in right side of release pocket and thru buttonhole located on right side of container.

b. Insert power cable housing thru buttonhole in top end of container (Figure 22).



6.2-5939

Figure 22. Installation of Automatic Parachute Ripcord Release Power and Arming Cable Housings in container

**CAUTION**

Do not use old retaining rubber bands. Only new retaining rubber bands shall be used.

c. Ensure new retaining rubber bands are used. (QA)

**19. CROSS-CONNECTOR STRAPS.**

**20. GENERAL.**

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

**21. REPLACEMENT OF CROSS-CONNECTOR STRAPS.**

Support Equipment Required

Part Number	Nomenclature
—	Torque Screwdriver

Materials Required

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

**NOTE**

For Double "L" Connector Link, refer to Paragraph 47 for disassembly, assembly, and inspection instructions.

- a. Remove connector link yoke and plate assemblies.
- b. Remove connector links from riser loops and then remove connector straps.
- c. Inspect replacement cross-connector straps for contamination, cuts, fraying, burns, loose or broken stitching and proper length  $16 \pm 1/4$ -in.
- d. Insert connector links thru loop in each end of connector strap and then thru loop in riser.
- e. Reattach yoke and plate assemblies to connector links ensuring knurled plate faces up and screwheads face outboard.

**NOTE**

Top right connector link will be torqued after attachment of spreading gun firing lanyard.

- f. Tighten screws on top left and bottom connector links to a torque value of 20 to 25 in-lbs. (QA)
- g. Apply torque seal to each torqued connector link screwhead.
- h. Mark date placed in service on identification and service life label. Make required entries on Parachute Record (OPNAV 4790/101). (QA)

**22. DEPLOYMENT BAG ASSEMBLY REPAIRS.**

- a. Repair of the deployment bag assembly is limited to the following:
  - (1) Cleaning of contaminated areas.
  - (2) Repair of loose or broken stitching.
- b. Replace deployment bag assembly for any of the following:
  - (1) Expiration of service/total life.
  - (2) Damaged reefing ring.
  - (3) Cut or frayed static line and/or deployment bag.

**23. REPLACEMENT OF DEPLOYMENT BAG ASSEMBLY.**

Support Equipment Required

Part Number	Nomenclature
DPP-50	Scale, Spring

- a. Inspect replacement deployment bag assembly per WP 019 02.
- b. Measure length of static line. Place static line under 5 lbs. tension and measure length from edge of bag at attachment points to end of static line. Length shall be  $110 \pm 4$ -in.
- c. Mark date placed in service on deployment bag. Make proper entries on Parachute Record (OPNAV 4790/101).
- d. Replace deployment bag at appropriate point in packing procedures.

**24. REPAIR OF DEPLOYMENT BAG ASSEMBLY LOOSE OR BROKEN STITCHING.**

Materials Required

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

- a. Trim off any loose thread ends.
- b. Machine stitch over loose or broken stitching on original stitch line using type 301, type 308 stitching as applicable per WP 004 00. New stitch shall begin and extend 3/4-in. beyond affected area.

**25. EXTERNAL PILOT PARACHUTE (EPC) REPAIRS AND FABRICATIONS.**

- a. Repair of the external pilot parachute is limited to the following:
  - (1) Cleaning contaminated areas.
  - (2) Replacement of loose or broken tackings.
  - (3) Replacement of shear link chafing webbing.

b. Replace the external pilot parachute for any of the following:

- (1) Service/total life has expired per WP 019 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) Damaged shear link/cable.
- (4) Damaged release pin.

**26. REPLACEMENT OF EPC TRI-MODE STAGING TACKINGS.**

**Materials Required**

Specification or Part Number	Nomenclature
V-T-295	Thread, Nylon, Size A, 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. Tacking A and A-A (Figure 23). Pass one turn of size A thread, single and waxed, thru loops of four suspension lines and tie loops together.

c. Tacking B and B-B (Figure 23). Pass one turn of size A thread, single and waxed, thru loops of four suspension lines and tie loops together.

d. Tackings C (Figure 23). Lay bridle cords together with no slack. Pass one turn of size A thread, single and waxed, thru center of cords and tie off.

e. Tackings D (Figure 23). Loops formed when making per step d, above tackings shall be stabilized by tacking end of each loop to adjacent bridle with one turn of size A thread, single and waxed; tie off.

**27. FABRICATION AND INSTALLATION OF SHEAR LINK CHAFING WEBBING.**

**Support Equipment Required**

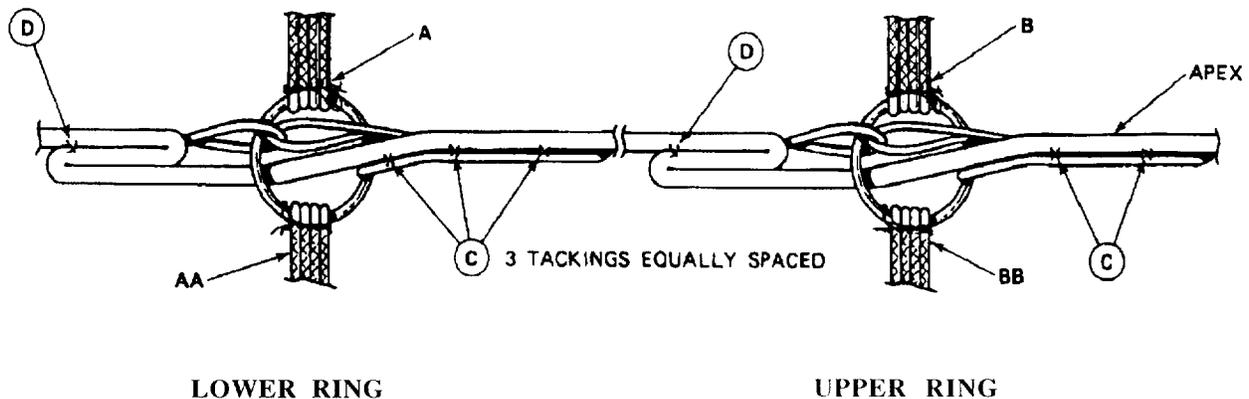
Part Number	Nomenclature
—	Aw1

**Materials Required**

Specification or Part Number	Nomenclature
V-T-295	Thread, Nylon, Size 6, Type I or II, Class A
PIA-W-4088	Webbing, Nylon, Type VI, Class 1,1A or 2 1 23/32-in. Width

**NOTE**

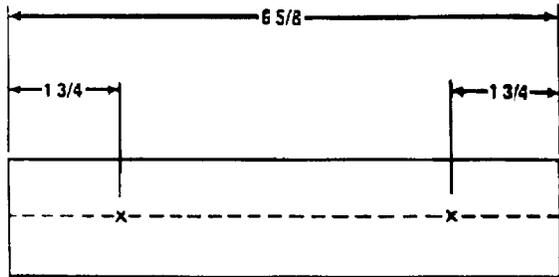
Tie off all tackings with a surgeon's knot topped with a square knot, followed with a binder knot per WP 002 00. Trim off excess leaving 1/2-in.



