

ORGANIZATIONAL, INTERMEDIATE AND DEPOT MAINTENANCE

DESCRIPTION AND PRINCIPLES OF OPERATION

A/P28S-28, -30, and -31 HEADREST ASSEMBLY

PART NO. 14090-21, 14090-19, 14690-17, and 14090-3

PCU-29/A DROGUE/CONTAINER ASSEMBLY

PART NO. 14210-9

List of Effective Work Package Pages

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Reference Material

Illustrated Parts Breakdown, A/P28S-28, -30, -31 Headrest Assembly	WP 022 03
Illustrated Parts Breakdown, PCU-29/A Drogue/Container Assembly	WP 023 02

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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>
ACC 667, Part 2	11 Mar 02	A/P28S-28, A/P28S-30, A/P28S-31 Headrest Assemblies in TAV-8B AV-8B Aircraft, Installation of Four-Line Release System and Over-Inflation Control Line. (WUC1774O, WUC174AO, WUC1749O). ECP-16416.	1 Jun 02	31 Dec 2004

1. DESCRIPTION.

2. GENERAL.

a. The PCU-29/A Drogue/Container Assembly (Figure 1) is part of three assemblies, which are shown in (Figure 2): (1) the A/P28S-28 assembly is part of the SJU-4/A ejection seat used in AV-8B aircraft; (2) the A/P28S-30 assembly is part of SJU-14/A ejection seat; and (3) the A/P28S-31 assembly is part of SJU-13/A ejection seat used in TAV-8B aircraft. All assemblies are designed for use with the PCU-33/P or PCU-56/P parachute harness.

b. The PCU-29/A drogue parachute is used to decelerate and stabilize the ejection seat and at a predetermined time/altitude, to extract the personnel parachute from the container.

c. The drogue parachute is 39-in. in diameter and constructed of heat-resistant Kevlar fabric. The canopy consists of eight gores and eight suspension lines made of 5/8-in. tubular nylon webbing. The suspension lines are connected to a 9-ft. riser, which is attached to one end of the Wind Oriented Rocket Deployment (WORD) Motor. The drogue parachute is packed in a rigid container mounted at the top of the ejection seat.

d. The personnel parachute assembly is composed of a 28-ft. diameter, flat modified multicolored (white, olive green, international orange, and sand shade) nylon canopy with braided nylon suspension lines. The canopy is modified with water deflation pockets on alternate gores and with spreading gun loops. The canopy is packed in a rigid headbox assembly that is installed on the upper portion of the ejection seat. The aircrewmember risers (not part of the assembly) are attached to the connector links once the parachute is installed on the ejection seat.

3. CONFIGURATIONS.

a. The only authorized configurations for the drogue and personnel parachute assemblies are shown in (Figures 1 and 2). Refer to the Illustrated Parts Breakdown WP 022 03 and WP 023 02.

4. SUBASSEMBLY CONFIGURATIONS.

a. The subassemblies listed below make up the personnel parachute assemblies A/P28S-28, -30, and -31 and are shown in (Figure 3). Refer to WP 022 03 for detailed information on subassemblies.

Pilot Parachute

Pilot Parachute Bridle

Cross-Connector Straps and Connector Links

Canopy Assembly

Spreading Gun Assembly

Headbox Assembly

WORD Bridle

Parachute Harness Sensing Release Units (PHSRU)

5. PRINCIPLES OF OPERATION.

6. EJECTION STARTING SEQUENCE AV-8B AIRCRAFT.

a. The ejection sequence is initiated by pulling the ejection control located on the front seat bucket panel of the seat bucket. This fires two ejection initiators, which in turn fire the ejection seat catapult cartridge igniters. The ejection initiators also ignite an inertia reel gas generating initiator, an internal 0.4-sec. delay in the dual output time delay initiator, and a miniature detonating cord (MDC) thruster. The MDC thruster initiates canopy shattering and removes an altitude, airspeed sensor arming key. As the catapult cartridge is ignited, gas pressure acts upon locking pistons in the catapult tubes, forcing pistons to disengage locking balls, which in turn unlock inner and outer catapult tubes.

7. EJECTION STARTING SEQUENCE TAV-8B AIRCRAFT.

a. The ejection sequence is initiated by pulling the ejection control handle located on the front panel of the seat bucket. This fires two ejection initiators, which fire the inertia reel gas generator and two 0.4-sec. ballstic time delays. The catapult is ignited after the 0.4-sec. delay. The aircraft incorporates a signal transmission system (STS) to effect timely canopy transparency fracturing, and aft and forward seat initiation. The STS comprises shielded mild detonation cord (SMDC) line assemblies, one way transfer, time delays, a three mode selector device, and initiators. The sequences and mode selector vary conditions in which the crew maybe exposed to an emergency situation. At ejection seat tip-off two divergence rockets become effective for lateral separation between the two ejection seats. The aft seat diverges to the left and the forward seat diverges to the right.

8. EJECTION SEAT MOVEMENT.

a. The seat and outer catapult tubes travel along seat rails and are guided by six slipper assemblies. The AN/URT33A radio beacon and emergency oxygen system are automatically actuated via quick-disconnect fittings. The automatic oxygen release opens a metering valve within the emergency oxygen system pressure reducer, providing emergency oxygen flow to the aircrew. Should automatic

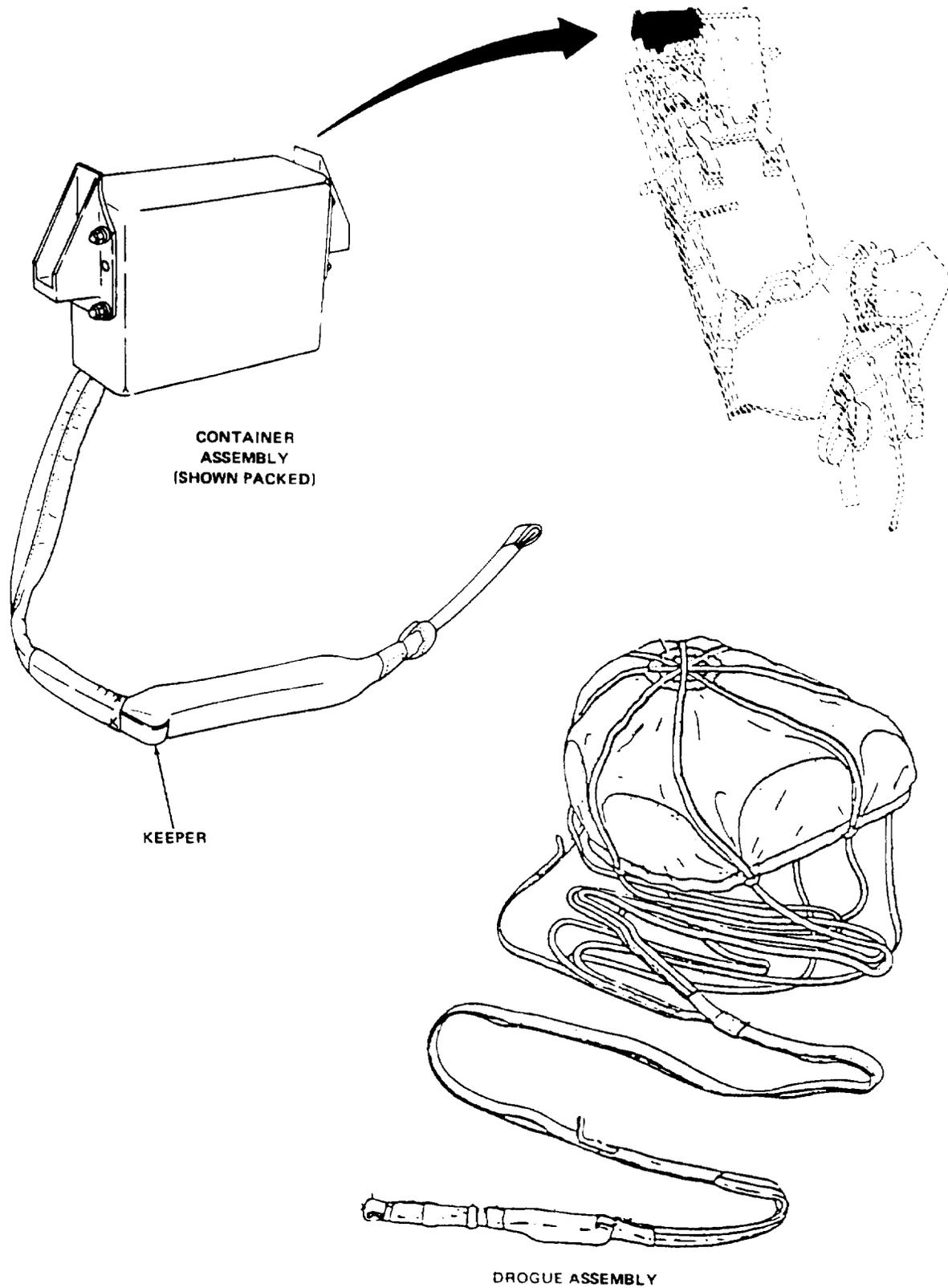


Figure 1. Drogue/Container Assembly, PCU-29/A

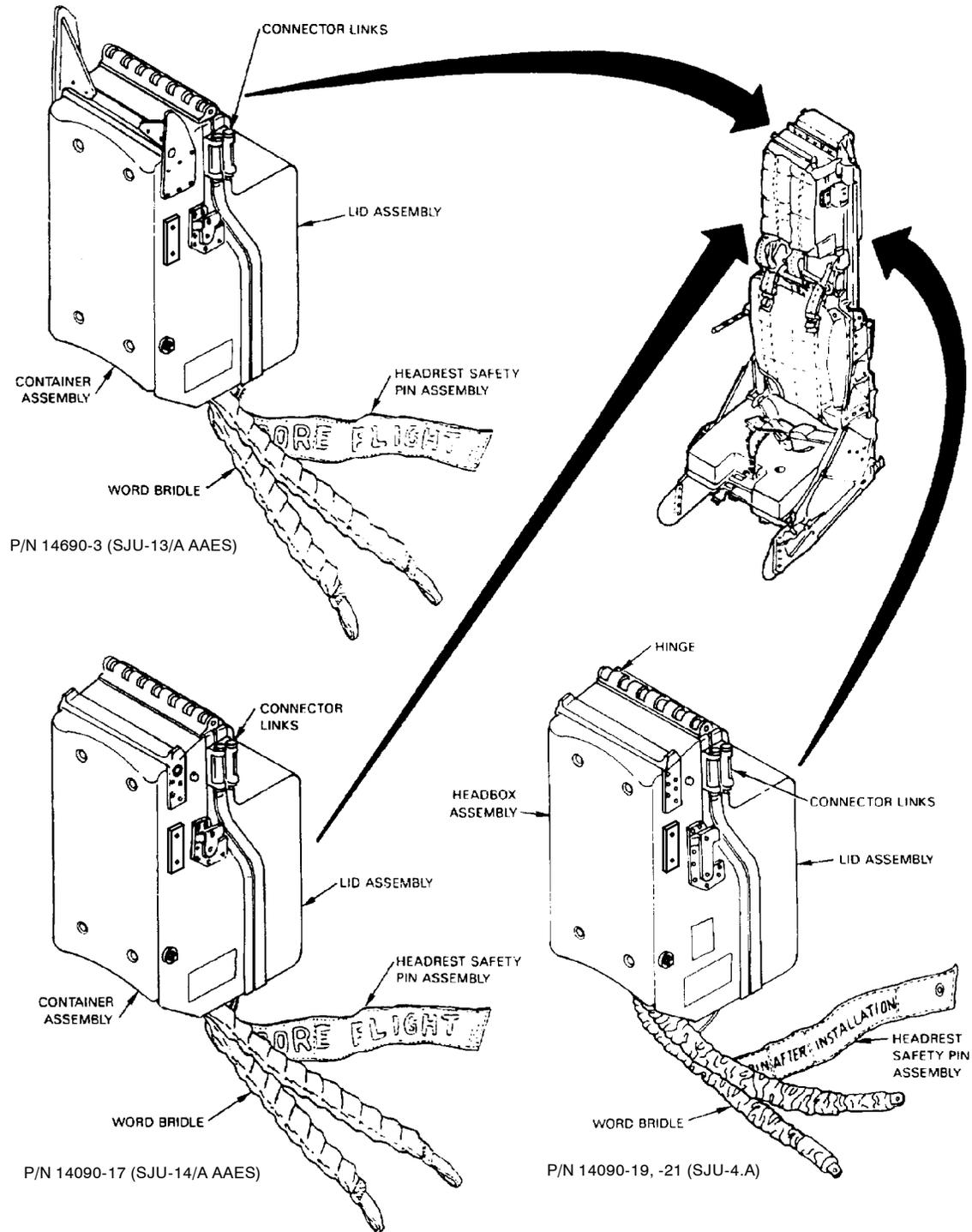
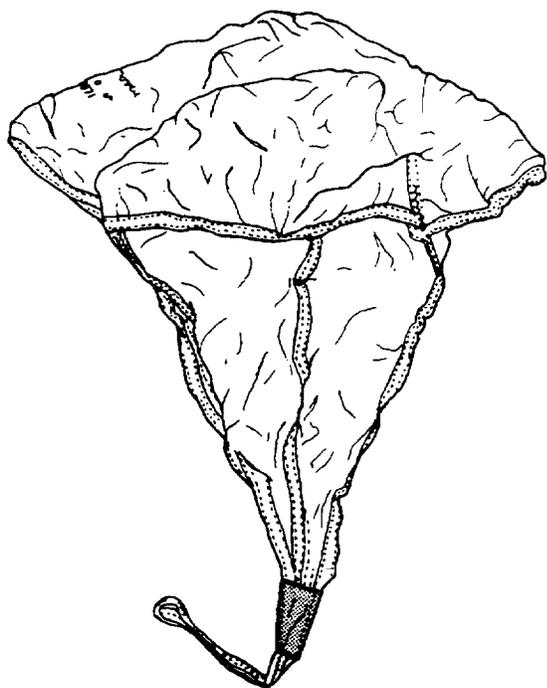
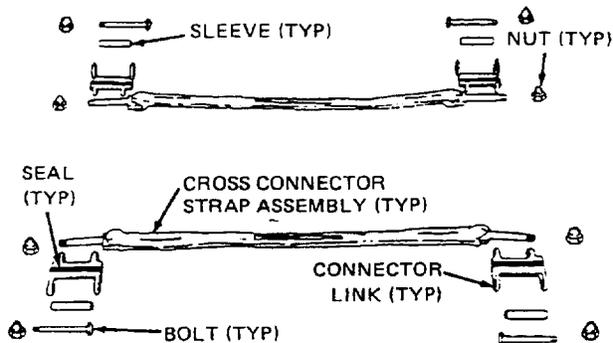


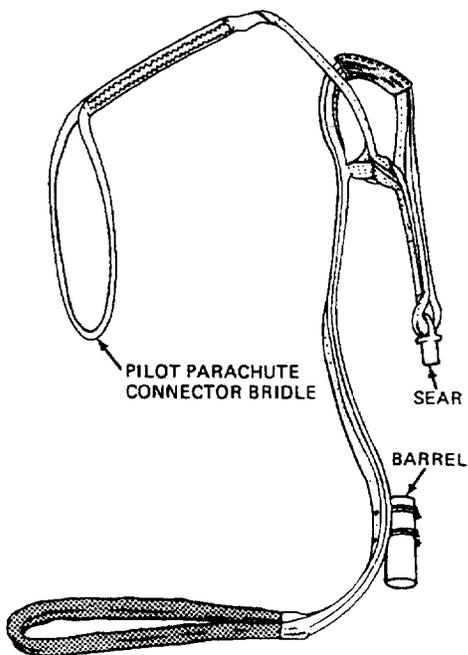
Figure 2. Headrest Assembly and Ejection Seat Assembly



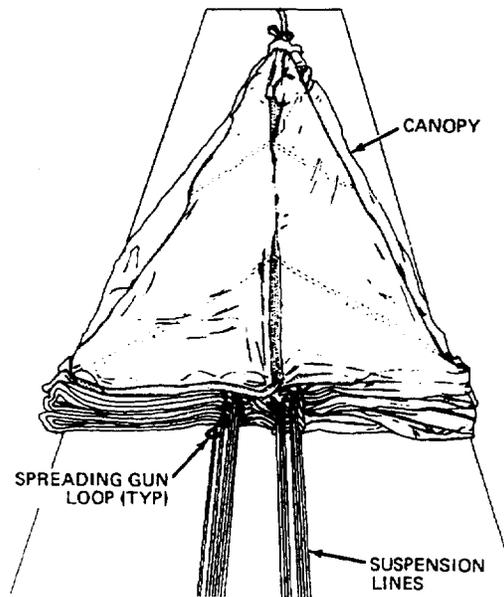
PILOT PARACHUTE ASSEMBLY



CROSS CONNECTOR STRAPS AND
CONNECTOR LINKS



PILOT PARACHUTE BRIDLE



CANOPY ASSEMBLY

Figure 3. Subassemblies, A/P28S-28, -30, -31 (Sheet 1 of 2)

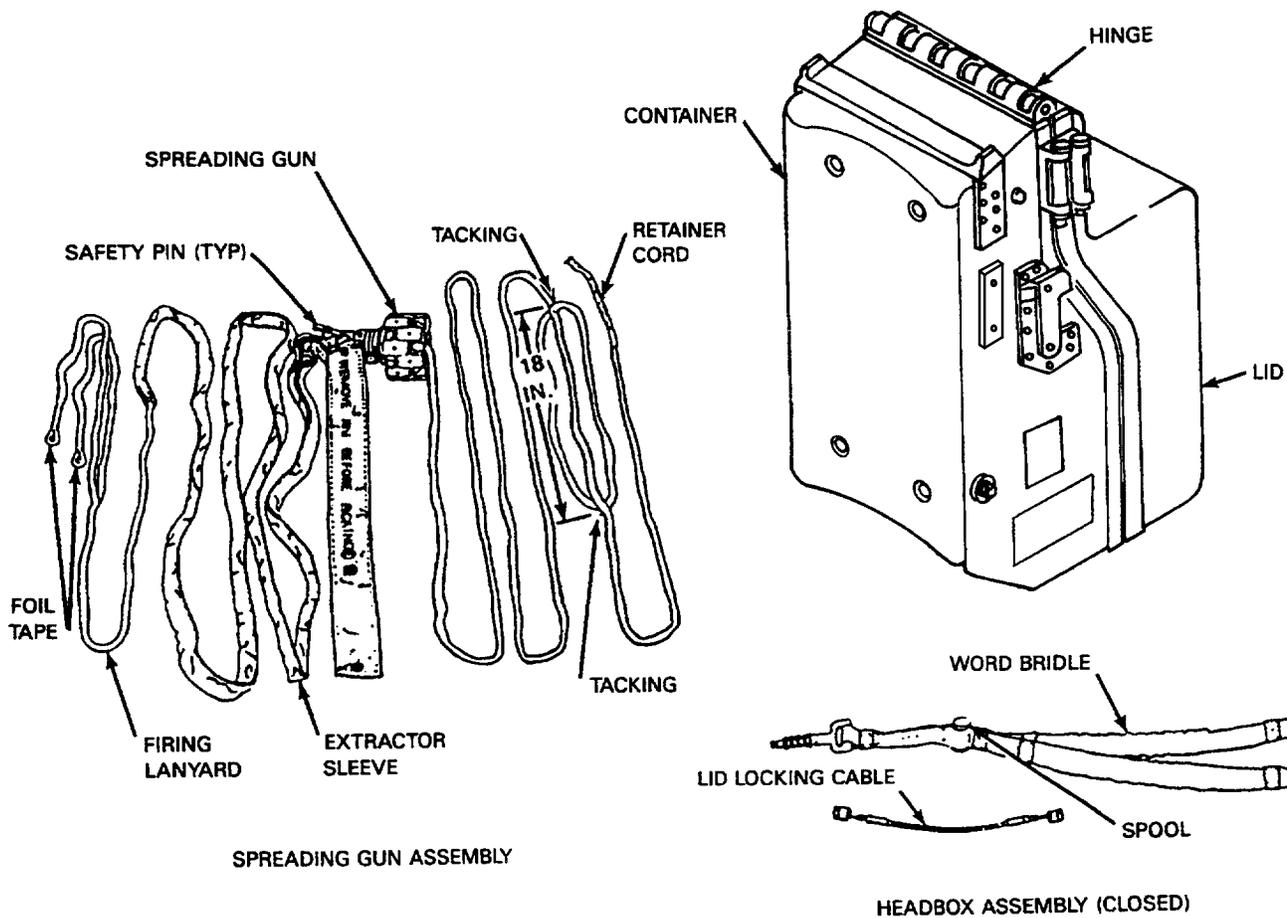
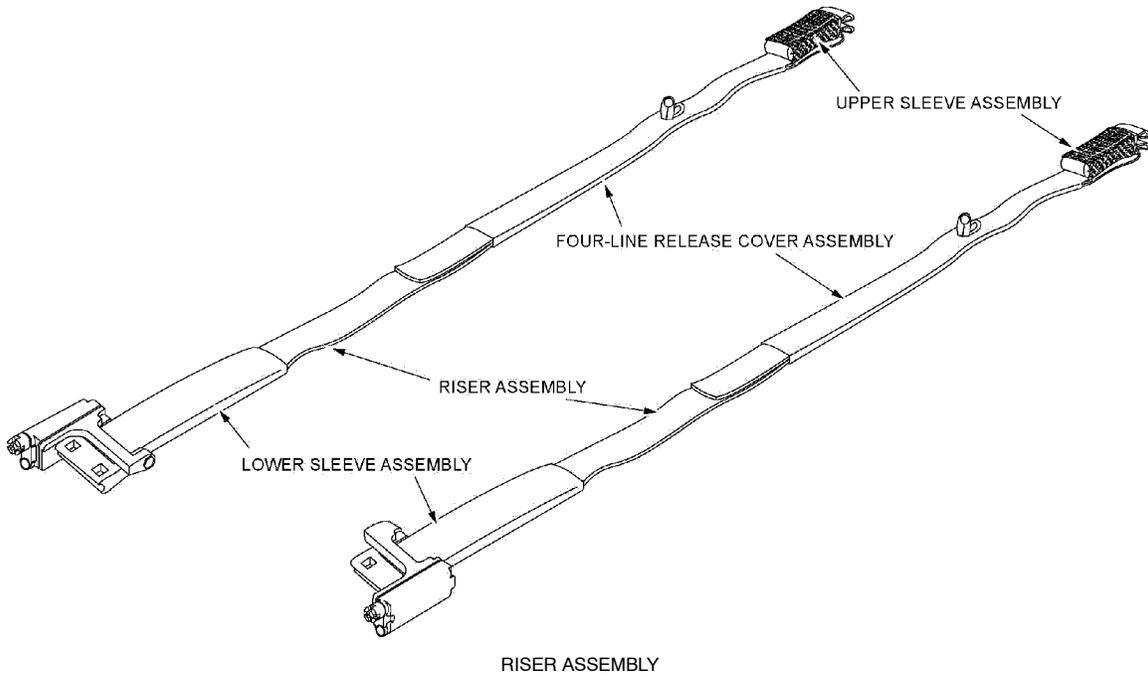