**Figure 23. EPC Trimode Staging Tackings Replacement**

a. Cut one 6 5/8-in. piece of Type VI nylon webbing. Sear ends to prevent raveling.

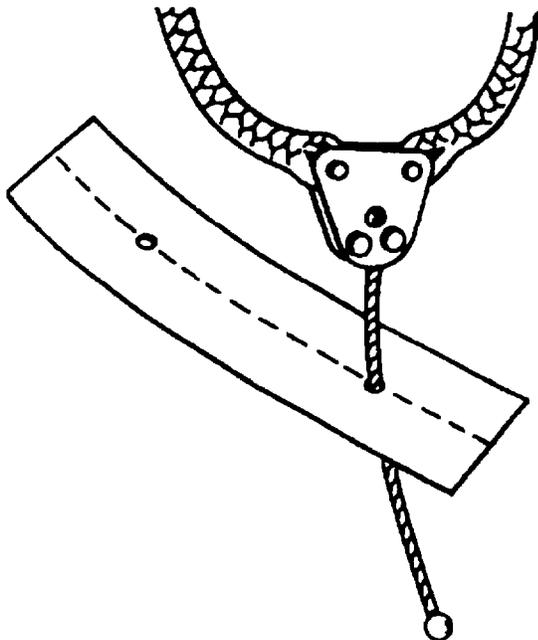
b. Measure and mark webbing 1 3/4-in. from each end as shown. Using an awl, separate weave of webbing at markings until a hole of about 3/16-in. is formed (Figure 24).



6.2-5697A

Figure 24. Measure and Mark Webbing

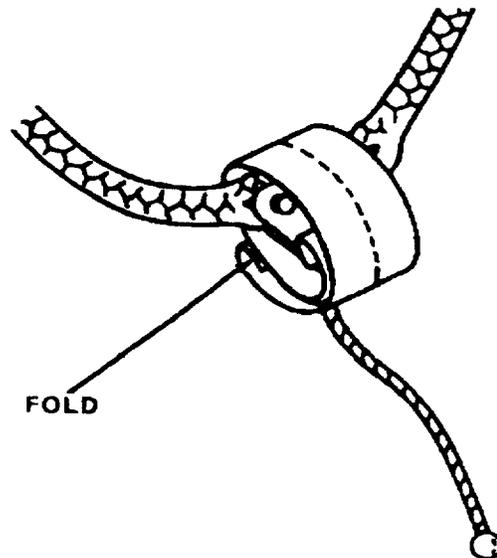
c. Route shear cable thru one of holes formed in steps b (Figure 25).



6.2-5697B

Figure 25. Route Shear Cable

d. Form fold on end of webbing and position on link to fill void between upper and lower rivets. Route free end of webbing between bridles and around shear link. Route shear cable thru remaining hole of webbing formed in per step b (Figure 26).

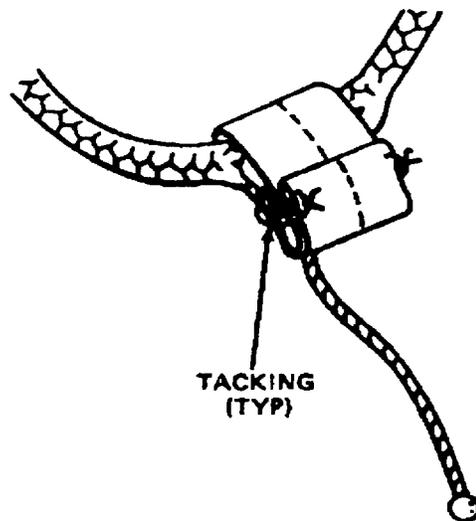


6.2-5697C

Figure 26. Form Fold End of Webbing

e. Pull cable taut; continue to wrap webbing around link and form fold on end of webbing to fill void between upper and lower rivets of reverse side of link.

f. Tack six plies of webbing with two turns of size 6 thread, single and waxed at each edge of webbing. Tie off (Figure 27).



6.2-5697D

Figure 27. Tack Six Piles of Webbing

**28. REPLACEMENT OF SHEAR LINK CHAFING TACKINGS.**

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 loose or broken tacking.
- b. Tack webbing per Figure 27.

**29. REPLACEMENT OF EXTERNAL PILOT PARACHUTE.**

- a. Inspect replacement external pilot parachute per WP 019 02.
- b. Mark date placed in service on nameplate gore.
- c. Replace external pilot parachute at proper place during packing procedures.
- d. Record date on Parachute Record (OPNAV 4790/101).

**30. PARACHUTE HARNESS SENSING RELEASE UNITS INSTALLATION.**

- a. Install per WP 024 01 and WP 024 02.

**31. PILOT PARACHUTE AND INTERNAL BRIDLE LINE REPAIRS.**

- a. Repair of the pilot parachute and/or internal bridle line is limited to the following:

- (1) Cleaning of contaminated areas.
- (2) Replacement of loose or broken tacking.

- b. Replace plot parachute and/or connector strap for any of the following:

- (1) Service/life has expired per WP 019 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.

- (5) Internal bridle line finished length is incorrect.

**32. REPLACEMENT OF INTERNAL BRIDLE LINE.**

Support Equipment Required

Part Number	Nomenclature
DPP-50	Scale, Spring

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. Inspect replacement bridle line per WP 019 02.

- b. Place bridle line under 10 lb. tension and measure unattached length. Proper length is 40 ± 1/2-in.

- c. Remove tacking on Lark's head knot at canopy apex lines.

- d. Remove bridle line and pilot parachute from apex lines.

- e. Remove bridle line from pilot parachute loop.

- f. Pass small loop end of internal bridle thru loop in pilot parachute. Form a Lark's head knot by passing large loop end of bridle thru small loop and pulling tight.

g. Count 14 vent line in sequence. Pass large loop end of bridle line around the 14 lines and thru spreading gun retainer cord.

h. Pass pilot parachute thru large loop of bridle line; pull tight and form a Lark's head knot.

i. Tack Lark's head knot at canopy apex with two turns of size 6 thread, single and waxed; tie off.

j. Mark date placed in service on bridle line. Make required entries on Parachute Record (OPNAV 4790/101).