Figure 3. Subassemblies, A/P28S-28, -30, -31 (Sheet 2 of 2)

actuation fail, the aircrew may manually actuate the emergency oxygen system by pulling the green manual release located inboard of the aircrew's left knee. As the seat continues upward, the aircraft oxygen input hose and communication leads are pulled free from the aircraft at a quick-disconnect fitting. A check valve at the oxygen input connection point prevents emergency oxygen from venting to the atmosphere. After about 22-in. of seat travel, gas ports open and apply gas pressure to the drogue gun trigger rods in the catapult assemblies. This propels the drogue container from the seat. After about 31-in. of seat travel, gas pressure is ported to a 3.0-sec. delay initiator, a dual 0.10-sec. and 1.30-sec. delay initiator, and igniters of two seat back rocket motors and two seat divergence rocket motors.

9. MODES OF EJECTION SEAT OPERATION.

a. There are four modes of operation, depending on altitude and airspeed. Ejection starting sequence and post-ejection sequencing remain the same in all modes. The four modes are:

(1) Low speed/low altitude mode: below 225 ± 20 knots indicated air speed (KIAS) and below $7,000 \pm 750$ -ft.

(2) High speed/low altitude mode: above 225 ± 20 KIAS and below $7,000 \pm 750$ -ft.

(3) Intermediate altitude mode: between 7,000 and 14,000-ft.

(4) High altitude mode: above 14,000-ft.

b. The pilot may override the sequence of any mode by actuating the emergency restraint release handle, which fires the aircrew/seat separation initiator and provides ballistic gas to the inertia reel guillotine and actuates the WORD motor/drogue release assembly and parachute container opener.

10. SEAT STABILIZATION.

a. The drogue aligns the aircrew/seat combination in a face-to-line of flight attitude. The directional automatic re-alignment of the trajectory (DART) stabilization system provides aircrew/seat stabilization and control to correct any misalignment of aircrew/seat center of gravity versus the Seat Back Rocket thrust centerline. When the force on the DART lanyard reaches 200-lbs., the WORD strap retaining cables are withdrawn. With continued tension, the DART withdraws the bridle cables and restricts the arc of the DART. The lanyards then feed thru the brake assemblies. Brake assembly drag provides seat stabilization by controlling aircrew/seat pitch and roll rates.

11. PERSONNEL PARACHUTE DEPLOYMENT/SPREADING.

a. When the parachute container opener is actuated, a piston moves a release lever on the headrest assembly, which unlocks a swaged ball on the end of the cable holding the headrest assembly closed. The headrest assembly springs open and canopy deployment begins, propelled by the WORD bridle or drogue parachute/WORD bridle, or if the WORD bridle fails, by the internal pilot parachute.

b. During main canopy deployment, while tension is applied to the pilot parachute and the main canopy by the WORD bridle, the override/disconnect will secure the WORD bridle to the parachute. If there is no tension in the WORD bridle because of a failure in the WORD/drogue parachute system and the pilot chute has over 10 pounds of drag, the override/disconnect will function to jettison the drogue parachute, drogue bridle, WORD motor, and WORD bridle.

c. Shortly before full canopy and suspension line extension, a spreading gun firing lanyard that exerts tension on a spring loaded firing pin in the ballistic spreading gun assembly is pulled. The pin strikes and fires dual parallel primers, igniting the spreading gun cartridge. Cartridge energy propels 14 pistons that propel 14 slugs, attached to alternate suspension lines, in a 360-degree pattern that spreads the main canopy skirt. If the spreading gun fails to fire, continued pull on the firing lanyard will remove a piston retaining band, freeing the pistons, slugs, and suspension lines to allow conventional canopy inflation.

d. During canopy inflation, the Over-Inflation Control Line routed around the skirt of the parachute canopy will permit the canopy to fully inflate, but will reduce post-inflation by preventing further inflation. The aircrew descends suspended from the canopy by the risers and the PCU-33/P or PCU-56/P parachute restraint harness. 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. Upon landing, the aircrew disengages the canopy from the PCU-33/P or PCU-56/P parachute restraint harness by actuating the canopy release assemblies. The parachute harness sensing release units will provide an automatic backup method of releasing the risers after the aircrew makes a seawater entry.

12. AIRCREW/SEAT SEPARATION AND SURVIVAL KIT ASSEMBLY RELEASE.

a. Aircrew/seat separation and survival kit assembly release will occur automatically or can be accomplished manually after ejection. Manual release is used for ground emergency egress and release of survival gear for maintenance.

13. AUTOMATIC RELEASE.

a. As the personnel parachute inflates after the ejection sequence, both parachute risers exert a pull on the seat/man release lanyards, which rotate the seat pan release rod and fire the seat/man separation initiator. Gas pressure from the initiator then actuates the inertia reel strap guillotine. (Gas is also transmitted to the WORD motor/drogue release assembly and parachute container opener, but these devices will have operated previously.) Rotation of the seat release shaft releases the seat pan with the attached survival gear and disconnects the ejection control.

14. GROUND EMERGENCY EGRESS.

a. The emergency release control handle is pulled, which rotates the seat pan release rod, releasing the leg restraint straps and the seat pan with the attached survival gear from the seat, unlocking the personnel equipment connector block, and operating the linkage that fires the seat/man separation initiator. Initiator gases actuate the inertia reel strap guillotine, which severs the inertia reel straps. The aircrew can then disconnect his parachute canopy releases, stand up, and exit from the aircraft without encumbrance from his parachute. As the aircrew stands, the seat pan easily moves free from all restraint, and the personnel service leads pull free from their connections. In addition, activation of the seat/man separation initiator will ballistically release the WORD/drogue release and parachute container opener.

INTERMEDIATE AND DEPOT MAINTENANCE
PACKING PROCEDURES
A/P28S-28, -30, and -31 HEADREST ASSEMBLY
PART NO. 14090-21, 14090-19, 14690-17, and 14090-3

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Reference Material

Cartridge Actuated Devices (CADS) and Propellant Actuated Devices (PADS) (IETM)	NAVAIR 11-100-1.1
Introduction, Organizational, Intermediate and Depot Maintenance with Illustrated Parts Breakdowns, Emergency Personnel and Drogue Parachute Systems	WP 002 00
Organizational, Intermediate and Depot Maintenance, Illustrated Parts Breakdown, A/P28S-28, -30 and -31 Headrest Assembly	WP 022 03
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>
ACC 667, Part 2	11 Mar 02	A/P28S-28, A/P28S-30, A/P28S-31 Head-rest Assemblies in TAV-8B AV-8B Aircraft, Installation of Four-Line Release System and Over-Inflation Control Line. (WUC1774O, WUC174AO, WUC1749O). ECP-16416.	1 Jun 02	31 Dec 2004

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 procedure be interrupted after the operation has started. If the packing operation is interrupted due to unforeseen circumstances, the parachute assembly shall be completely repacked as detailed 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 later 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
—	Canopy Tie (4) -or-
Refer to WP 005 00	Shot Bag (4)
—	C-Clamp (2)
GGG-G-17	Gauge, Thickness, 0.002-in.
Refer to WP 005 00	Guide Tube
TMA2	Hex Head Driver 1/16-in. Bit
Refer to WP 005 00	Long Bar or Fid
Refer to WP 005 00	Modified Allen Wrench, 3/32-in.
FLUKE 77	Multimeter
Refer to WP 005 00	Packing Aid/Pull-up Cord
Refer to WP 005 00	Parachute Container Holding Fixture

Part Number	Nomenclature
472P950D053-1	Pin Assembly, Headrest
SK86-0089-1	Safety Pin Assembly (1)
—	Socket or Wrench, 1/2-in.
ST86-0064-3 or -5	Spreading Gun Test Fixture
Refer to WP 005 00	Temporary Locking Pin (1)
TQS6	Torque Meter
—	Wrench, 1/4-in., Open End
—	Wrench, 1/2-in., Open End
MS22021-1	Connector Link

Materials Required

Specification or Part Number	Nomenclature
O-E-760	Alcohol, Denatured
V-T-276	Thread, Nylon, Size 30/3, Red -or-
A-A-52094	Thread, Cotton Size 30/3, Red
PIA-C-5040	Cord, Nylon, Type I or IA
PIA-C-5040	Cord, Nylon, Type III
F-900 Torque Seal (Color Optional)	Sealing Compound
MIL-S-45180	Sealing Compound, Type II
MIL-S-46163	Sealing Compound, Type I, Grade K
1100/82	Spandex

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

3. LAYOUT OF RIGGED PARACHUTE ASSEMBLY.

WARNING

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

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

WARNING

Keep away from headbox assembly closure cable

- b. Open headbox assembly as follows:

- (1) Apply hand pressure to lid and then remove right locking pin of safety pin assembly and unlock right release.
- (2) Rotate lid slightly upward and grasp pilot parachute, preventing it from springing from container.
- (3) Continue rotation and remove lid from container.
- (4) Remove left locking safety pin assembly, unlock left release, and remove cable assembly.