**33. REPLACEMENT OF LOOSE OR BROKEN TACKING PILOT PARACHUTE (PLATE 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. Remove broken tacking, or completely remove loose tacking.

**NOTE**

Plate assembly is attached at base of coil spring.

b. Locate the four holes in plate assembly within pilot parachute fabric.

c. Tack thru holes with two turns of size 6 thread, doubled and waxed; tie off.

**34. REPLACEMENT OF LOOSE OR BROKEN TACKING ON PILOT PARACHUTE CONNECTOR STRAP.**

**Materials Required**

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

**NOTE**

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

a. Remove thread from broken tacking or completely remove loose tacking.

b. Pull Lark's head knot tight.

c. Tack Lark's head knot at canopy apex with two turns of size 6 thread, single and waxed; tie off.

**35. REPLACEMENT OF OVERRIDE DISCONNECT HOUSING TACKINGS.**

**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 loose or broken tacking(s).

b. Tack housing in two places at grooved end to bridle with two turns of size 6 thread, doubled and waxed; tie off (Figure 28).

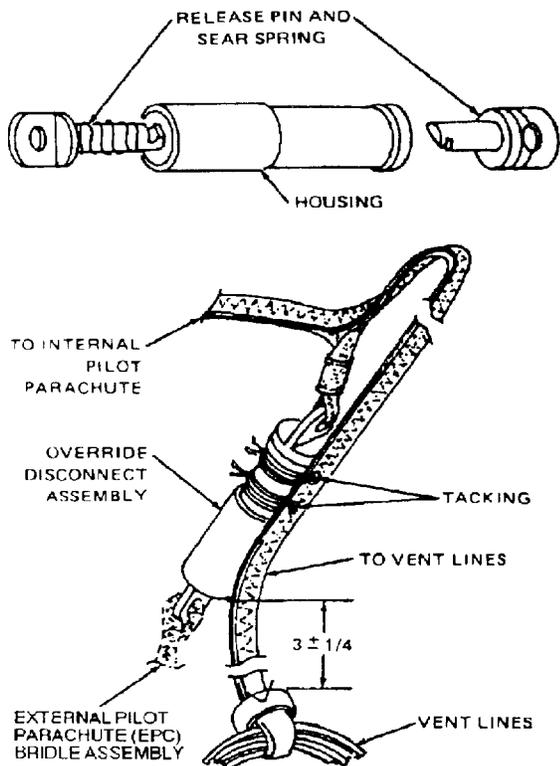


Figure 28. Replacement of Override Disconnect Housing Tackings

6.2-5931

e. Pass small loop end of bridle line thru loop in replacement pilot parachute. Form a Lark's head knot by passing large loop end of bridle thru small loop and pulling right.

f. Pass large loop of bridle line around apex lines and thru spreading gun retainer cord.

g. Pass pilot parachute thru large loop of bridle line; pull tight and form a Lark's head knot.

h. Tack Lark's head knot at canopy apex with two turns of size 6 thread, single and waxed; tie off.

i. Mark date placed in service on pilot parachute. Make required entries on Parachute Record (OPNAV 4790/101).

**37. REPLACEMENT OF TRI-STAGE PARACHUTE.**

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. Position override disconnect housing on bridle line at a point  $3 \pm 1/4$ -in. above knot at canopy vent (Figure 28).

b. With larger diameter opening facing vent lines, tack housing to bridle line at two places with two turns of size 6 thread, doubled and waxed; tie off.

c. Fabricate and install EPC shear link chafing webbing per Paragraph 27.

d. Insert release pin and spring attached to external pilot parachute into wide end of override disconnect housing.

e. Push release pin into housing using a temporary locking pin until release pin protrudes from opposite end. Engaged sear on bridle line with release pin and then release tension on spring allowing sear and release pin to become fully engaged inside housing (Figure 28).

**36. REPLACEMENT OF PILOT PARACHUTE.**

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. Inspect replacement pilot parachute per WP 019 02.

b. Remove tackings at Lark's head knot at canopy apex lines.

c. Remove bridle line and pilot parachute from apex lines.

d. Remove bridle line from pilot parachute loop.

**38. RIPCORDER ASSEMBLY REPAIR.**

**39. REPLACEMENT OF RIPCORDER ASSEMBLY.**

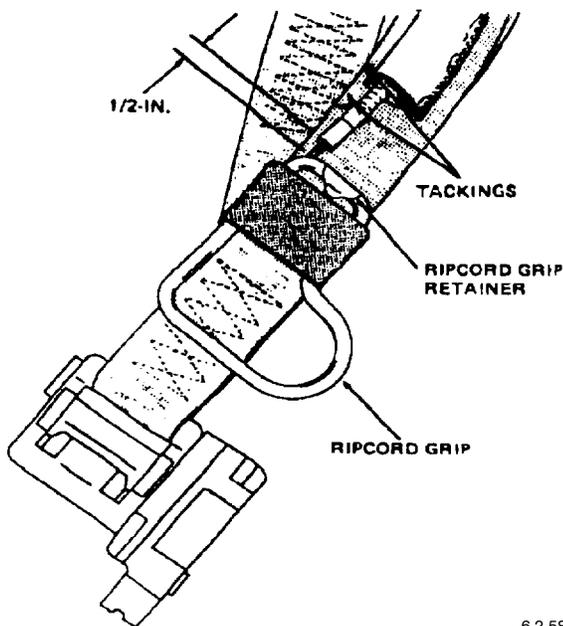
Materials Required

Specification or Part Number	Nomenclature
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. 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 019 02.
- d. Pass ripcord housing thru flute on riser and then insert ripcord grip into ripcord retainer (Figure 29).



6.2-5859

**Figure 29. Ripcord Assembly Replacement**

e. Position end of ripcord housing 1/2-in. from ripcord retainer and then tack to riser with three turns of size 6 thread, doubled and waxed. Tacking shall pass around grooved part of housing next to and snug against ferrule; tie off (Figure 29).

f. Tack edge of flute hem to inboard side of riser with one turn of size FF thread, single and waxed; tie off (Figure 29).

**40. RISER ASSEMBLY REPAIRS.**

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.
- (5) Removal/replacement of riser protection sheath.

b. Replace risers for any of the following:

- (1) Service/total life has expired per WP 019 02.
- (2) Cuts, tears, or holes in webbing.
- (3) Loose or broken stitching in excess of three stitches.
- (4) Twists, fading, fusing, fraying, burns, contamination, and abrasion.
- (5) Damaged roller fittings, retainer fittings, and ripcord housing flute.

**41. FABRICATION OF RETAINER CORD.**

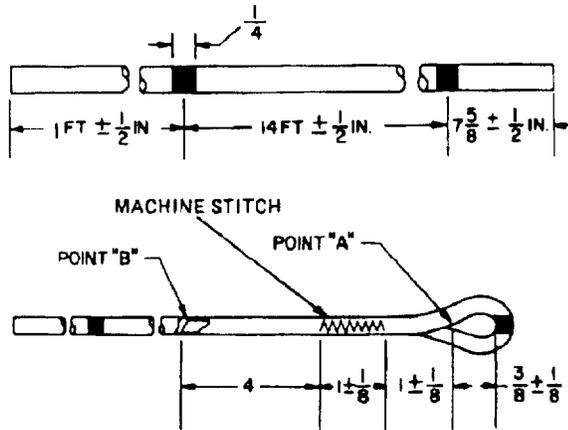
Support Equipment Required

Part Number	Nomenclature
—	Bodkin
DPP-50	Spring, Scale

Materials Required

Specification or Part Number	Nomenclature
MIL-C-7515	Cord, Nylon, Type V
TT-I-1795	Ink, Red, Waterproof
V-T-295	Thread, Nylon, Size FF, Type I or II, Class A

a. Place nylon cord under  $10 \pm 2$  lb. tension. Mark and cut as shown in Figure 30. Use red ink for marking.



6.2-5497

Figure 30. Retainer Cord Fabrication

b. Form a 3/8-in. loop in line (at line end where red mark is 7 5/8-in. from end).

c. Insert bodkin at point B and exit bodkin at point A (Figure 30). Pull cord thru point A and out point B. Cut excess at a 45 degree angle and work line smooth on inside of casing.

d. Zig zag machine stitch cord for a length of 1-in. as shown in Figure 30.

**42. REPAIR OF RIPCORD GRIP RETAINER.**

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

- (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) Tackings securing cover to riser assembly are loose or missing.

**43. REPLACEMENT OF RIPCORD GRIP RETAINER.**

Materials Required

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

**NOTE**

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

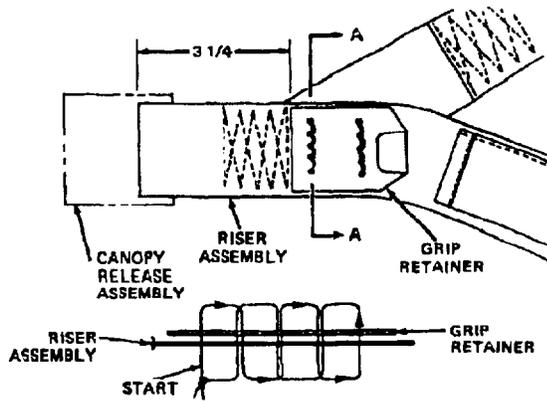
a. Remove stitching securing grip retainer cover to riser assembly and slide cover back.

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

c. Measure  $3 \frac{1}{4} \pm \frac{1}{8}$ -in. from end of riser assembly and mark for reference.

d. Place grip retainer on riser assembly with lower edge positioned at  $3 \frac{1}{4}$ -in. reference mark.

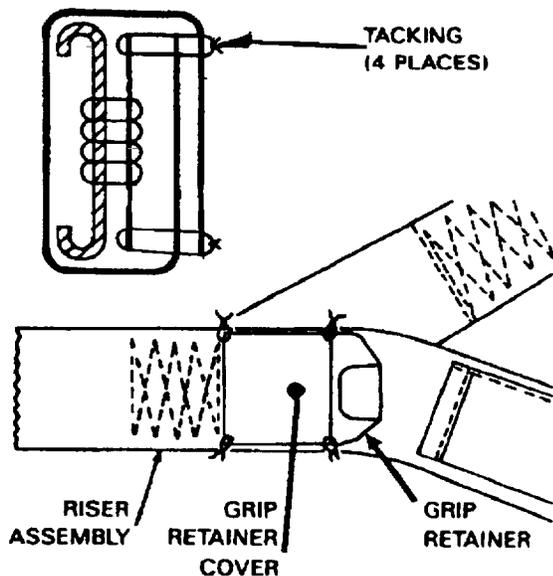
e. Handstitch grip retainer to riser assembly using a running stitch with size 6 thread, doubled and waxed. Start handstitch by placing an overhand knot 5-in. from bitter end of thread, starting and ending underside of riser assembly at the same hole location; tie off. Repeat procedure for remaining set of holes (Figure 31). (QA)



6.2-5879

Figure 31. Ripcord Grip Retainer Replacement

- f. Perform ripcord grip retainer test per WP 019 02.
- g. Reinstall grip retainer cover by positioning cover over grip retainer with lower edges aligned.
- h. Tack retainer cover to lower riser in four places with size FF thread, doubled and waxed; tie off (Figure 32). (QA)



6.2-5879A

Figure 32. Ripcord Grip Retainer Cover Replacement

**44. REPLACEMENT OF RIPCORD GRIP RETAINER COVER.**

Materials Required

Specification or Part Number	Nomenclature
PIA-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 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 overlapping the 1 3/4-in. mark (Figure 32).
- f. Tack retainer cover to uppermost portion of riser in four places with size FF thread, doubled and waxed; tie off (Figure 32). (QA)

**45. REPLACEMENT OF RISER ASSEMBLY.**

Support Equipment Required

Part Number	Nomenclature
—	Line Stowage Aid
—	Temporary Locking Pin
—	Torque Screwdriver

**Materials Required**

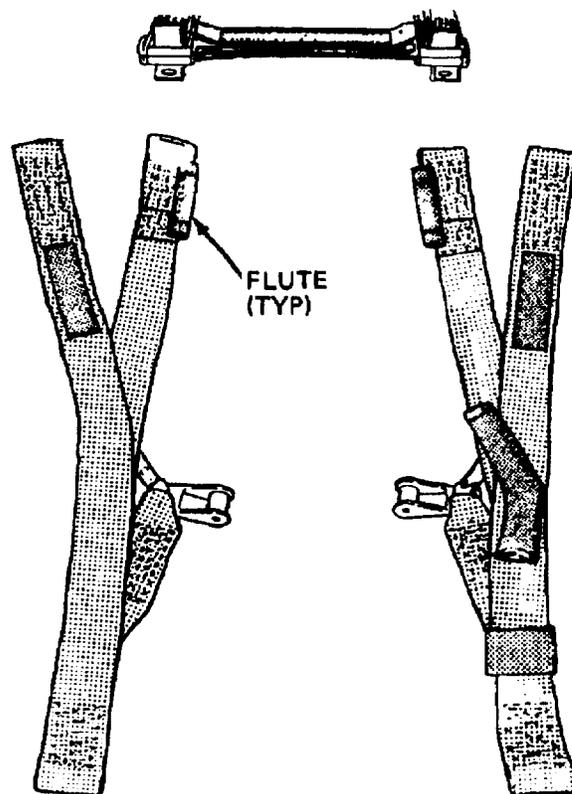
Specification or Part Number	Nomenclature
F-900 Torque Seal (Color Optional)	Sealing Compound

**NOTE**

For Double “L” Connector Link, refer to Paragraph 47 for disassembly, assembly, and inspection instructions.