WARNING

Do not remove folded canopy any more than necessary to install spreading gun safety pin.

- c. Carefully remove folded canopy from container until spreading gun is accessible. Open fastener on extractor sleeve and fully insert safety pin into spreading gun. The safety pin button must be depressed to insert pin (Figure 1). (QA)

- d. Remove remaining canopy and spreading gun from container.

WARNING

Firing lanyard must not remain attached to connector links.

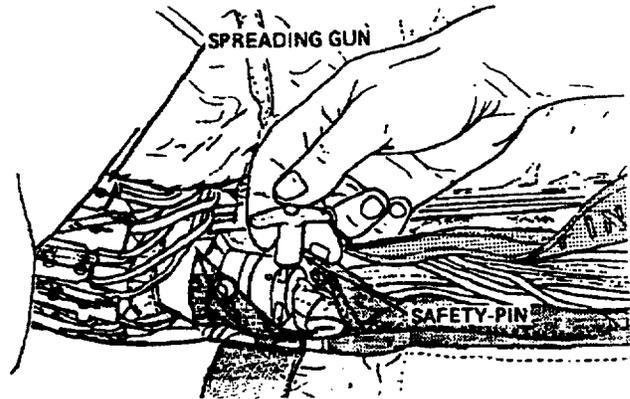


Figure 1. Safety Pin Installation

6.2-5520

- e. Remove spreading gun firing lanyard from both bottom connector links, and connector links from container. Hold cross-connector strap bolt by using a 1/2-in. open end wrench and remove nut with 1/2-in. socket or wrench. Replace nut on bolt after removal of lanyard. (QA)

- f. Stretch canopy and suspension lines full length on packing table. Rotate spreading gun so that suspension lines 1 and 28 are facing up and lines 14 and 15 are on bottom (Figure 2).

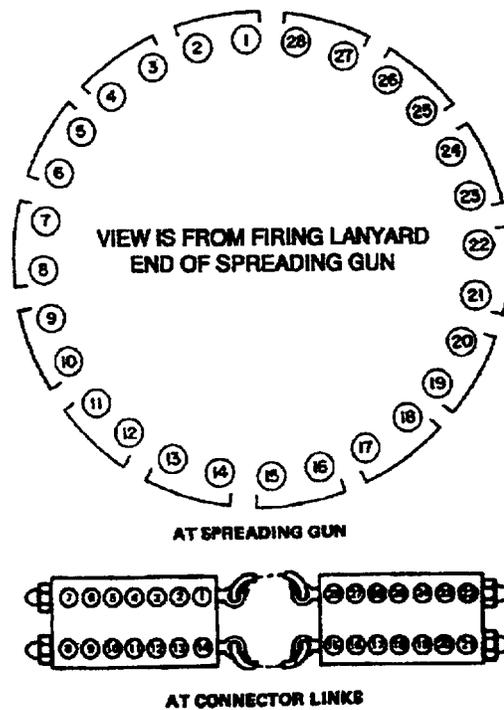


Figure 2. Suspension Line Arrangement

6.2-5428

- g. Attach tension strap hook to apex lines.
- h. At spreading gun, separate suspension lines into four equal groups with lines 1 thru 7 and 8 thru 14 on packer's side and lines 15 thru 21 and 22 thru 28 on helper's side (Figure 2).
- i. Grasp each group of lines and walk from skirt hem to connector links, removing any twists between groups.
- j. Remove tackings on lower sleeves and slide sleeves up risers. Unfold lower portion of riser; place a connector link (MS22021-1 or equivalent) through loop in riser. Insert tension hooks into connector links and hook into table.
- k. Apply tension to canopy until suspension lines are taut.
- l. Pull vent collar down toward canopy. Align exposed vent hem (Figure 3).

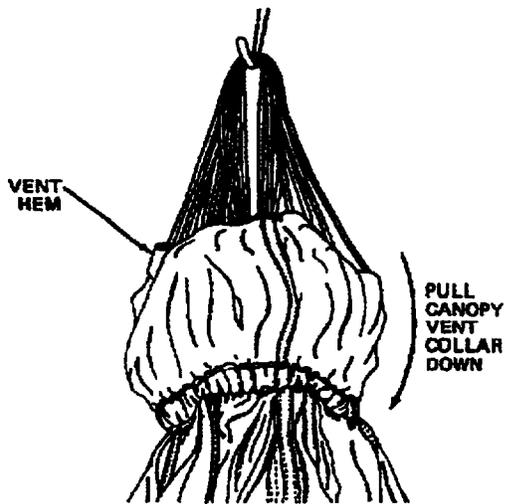


Figure 3. Vent Hem Adjustment

6.2-5521

- m. Pull vent collar back to original position. Release tension to canopy.
- n. Open remainder of spreading gun extractor sleeve fasteners.
- o. Release fastener securing stowage sleeve to extractor sleeve.
- p. Remove stowage sleeve from extractor sleeve.
- q. Remove all suspension line stow ties from container attachment points.

4. 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

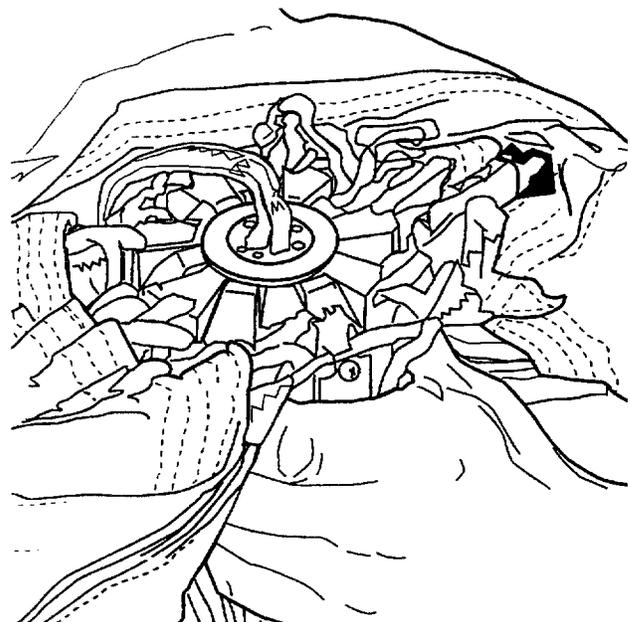
Use only special tool furnished for cartridge removal. A helper will assist the person doing the cartridge removal.

- 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 4).



6.2-5922A

Figure 4. Spreading Gun Position

- c. Packer will place pins of cartridge extractor wrench in holes in cartridge. Loosen cartridge (Figure 5).

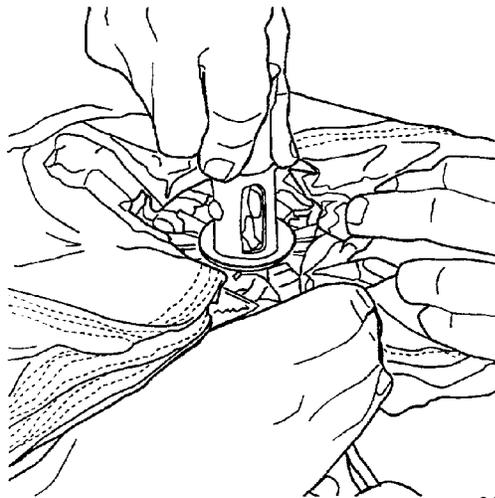


Figure 5. Spreading Gun Cartridge Removal

NOTE

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

- d. Manually unscrew and remove cartridge from chamber.
- e. Remove cartridge from retainer cord by removing pin. Retain pin for reinstallation.
- f. Store cartridge per NAVAIR 11-100-1.1.
- g. Apply tension to canopy until suspension lines are taunt.

5. INSPECTION (SPECIAL).

- a. Maximum scheduled repack cycle is 448 days.

6. 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. The Over-Inflation Control Line shall be changed with the parachute canopy.

- i. 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 MW19	Refer to NAVAIR 11-100-1.1	
Cross-Connector Strap	(See Note 1)	(See Note 1)
Electronics Package Assembly	None	8
Pilot Parachute		15
Pilot Parachute Bridle	None	15
Riser Assembly	None	10
Spreading Gun	None	11 1/2
Word Bridle	None	10

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 022 03 Illustrated Parts Breakdown.

7. 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, proper routing of Over-Inflation Control Line through spreading gun anchor loops.
- 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. (QA)
- g. Retaining cord for 76 1/2-in. mark measured from lower end of connector link loop. This mark will indicate the location for tacking the over-inflation control line during parachute packing.
- h. Firing lanyard for proper stowage in stowage sleeve channels and presence of tacking (Figure 6). (QA)
- i. Over-Inflation Control Line for contamination, fraying, twists, cuts, loose or broken tackings, and security of attachment.

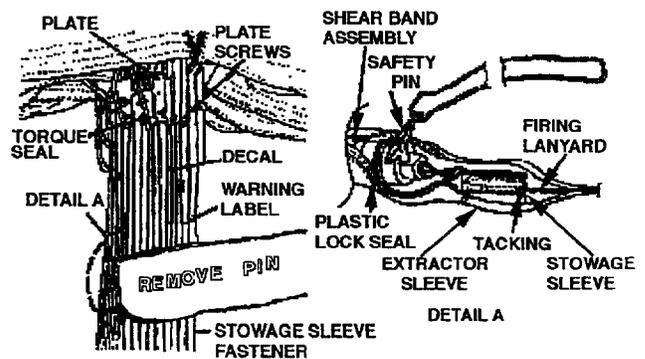


Figure 6. Firing Lanyard Stowage

6.2-1136

8. INSTALLATION OF PULL FORCE CHECK AND SPREADING GUN CARTRIDGE.

- a. Clamp spreading gun test fixture (Figure 7) to packing table, with one C-clamp.
- 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 7).

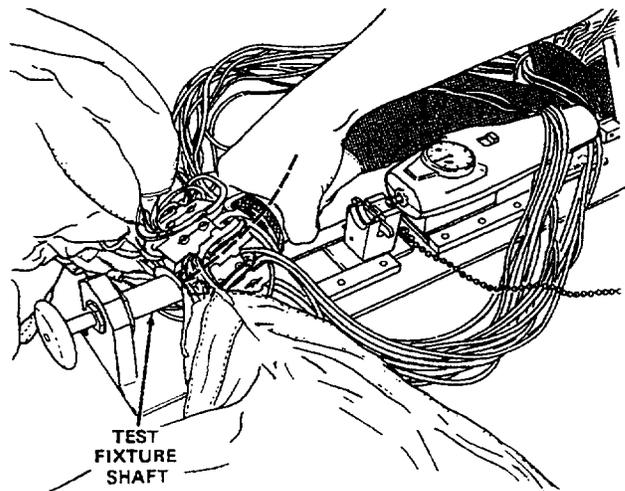


Figure 7. Spreading Gun Installation

6.2-1499

- e. Slide block assembly at center of test fixture under firing pin housing until block assembly pin slides into base plate hole. Align firing pin subassembly so that eye is horizontal and firing lanyard is located on top (Figure 8).