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

- a. Remove ripcord assembly from riser.
- b. Remove parachute harness sensing release units from risers per WP 024 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.
- f. Reinstall yoke and plate assemblies.
- g. Ensuring suspension line continuity is maintained insert connector links onto tension hooks (Figure 1).
- h. Inspect replacement risers per WP 019 02.
- i. Lay out replacement riser assembly and connector strap on packing table with riser strap loops towards connector links and ripcord assembly facing up on helper’s side (Figure 33).



6.2-5912

**Figure 33. Replacement of Riser Assembly**

- j. Remove connector link yoke and plate assemblies from bottom connector links.
- k. Slide suspension lines onto a temporary locking pin or rod.
- l. Insert bottom connector links into bottom riser loops.

**WARNING**

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

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

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

o. Insert top connector links into top riser loops.

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

q. Check suspension line continuity (Figure 1). (QA)

**NOTE**

Top right connector link will be torqued after attachment of spreading gun firing lanyard.

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

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

t. Using a line stowage aid 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.

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

v. 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.

w. 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 004 00. (QA)

x. Reinstall parachute harness sensing release units WP 024 02.

y. Reinstall ripcord assembly per Paragraph 39.

z. Mark date placed in service on identification and service life label. Make required entries on Parachute Record (OPNAV 4790/101). (QA)

**46. REPLACEMENT OF RISER PROTECTION SHEATH.**

a. Install the protection sheath on the riser by folding it over both webbing layers of the left.

b. The sheath should not cover 1 23/32-in. wide harness strap attached to the roller fitting.

c. Route the 9/16-in. wide retention strap and roller fitting assembly thru the side opening on the top of each sheath.

d. The ripcord cable housing and flute should also pass thru this side opening.

e. Secure each of the snap fasteners and ensure that the top of each sheath completely covers the risers as they emerge from the parachute container.

f. Repeat for right riser.

g. Ensure that each protection sheath is correctly installed over the riser. (QA)

**47. 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.

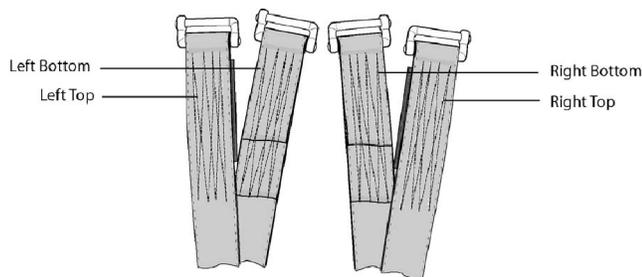
**Materials Required**

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 34).



Riser (Typ) with Double "L" Connector Links Installed

**Figure 34. 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 019 04.

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**ORGANIZATIONAL, INTERMEDIATE, AND DEPOT MAINTENANCE**

**ILLUSTRATED PARTS BREAKDOWN**

**NES-12 PERSONNEL PARACHUTE ASSEMBLY**

**PART NO. 576AS100-37 and 576AS100-38**

**List of Effective Work Package Pages**

<u>Page No.</u>	<u>Chg. No.</u>						
1	..... 11	2 thru 7	..... 9				

**Reference Material**

Intermediate and Depot Maintenance, Packing Procedures, NES-12 Personnel Parachute Assembly ..... WP 019 02

**Alphabetical Index**

<u>Title</u>	<u>Page</u>
Introduction .....	1
Service/Total Life .....	1
Usable on Codes .....	1

**List of Figures**

<u>Title</u>	<u>Page</u>
NES-12 Personnel Parachute Assembly .....	2

**Record of Applicable Technical Directives**

None

**1. INTRODUCTION.**

a. This Work Package (WP) contains information for ordering and identifying parts for the NES-12 Personnel Parachute Assembly (Figure 1).

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

A – S-3

B – TA-4F, TA-4J

**2. USABLE ON CODES.**

a. The usable on codes in this WP refer to the aircraft applications for the NES-12 Personnel Parachute Assembly.

**3. SERVICE/TOTAL LIFE.**

a. The service/total life information is contained in WP 019 02.