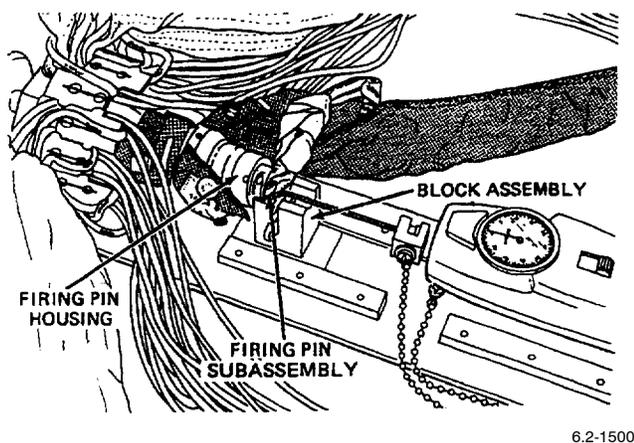


Figure 8. Spreading Gun Alignment

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

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

CAUTION

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

h. Pull test fixture lever until firing pin subassembly releases. Verify pull force is 32 ± 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

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

j. Push firing pin subassembly back into housing. Push control disc firmly inward, forcing firing pin subassembly out of housing. Apply inward hand pressure to firing pin subassembly as it moves out. Continue to move control disc inward, applying hand pressure to firing pin subassembly un-

til it clicks into place. When click is heard, gun is cocked. Gently release control disc while still exerting pressure on firing pin subassembly.

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

l. 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. If using old cartridge, clean threads.

CAUTION

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

m. 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.

n. 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)

o. 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 9).

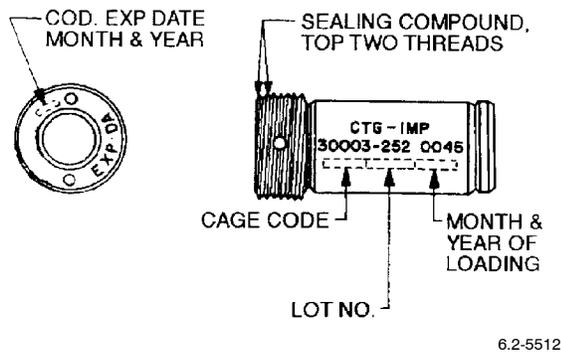


Figure 9. Spreading Gun Cartridge Marking

p. Apply MIL-S-45180 Type II sealing compound to top two threads of cartridge (Figure 10).

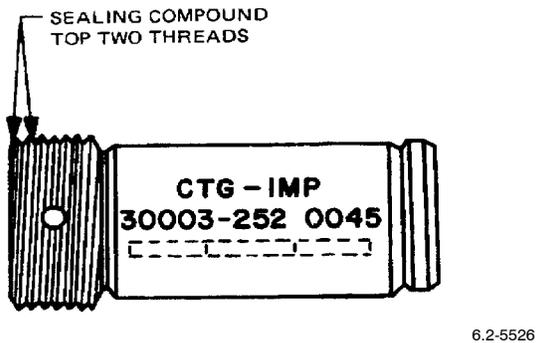


Figure 10. Spreading Gun Cartridge Installation

q. 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 11).

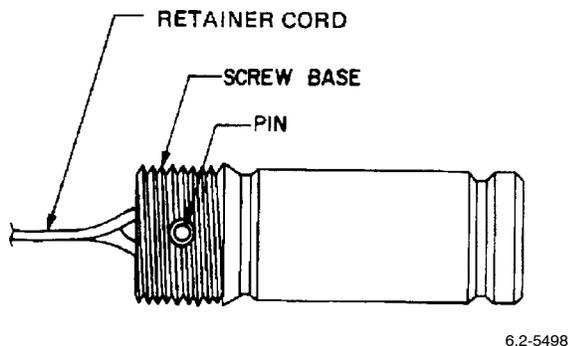


Figure 11. Retainer Cord Attachment

r. Helper will place spreading gun on packing table, with cartridge opening in upright position and hold (Figure 4).

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.

NOTE

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.

CAUTION

Ensure that there are no twists in the retainer cord after installing Spreading Gun cartridge as this could interfere with the proper functioning of the Over-Inflation Control Line.

s. 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.

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

9. SUSPENSION LINE CONTINUITY.

a. Ensure spreading gun with suspension lines 1 and 28 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 12). (QA)

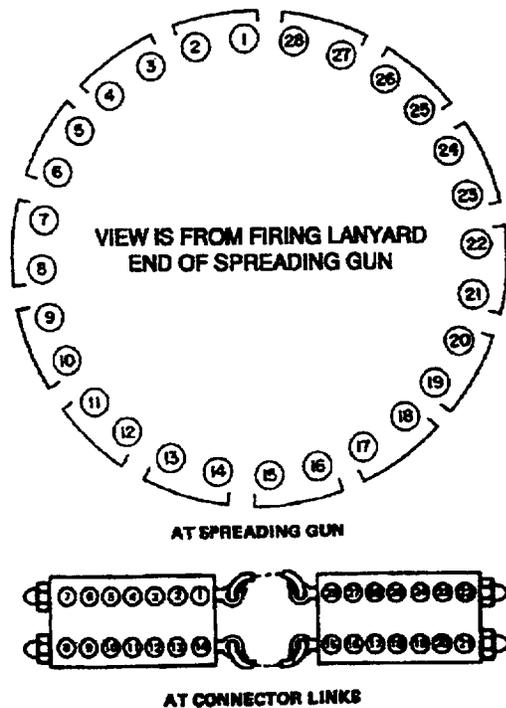


Figure 12. Suspension Line Arrangement

10. CANOPY ASSEMBLY.

- a. Canopy skirt hem, fabric surface, diagonal seams, radial seams, vent hem, water deflation pockets, for cuts, holes, ruptures, contamination, deterioration, and loose or broken stitching.
- b. Suspension lines and canopy apex lines for fraying, ruptures, protruding inner core lines, burns, contamination, and presence of twists.
- c. Suspension line yarn for snags, loops, or filaments protruding outward from the main suspension line beyond 1/2 in.
- d. Lines and spreading gun anchor loops for security of attachment at skirt hem.
- e. Connector links for corrosion, distortion, bends, dents, nicks, burrs, sharp edges, and cracks.
- f. Connector link rubber seals for damage and deterioration.
- g. Cross-connector strap for contamination, cuts, fraying, burns, and loose or broken stitching.
- h. Attachment of Four-Line Release anchor loops to suspension lines 3 and 26.

- i. Attachment of Four-Line Release Lanyard to anchor loops on suspension lines 3 and 26.
- j. Inspect Four-Line Release Lanyard for fraying, rupture, and cuts.
- k. Activate the Four-Line Release System and reassemble per Paragraph 17. (QA)

11. PILOT PARACHUTE/BRIDLE AND WORD BRIDLE.

- a. Pilot Parachute as follows:
 - (1) Fabric surfaces and seams for cuts, tears, fraying, and loose or broken stitching.
 - (2) Vane Material for cuts, tears, burns, fraying, and deterioration.
 - (3) Seam area at crown for seam separation.
 - (4) Spring assembly for distortion.
 - (5) Loose or broken tackings (4 places each) at bottom and top of coil spring.
 - (6) Cone and grommet for security and condition.

- b. Pilot parachute bridle as follows:
 - (1) Bridle for contamination, cuts, fraying, burns, loose or broken stitching, and tacking of housing.
 - (2) Housing and sear for corrosion, distortion, dents, cracks, and nicks.

- c. WORD bridle as follows:
 - (1) WORD bridle for contamination, cuts, fraying, burns, and loose or broken stitching, tacking, and elasticity of Spandex.
 - (2) Override disconnect release pin for corrosion, distortion, dents, bends, nicks or cracks; presence and security of spring.
 - (3) Spool for nicks, dents, distortion, and cracks.

12. HEADBOX CABLE ASSEMBLY AND SAFETY PIN.

- a. Liner for tears, proper installation, damaged attachment points (stowage loops), and locking loops, or any other condition that will hamper or interfere with closing the container.

- b. Liner plate for bends and distortion.
- c. Container for sharp edges, cracks, splits, and holes.
- d. Protector flap for holes, frayed, or broken stitching, and contamination.
- e. Lid for warping and cracks; gasket, seal, and spacer for security of attachment, and condition.
- f. Cable for corrosion, kinks, or fraying.
- g. Safety pins for ease of operation, presence of two locking balls, and condition of flag.

13. RISERS.

- 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. Riser retainer strap, for loss of elasticity, unstretched length measured from snap to snap must not exceed 9-in.
- c. Riser stowage pouch for security, broken stitches, torn or frayed closure flaps, and flaps for correct closure.
- d. Riser four-line release cover assembly, upper sleeve assembly, and lower sleeve assembly for cuts, contamination, excessive wear, abrasions, extreme fading, and loose or broken stitching.
- e. Inertia reel straps for contamination, cuts, fading, wear, burns, and abrasions.
- f. Seat release lanyards for damage, loss of elasticity, and security of attachment.
- g. Four-Line Release Cover Assembly for excess contamination, cuts, fading, wear, burns abrasions. Ensure the two 6-cord tackings made on the lower end of the cover assembly near the parachute connector links are made properly and in place.
- h. Inspect Lower Sleeve Assembly for excess contamination, cuts, fading, wear, burns, abrasions, and ensure that the two 6-cord tackings securing it to the riser are properly made an in place.
- i. Ensure that the tab extension on the Lower Sleeve Assembly is properly wrapped around the riser webbing and tucked into itself to properly protect the riser webbing.
- j. Inspect the slide fastener on the lower side of the riser covers to ensure that it has not become separated in places along the length of the riser. Ensure that the tackings on each end of the slide fastener are properly made and in place.
- k. Inspect the Upper Sleeve Assembly for excess contamination, cuts, fading, wear, burns abrasions, and ensure that the four FF thread tackings securing it to the riser are properly made and in place.
- l. Ensure that the Headrest Pouch Assembly Flaps are properly stowed between the upper and lower riser webbing and connector link sleeves. Bolts may rotate in connector link assemblies. Check for the torque seal on the bolt head area on each connector link.

14. PACKING.**15. INSTALLATION OF OVER-INFLATION CONTROL LINE.**

- a. Prior to installing spreading gun and after installation of upper retaining lanyard, install the Over-Inflation Control Line as follows:

(1) Cut off a minimum amount of the ends of the Over-Inflation Control Line to eliminate the seared ends.

(2) Measure 6-in. from each end of the Over-Inflation Control Line and mark with an indelible pen.