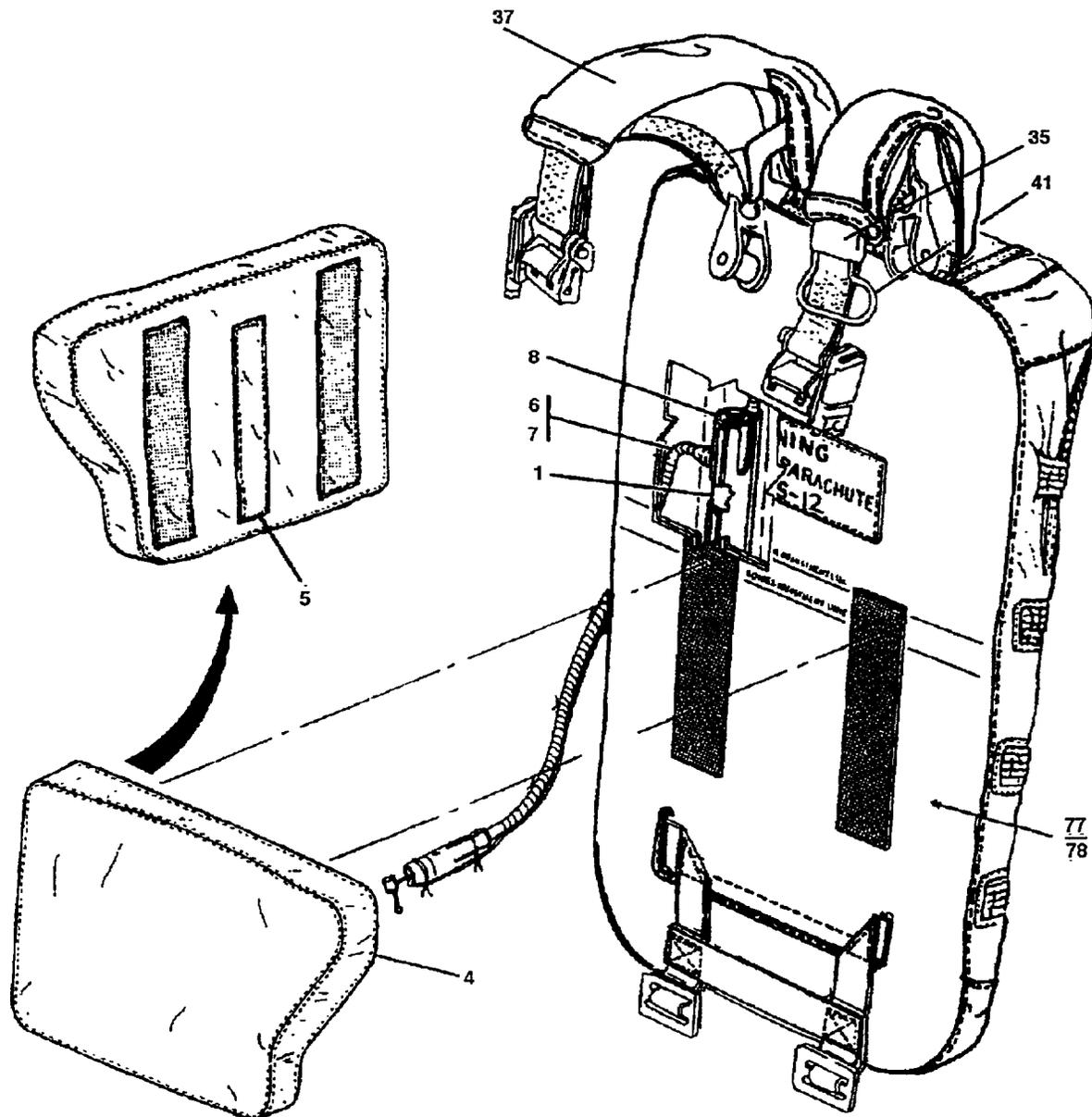


Figure 1. NES-12 Personnel Parachute Assembly (Sheet 1 of 6)

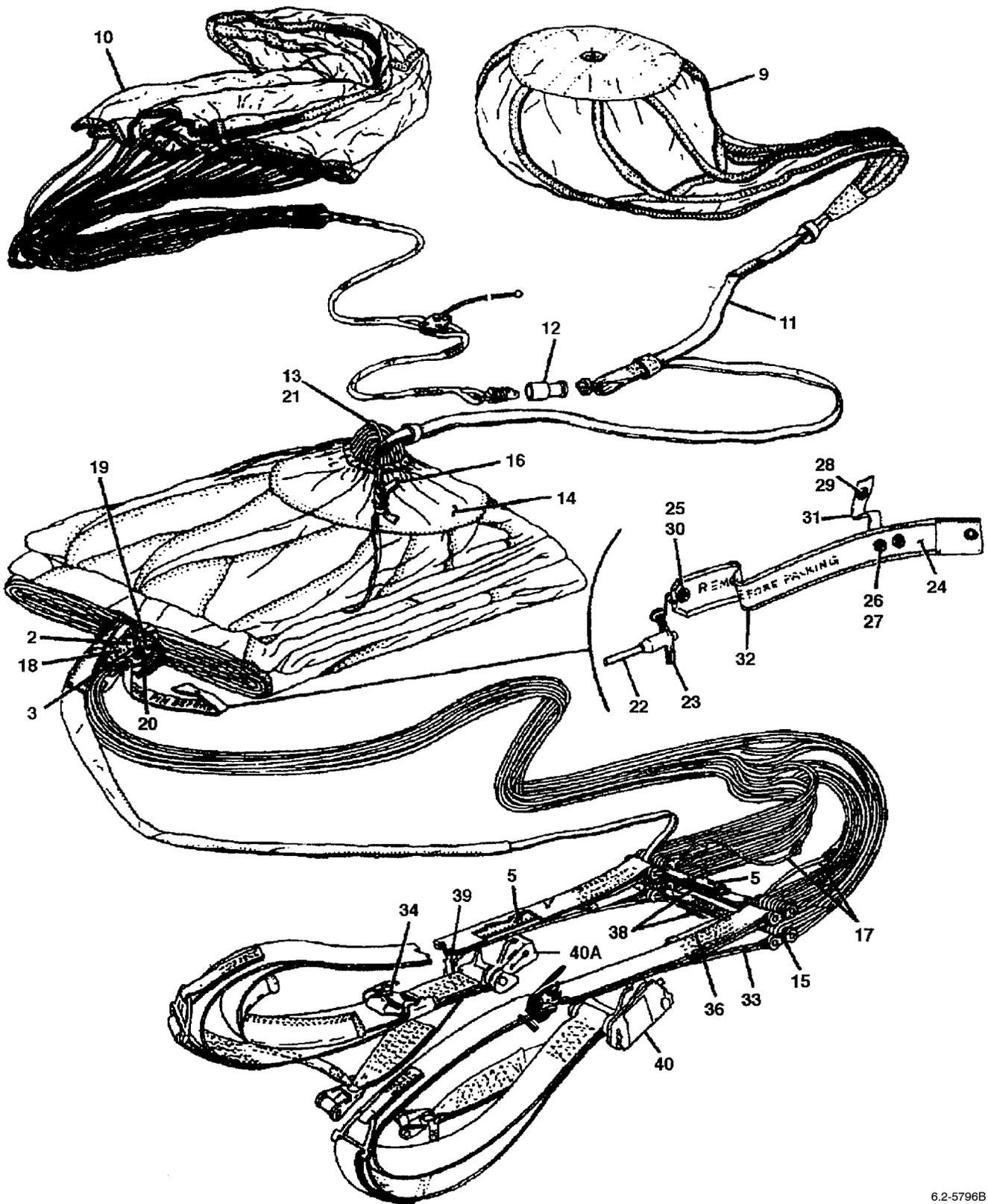
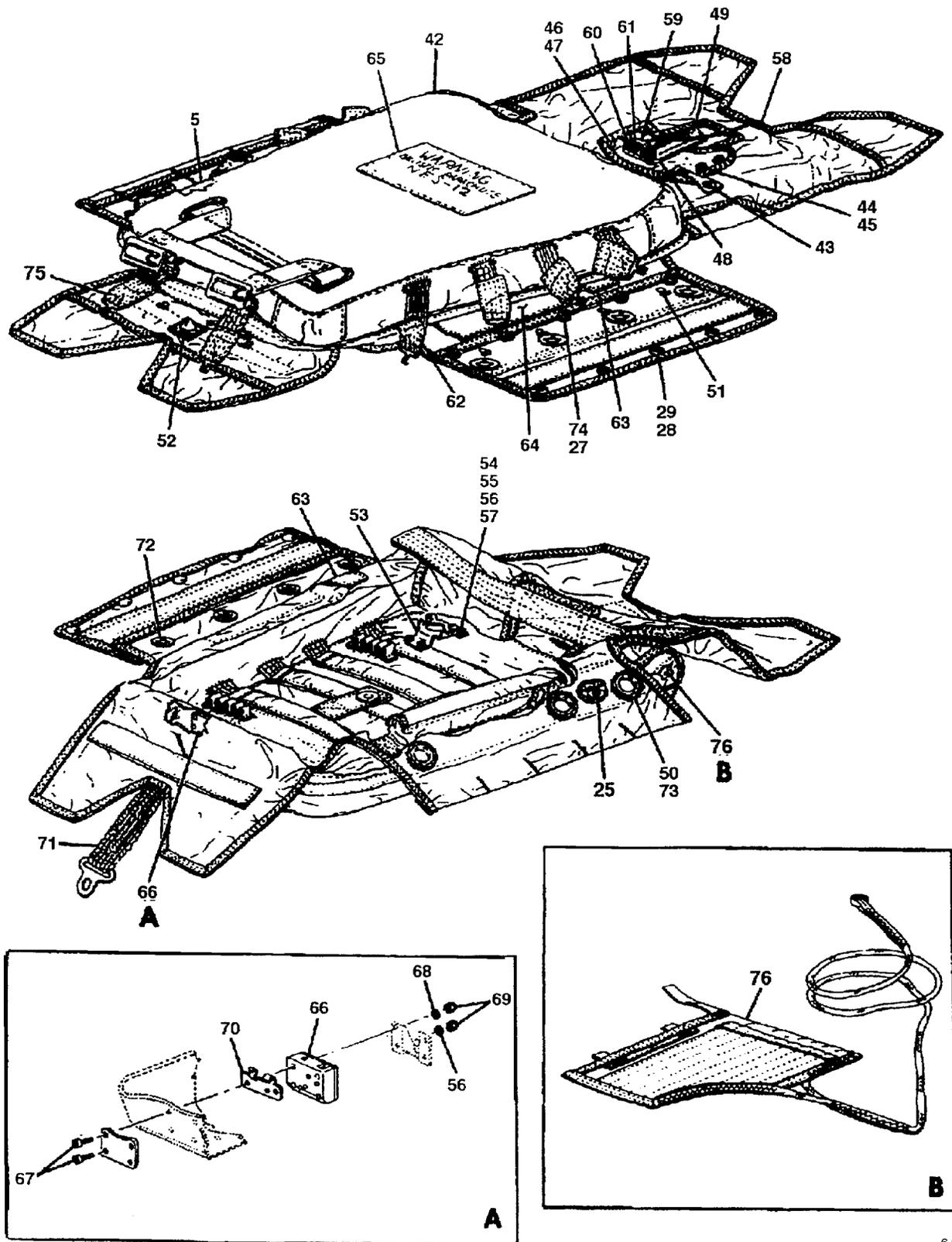