(3) Find the center of the Over-Inflation Control Line by holding the two marks made in the previous step and mark the center with an indelible pen.

(4) Divide the line into four equal sections by holding the three marks together that were made in the previous two steps and mark the two points with an indelible pen.

(5) Pull the Spreading Gun Assembly Upper Retaining Lanyard out from below the canopy skirt and measure 76 1/2-in. from its lower end and mark with an indelible pen. Pull the apex of the canopy back to the top of the packing table.

NOTE

Ensure that Spreading Gun anchor loops are not Twisted during installation of the Over-Inflation Control Line.

(6) Rig the Over-Inflation Control Line into the canopy by starting at the name plate gore and taking one end of the line and routing it through the inside of each suspension line and through each of the spreading gun assembly anchor loops in accordance with Figure 13. (QA)

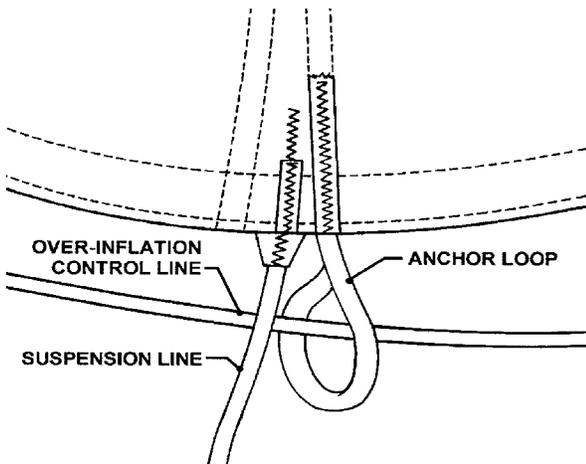


Figure 13. Over-Inflation Control Line Routing

NOTE

Ensure that the Over-Inflation Control Line is not wrapped around any of the Spreading Gun Assembly anchor loops or is routed outside of the suspension lines.

(7) After the Over-Inflation Control Line is routed through each Spreading Gun Assembly anchor loop, use a bodkin to finger trap each end of the control line into the opposite end a distance of 6-in. until the two marks meet (Figure 14). Using a needle and a piece of waxed single 6-cord nylon thread, secure the finger trappings in place with a running stitch approximately 6-in. long (2-4 stitches per inch). Tie off with a surgeon's knot followed by a square knot.

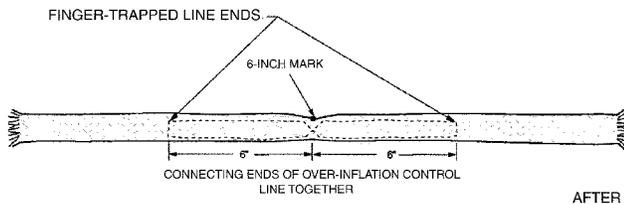
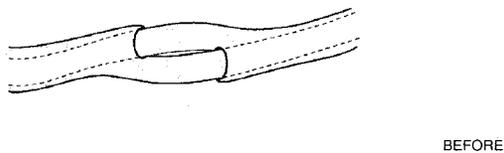


Figure 14. Finger Trapped Ends of the Over-Inflation Control Line

(8) Install Spreading Gun Assembly, Spreading Gun Assembly Cartridge and upper retaining lanyard to Spreading Gun Assembly.

16. TACKING OF OVER-INFLATION CONTROL LINE.

a. Pull upper retaining lanyard and canopy apex toward connector links until 76 1/2-in. mark on the lanyard is visible. (Upper portion of canopy will be inside out at this point).

b. Align the Over-Inflation Control Line bites from between slug plates 1 and 28 and 19 and 20 with the 76 1/2-in. mark made on the Spreading Gun Assembly retaining lanyard. Using a needle and a piece of nylon A-Thread (single, one-turn), run the needle and thread through the width of the Over-Inflation Control lines, then through the upper retaining lanyard and tie off with a surgeon's knot followed by a square knot (Figure 15). (QA)

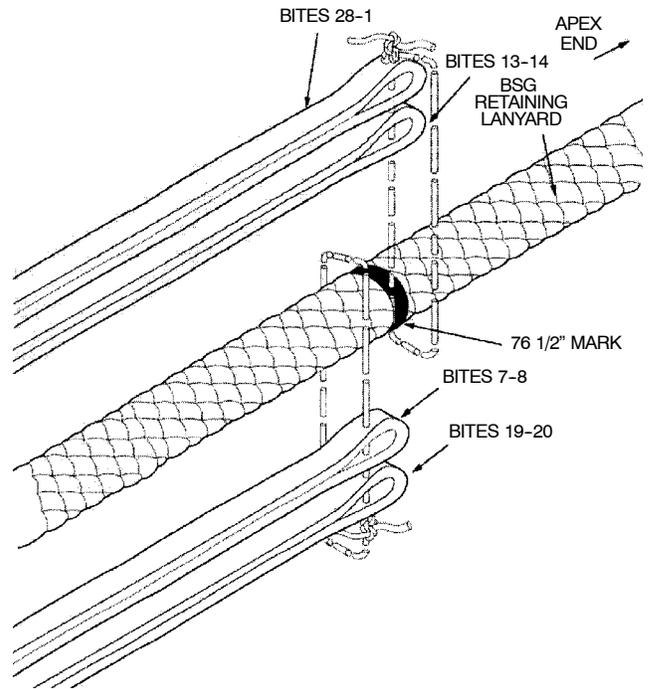


Figure 15. Over-Inflation Control Line Attachment

c. Align the Over-Inflation Control Line bites from between slug plates 7 and 8 and 13 and 14 with the 76 1/2-in. mark made on the Spreading Gun Assembly retaining lanyard. Using a needle and a piece of nylon A-Thread (single, one-turn), run the needle and thread through the width of the Over-Inflation Control lines, then through the upper retaining lanyard and tie off with a surgeon's knot followed by a square knot. (Figure 15). (QA)

d. Route upper portion of upper Spreading Gun Assembly retaining lanyard back between gores 1 and 8, up center of canopy until canopy is stretched out taking care not to break the A-thread tackings. (QA)

17. FOUR-LINE RELEASE LANYARD RIGGING.

Support Equipment Required

Part Number	Nomenclature
Refer to WP 005 00	Bodkin

Materials Required

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

NOTE

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

- a. Place parachute canopy under slight tension on packing table.
- b. Ensure that Four-Line Release Lanyards are properly routed through Daisy Chain Protection Covers.
- c. Ensure that suspension lines 2/27 are properly routed through Daisy Chain Protection Cover and route them over and then under the cross-connector strap eyebolt so that the suspension line loop extends several inches from the eyebolt.
- d. Ensure that suspension lines 1/28 are properly routed through the Daisy Chain Protection Cover and route them over and then under the cross-connector strap eyebolt so that the suspension line loop extends several inches from the eyebolt.
- e. Turn connector link over towards the inside of the left and right-hand risers so that the loops on suspension lines 1/28 and 2/27 are facing up (Figure 16).

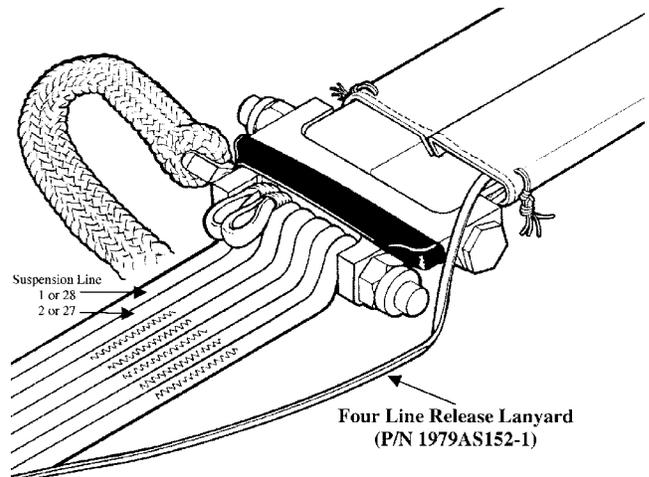


Figure 16. Suspension Line Routing (1 and 2 or 27 and 28)

f. Make loops in suspension lines 1/28 and 2/27. Pass loops made in suspension lines through telescoped loop at end of suspension lines (Figure 17).

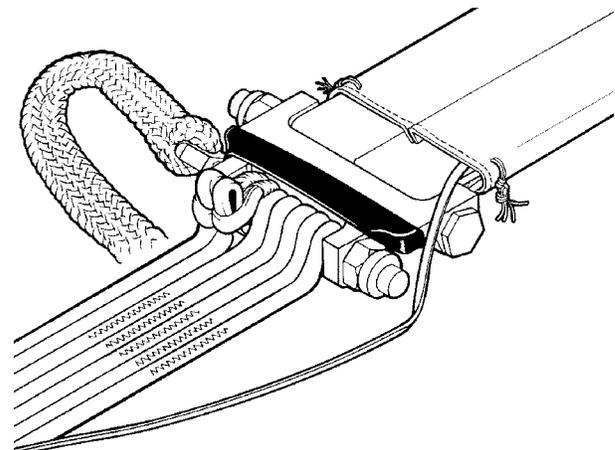


Figure 17. Loop in Suspension Line (1 and 2 or 27 and 28)

- g. Hold loops and tighten suspension lines 1/28 and 2/27 against eyebolts.
- h. Align the 35-in. mark and the 9-in. mark on the Four-Line Release Lanyard to make a 4 1/2-in. loop.

NOTE

Ensure loops are tight around the eyebolt.

i. Pass the 4 1/2-in. loop in the Four-Line Release Lanyard through the loops made in suspension lines 1/28 2/27. The release lanyard loop will enter through suspension line number 2/27 and exit through suspension line number 1/28. The 35-in. mark and the 9-in. mark should be aligned at the point where the release lanyard enters suspension line 2/27 (Figure 18).

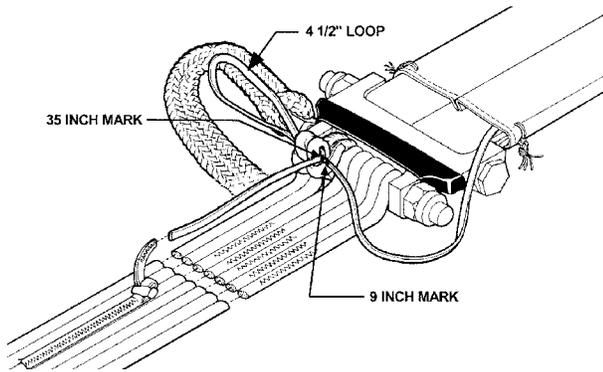


Figure 18. Four-Line Release Lanyard Routing

j. Pull the portion of the Four-Line Release Lanyard with the 9-in. mark (lower portion of the lanyard) back from its position a couple inches from the eyebolt where the two marks are aligned so that a 1/2-in. loop extends outward from suspension line 1/29 (Figure 19).

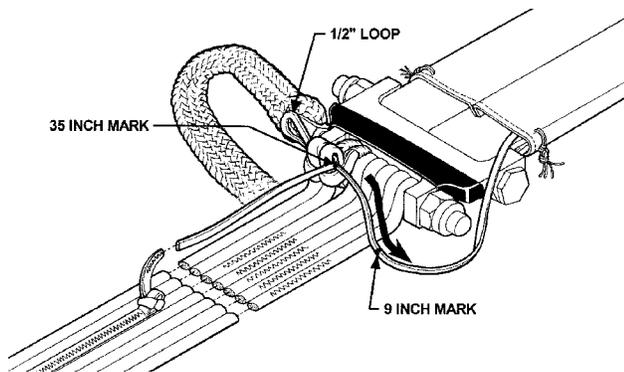


Figure 19. 1/2-inch Loop in Four-Line Release Lanyard

k. Make a loop in the lower section of the Four-Line Release Lanyard as it extends from suspension line 2/27 and pass this loop through the 1/2-in. loop made in step j.

NOTE

While tightening the loop in place, ensure that the 35-in. mark on the Four-Line Release Lanyard is aligned between suspension line 2/27 and 3/26.

l. Tighten both loops together.

m. Construct four more loops to form a daisy chain coupling within the 9-in. reference mark (five total). The 9-in. mark should be at the top of the final daisy chain loop (Figure 20). (QA)

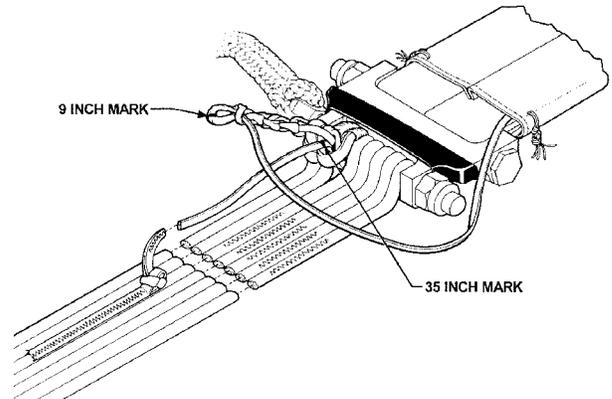


Figure 20. Daisy Chain With Five Loops

n. Mark 1 1/2-in. up from the end of the suspension line on line 3/26 and mark this measurement with an indelible pen. Lay daisy chain coupling completed in step 1 next to suspension line 3/26 and align the 9-in. mark on Four-Line Release Lanyard with the 1 1/2-in. mark on suspension line 3/26 (Figure 21).

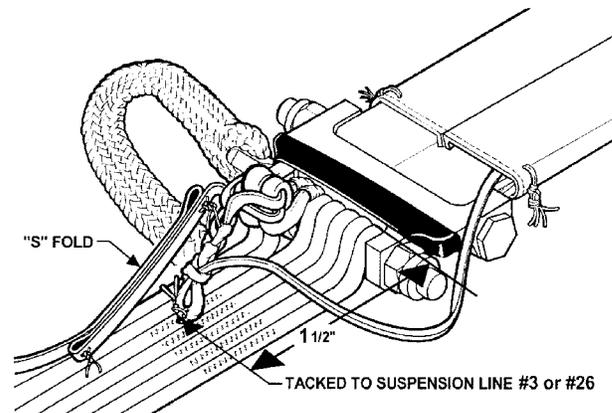


Figure 21. Daisy Chain Tacking and "S" Fold

NOTE

Ensure upper portion of Four-Line Release Lanyard is routed outboard of suspension line 3/26.

o. With a needle and a piece of waxed Size FF thread (single, one turn), route needle through suspension line 3/26 at the 1 1/2-in. mark and then through the Four-Line Release Lanyard (not around) at the 9-in. mark, and then return the needle back through suspension line 3/26 at the 1 1/2-in. mark. Tie off with a surgeon's knot followed by a square knot (Figure 21).

p. Apply tension to the suspension lines and conduct a line continuity check ensuring lines are not crossed beneath the Daisy Chain Protection Cover. (QA)

q. With tension on the risers and suspension lines, pull the Four-Line Release Handle with a pull gage and ensure the lines are released with less than 50-lbs of tension. (QA)

r. Inspect the released suspension lines and ensure proper release from the eyebolt.

s. With pile fastener on Four-Line Release Handle facing down, restow Four-Line Release Handle Assembly into sleeve by pulling four-line release lanyard from the top of the riser (at the connector link). Bottom edge of yellow tab on handle should be approximately 1-in. from the end of the pile fastener when handle is fully stowed within the riser assembly.

t. Re-rig the daisy chain formation in accordance with steps b thru p.

u. In order to reduce the slack in the Four-Line Release Lanyard between the 35-in. mark and the anchor loop, construct one S-fold approximately 2-in. long and tack to the release lanyard (itself), under the daisy chain coupling, at each end with A-thread (single, one turn) using a surgeon's knot followed by a square knot. Tie each thread end off with a binder knot (Figure 21). (QA)

NOTE

Ensure excess slack in the Four-Line Release Lanyard is tucked within the channel and not between the channel and cover.

v. After forming the daisy chain, there will be excess slack in the Four-Line Release Lanyard between the daisy chain and handle assembly. Pull excess slack out hole in cover where seat-man separation lanyard attachment point protrudes. Using a bodkin, insert it into the opening on each riser where the seat/man separation lanyard is attached and carefully push the excess lanyard down in the channels toward the Four-Line Release Handle in small bites (approximately 2 - 3 in.) until all slack is taken up. (QA)

w. Slide Daisy Chain Protective Cover down over the daisy chain such that it butts against the connector link cross bar.

x. Using a needle and a piece of waxed Size FF nylon thread, (single, one turn) tack the cover in position in two places. At the end of the cover nearest the connector link, penetrate the cover only and route the thread around the connector link, back through the cover and tie off at the cover with a surgeon's knot followed by a square knot. At the upper

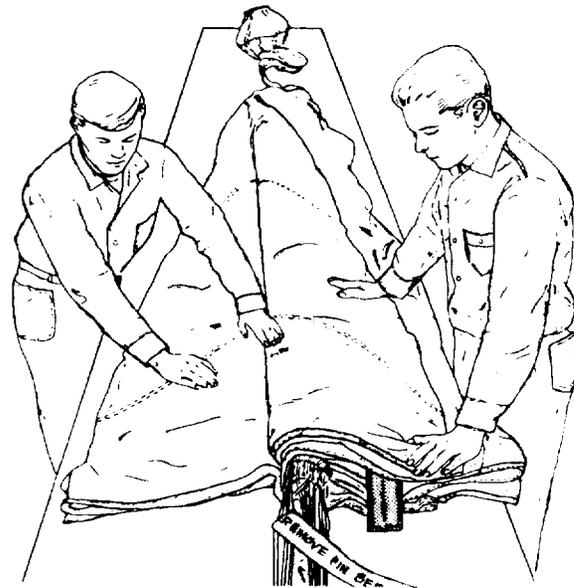
end of the cover, the tacking should go through the cover and suspension line 3/26 before being tied off with a surgeon's knot followed by a square knot (Figure 21).

y. Repeat steps a thru x for the opposite riser.

18. STRAIGHTENING CANOPY GORES.

a. Apply tension to canopy. Helper shall place a shot bag on helper's side of skirt hem.

b. 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 22).



6.2-6212

Figure 22. Straightening and Smoothing Gores

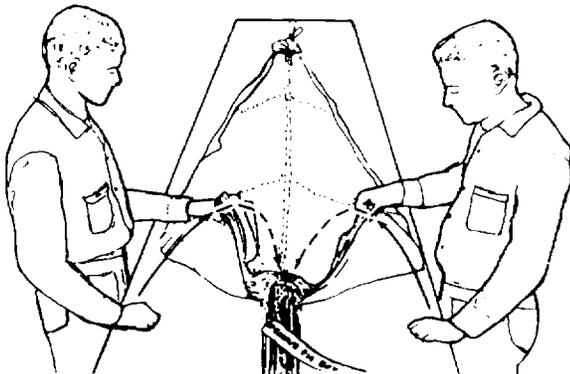
c. Packer shall return gores above shot bag on helper's side of packing table to packer's side one at a time. Each fold shall be straightened and smoothed.

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

e. 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.

f. 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.

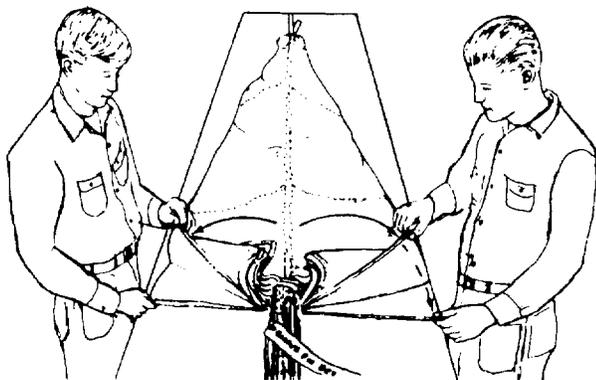
g. Packer and helper shall grasp skirt hem at mid-sections of gores and rotate toward suspension lines (Figure 23).



6.2-6212A

Figure 23. Rotate Skirt Hem to Suspension Lines

h. Each fold shall be aligned and counted when placed back onto table (Figure 24).



6.2-6212B

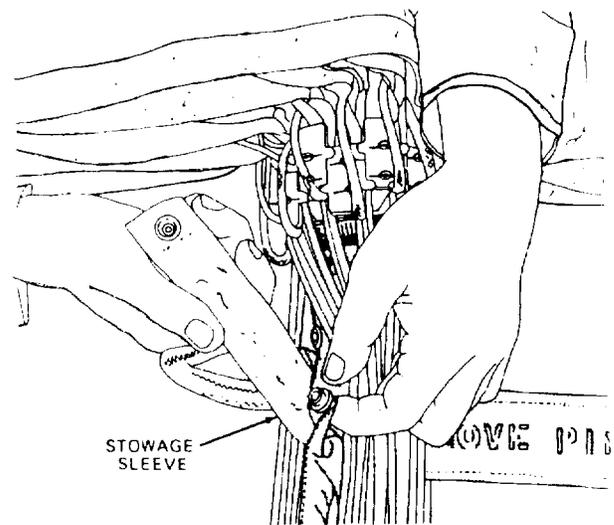
Figure 24. Align and Count Folds

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

19. STORAGE OF STOWAGE SLEEVE IN EXTRACTOR SLEEVE.

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

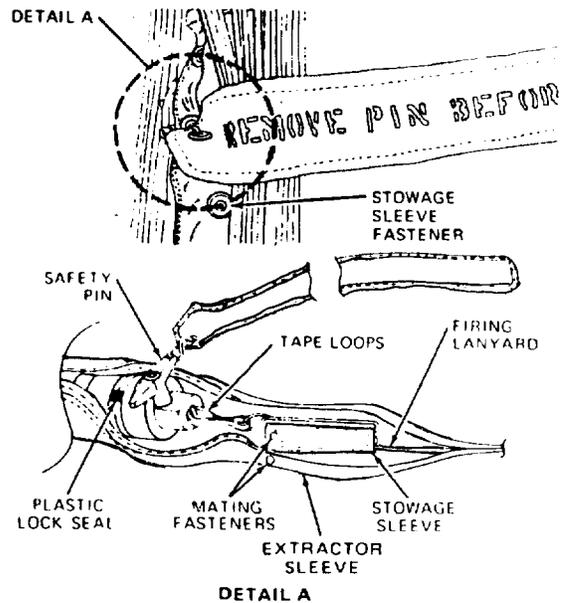
b. Insert stowage sleeve into extractor sleeve open end first (Figure 25).