Figure 1. NES-12 Personnel Parachute Assembly (Sheet 2 of 6)

INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE	SM&R CODE
	576AS100-37	PARACHUTE ASSEMBLY, COMPLETE, NES-12 .	1	A	AGOGG
	576AS100-38	PARACHUTE ASSEMBLY, COMPLETE, NES-12 .	1	B	AGOGG
1	851AS100	. CARTRIDGE, DELAY, CCU-59/A (MF 37) . . . . .	1	A	PCGZA
	2519703	. CARTRIDGE, DELAY, MK 4 MOD 2 (M282) . . .	1	B	PCGZA
2	825AS100	. CARTRIDGE, IMPULSE, CCU-33/B (MF78) . . .	1		PCGZA
3	MS16555-630	. PIN, STRAIGHT HEAD . . . . .	1		PAGZZ
4	510AS141-1	. PAD ASSEMBLY, LUMBAR . . . . .	1	A	PAOZZ
5	676AS100-1	. . LABEL/NOTE 1/ . . . . .	4		XBGZZ
6	711-07025	. HOUSING, ARMING CABLE /52497/ . . . . .	1		PAGZZ
7	711-07108	. CABLE, ARMING /52497/ . . . . .	1		PAGZZ
8	711-07022-34	. RELEASE, AUTOMATIC PARACHUTE . . . . . RIPCORDER, MOD 7000 /52497/	1		PAGDD
9	60A125E16-1	. PARACHUTE ASSEMBLY, PILOT . . . . .	1		PCGGG
10	510AS108-1	. PARACHUTE ASSEMBLY, PILOT . . . . . EXTERNAL TRI-STAGE	1		PCGZZ
11	510AS106-1	. BRIDLE ASSEMBLY, INTERNAL . . . . .	1		PCGGG
12	SK86-0029-1	. . HOUSING /24632/ . . . . .	1		PAGZZ
13	702AS100-1	. SLEEVE/MAKE FROM . . . . . MIL-I-22129/NOTE 2/	1		MGGZZ
14	107AS106-22	. CANOPY ASSEMBLY . . . . .	1	*	PCGGG
	107AS106-24	. CANOPY ASSEMBLY (WITH DOUBLE "L" . . . CONNECTOR LINK INSTALLED	1	*	PCGGG
15	MS22021-1	. . LINK, REMOVABLE CONNECTOR . . . . .	4	*	PAGZZ
	MS22002-1	. . CONNECTOR LINK (DOUBLE "L") . . . . .	4	*	PAGZZ
16	701AS100-1	. . TAPE ASSEMBLY, MIL-T-5608, . . . . . TYPE II, CLASS A	1		MGGZZ
17	666AS101-2	. . LANYARD, FOUR LINE RELEASE . . . . .	2		MGGZZ
18	SK86-0051-10	. GUN ASSEMBLY, SPREADING, . . . . .	1	*	PAGGD
	SK86-0051-12	. GUN ASSEMBLY, SPREADING, /24632/ . . . . .	1	*	PAGGD
19	472P215DO17-7	. . MOUNT, CANOPY /24632/ . . . . .	14		PAGZZ
20	LKD7F52Z5	. . SCREW /24632/ . . . . .	28		PAGZZ
21	SK86-0093-1	. . CORD, RETAINER . . . . .	1		MGGZZ
22	SK86-0089-1	. . SAFETY PIN ASSEMBLY /24632/ . . . . .	1		PAGGG
23	MS17985C310	. . . PIN, QUICK RELEASE . . . . .	1		PAGZZ
24	39768	. . . FLAG ASSEMBLY /89771/ . . . . .	1		MGGGG
25	MS20230B10	. . . . GROMMET ASSEMBLY . . . . .	2		PAGZZ
26	MS27983-4	. . . . EYELET . . . . .	2		PAGZZ
27	MS27983-3	. . . . STUD . . . . .	7		PAGZZ
28	MS27983-2N	. . . . SOCKET . . . . .	7		PAGZZ
29	MS27983-1	. . . . BUTTON . . . . .	7		PAGZZ
30	39768-3	. . . . WASHER /89771/ . . . . .	1		MGGZZ
31	39768-2	. . . . STRAP /89771/ . . . . .	1		MGGZZ
32	39768-1	. . . . FLAG /89771/ . . . . .	1		MGGZZ
33	510AS136-20	. RISER ASSEMBLY . . . . .	1		PCGGG
34	60A116C10-1	. . RETAINER, RIPCORDER GRIP . . . . .	1		PAGZZ
35	510AS136-10	. . COVER, RETAINER . . . . .	1		MDOGG

Figure 1. NES-12 Personnel Parachute Assembly (Sheet 3 of 6)



6.2-6162

Figure 1. NES-12 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
36	666AS102-5	. . FLUTE, FOUR-LINE RELEASE . . . . . LANYARD	2		MGGZZ
37	510AS144-1	. SHEATH, RISER PROTECTIVE . . . . .	2		PCOZZ
38	677AS100-2	. STRAP, CONNECTOR . . . . .	2		PCGGG
39	852AS117-3	.SENSING RELEASE UNIT, PARACHUTE . . . . . HARNES MXU-746/P LEFT SIDE	1		AGGGG
40	852AS117-4	.SENSING RELEASE UNIT, PARACHUTE . . . . . HARNES MXU-746/P RIGHT SIDE	1		AGGGG
40A	990055-1	. RELEASE ASSEMBLY, CANOPY/99449/ . . . . .	2	*	PAGZZ
	015-10307-5	. RELEASE ASSEMBLY, CANOPY/99449/ . . . . . (USE UNTIL EXHAUSTED)	2	*	PAGZZ
41	782AS109-1	. RIPCORDER ASSEMBLY, PARACHUTE . . . . .	1		PAGZZ
42	510AS101-501	. CONTAINER ASSEMBLY . . . . .	1		PCGGG
	510AS101-101	. CONTAINER ASSEMBLY /SEE NOTE 3/ . . . . .	1		PCGGG
43	510AS133-1	. . TAB EXTENDER . . . . .	1		MGGZZ
44	MS27981-1B	. . FASTENER, BUTTON . . . . .	3		PAGZZ
45	MS27981-3B	. . FASTENER, SOCKET . . . . .	3		PAGZZ
46	MS27981-4B	. . FASTENER, STUD . . . . .	3		PAGZZ
47	MS27981-5B	. . FASTENER, EYELET . . . . .	3		PAGZZ
48	60A113D16-1	. . BASE ASSEMBLY, CLAMP . . . . .	1		PAGZZ
49	60A113C24-1	. . CONE, 0.410 GRIP . . . . .	1		PAGZZ
50	60A113C25-1	. . WASHER, GROMMET . . . . .	3		PAGZZ
51	60A113C28-1	. . EYE . . . . .	12		PAGZZ
52	60A113C31-1	. . CONE, 0.338 GRIP . . . . .	2		PAGZZ
53	782AS108-1	. . RETAINER SUPPORT, RISER . . . . . /ATTACHING PARTS/	2		PAGZZ
54	NAS514P1032-8	. . SCREW, MACHINE . . . . .	8		PAGZZ
55	NAS1169-10	. . WASHER, SHOULDER . . . . .	8		PAGZZ
56	AN960C10L	. . WASHER, FLAT . . . . .	10		PAGZZ
57	22NKM02	. . NUT /72962/ . . . . . ---*---	8		PAGZZ
58	60A116D26-2	. . LANYARD, RELEASE . . . . .	1		PCGZZ
59	782AS119-1	. . CLAMP, RIPCORDER HOUSING . . . . .	1		PAGZZ
60	782AS122-1	. . SCREW . . . . .	1		PAGZZ
61	72300-01	. . . CLAMP /07878/ . . . . .	1		PAGZZ
62	60A113D11-21	. . SPRING ASSEMBLY, CONTAINER . . . . . OPENING	4		PAGZZ
63	510AS102-1	. . LABEL, WARNING . . . . .	2		MDGZZ
64	585AS100-1	. . LABEL, PARACHUTE ASSEMBLY . . . . . /NOTE 1/	1		XBGZZ
65	510AS126-1	. . LABEL, WARNING . . . . .	1		MDGZZ
66	510AS129-2	. . RELEASE, EXTERNAL PILOT CHUTE . . . . .	1		PAGZZ
67	MS27039-1-19	. . SCREW, MACHINE . . . . .	4		PAGZZ
68	AN960C10	. . WASHER, FLAT . . . . .	2		PAGZZ
69	MS21045C3	. . NUT, SELF-LOCKING . . . . . ---*---	4		PAGZZ

Figure 1. NES-12 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
70	107AS109-1	. . PLATE, RETAINER, EPC BOX .....	1		XAZZZ
71	510AS130-1	. . SPRING BAND ASSEMBLY .....	1		PAGGG
72	MS22048C2	. . GROMMET AND WASHER, .....	4		PAGZZ
		PARACHUTE PACK			
73	MS22048GC1	. . GROMMET .....	3		PAGZZ
74	MS27980-8B	. . FASTENER, EYELET .....	5		PAGZZ
75	60A113D11-8	. . SPRING ASSEMBLY, CONTAINER .....	2		PAOZZ
		OPENING			
76	699AS101-1	. BAG ASSEMBLY DEPLOYMENT .....	1		PCGZZ
77	579AS115-501	. PROTECTIVE COVER/NOTE 4/ .....	1	B	PAGZZ
78	579AS115-503	. PROTECTIVE COVER .....	1	A	PAGZZ

- NOTE:
1. Available from the In-Service Support Team (ISST).
  2. Make from MIL-I-22129 insulation sleeving, NIIN 00-899-6650 (size 0.020-in. wall x 0.30-in. ID x 6.0-in. long).
  3. Modify 510AS101-101 configuration to 510AS101-501 configuration by incorporation of ACC 494 ECP Bridle protector flap installation.
  4. Protective cover without velcro and markings.

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