6.2-5431

Figure 25. Insert Stowage 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 26). (QA)

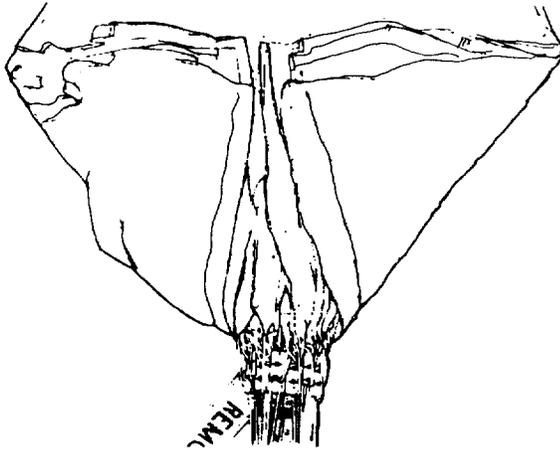


6.2-5431A

Figure 26. Attach Stowage Sleeve to Extractor Sleeve

20. FOLDING OF CANOPY GORES.

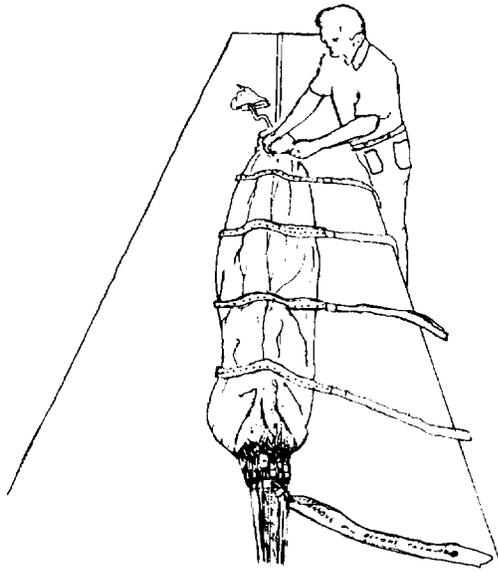
a. Fold skirt hem at a 45-degree angle to centerline of canopy (Figure 27).



6.2-6506

Figure 27. Fold Skirt Hem

b. Fold the outer edges of folded canopy over the center to a width of 8-in. Tie canopy in four places an equal distance apart, or lay four shot bags out on the folded canopy an equal distance apart (Figure 28).



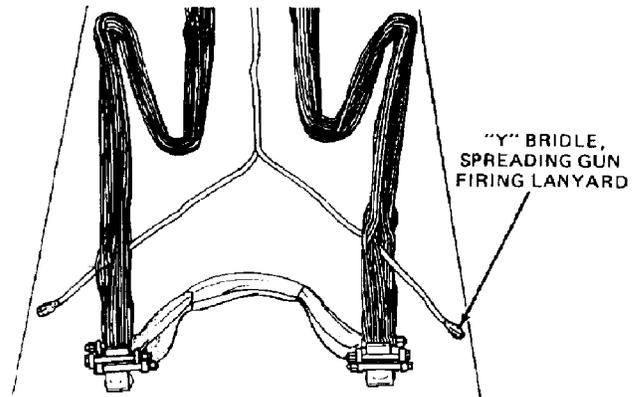
6.2-6506A

Figure 28. Fold Outer Edges

21. ATTACHMENT OF FIRING LANYARD TO CONNECTOR LINKS.

a. Remove tension strap from canopy apex.

b. Slide canopy towards connector links and form S-folds in suspension lines large enough to allow loops in end of firing lanyard to align with connector links (Figure 29).



6.2-5443

Figure 29. Attachment of Firing Lanyard

c. Pass one leg of firing lanyard under line group 1 thru 7 and other leg under line group 22 thru 28 (Figure 29).

d. While holding cross-connector strap bolt with a 5/16-in open-end wrench, remove nuts from bottom connector links containing line groups 8 through 14 and 15 through 21.

CAUTION

Do not allow the 5/16-in. open end wrench to rotate and contact the seal during tightening procedure as it will damage the seam.

e. Attach left leg outboard of line 8 and right leg outboard of line 21 (Figure 29).

f. Apply Sealing Compound, MIL-S-46163, Type I, Grade K to first two bolt threads, reinstall nuts, and tighten against link using a 5/16-in. open end wrench to hold cross-connector strap bolt and a 1/2-in. socket or wrench on nut. With flat surface of eyebolt bottomed against connector link, tighten down nut until it bottoms on fillet radius of connector link. Then back off nut about one-half turn so that eyebolt is free to turn within connector link. (QA)

22. INSTALLATION OF CONNECTOR LINK TIES.

a. Remove connector links from tension hooks.

b. Tie two left connector links together with an 18-in. length of Type I or IA nylon cord. Fold line in half, slip loop end thru link adjacent to lines 1 and 14, and form a Lark's head knot. Do not cut excess (Figure 30).

c. Tie two right connector links together with an 18 in. length of Type I or IA nylon cord. Fold line in half, slip loop end thru link adjacent to lines 15 and 28, and form a Lark's head knot. Do not cut excess (Figure 30).

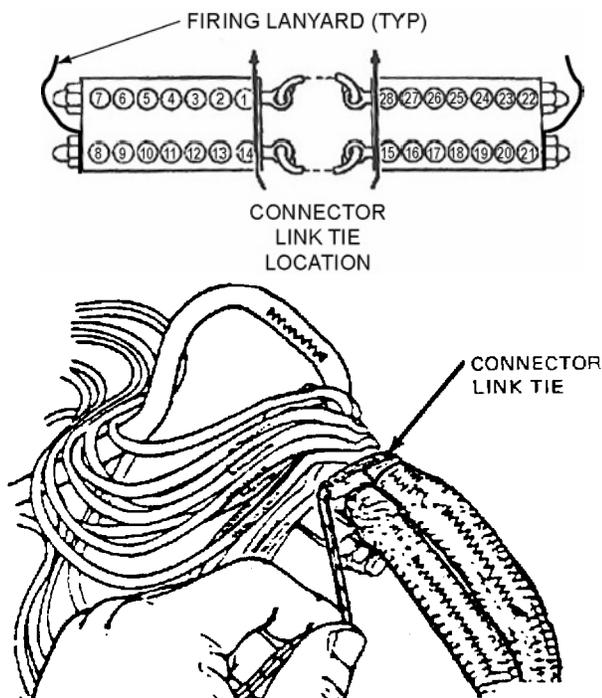
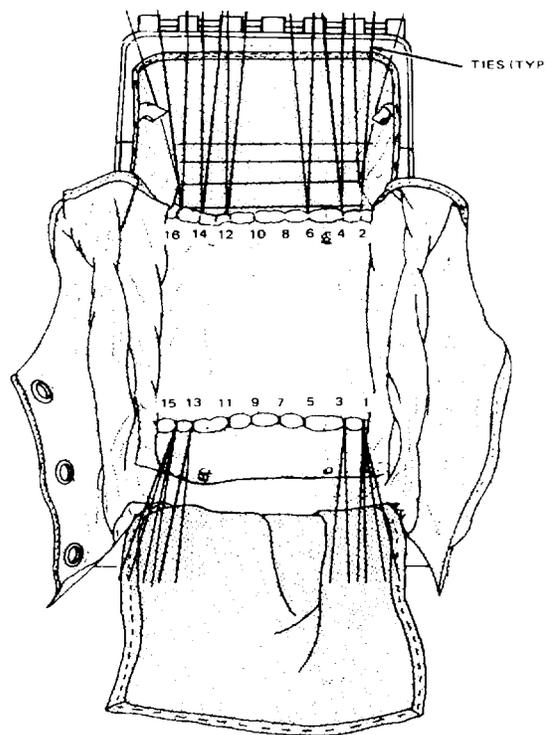


Figure 30. Connector Link Ties

6.2-5482

23. INSTALLATION OF SUSPENSION LINE TIES TO CONTAINER ATTACHMENT POINTS.

- a. Cut 12 lengths of size 30/3 red thread about 36-in.
- b. Using a Lark's head knot, attach a single tie to attachment points 1, 2, 3, 4, 6, 12, 13, 14, 15, and 16 (Figure 31).
- c. Using a Lark's head knot, attach another single tie to attachment points 1, and 15 (Figure 31).



6.2-6507

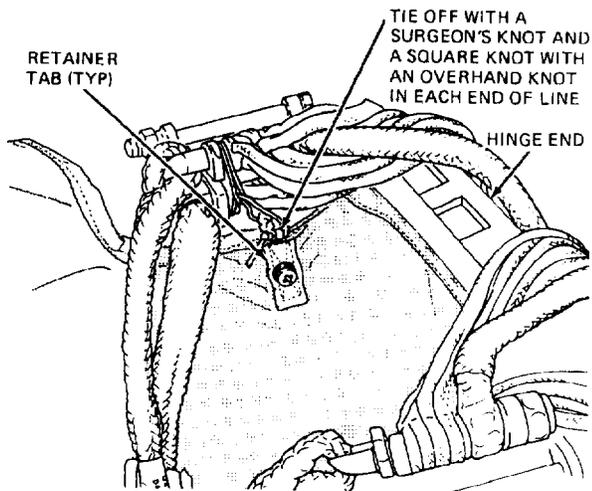
Figure 31. Suspension Line Ties

NOTE

Attachment points 5, 7, 8, 9, 10 and 11 are not used.

24. ATTACHMENT OF CONNECTOR LINKS TO CONTAINER.

- a. Check for and remove any foreign materials from container.
- b. Secure container in holding fixture. Position container hinge end towards canopy.
- c. Position connector links on container side slots by rotating each set of connector links inboard so cross-connector straps are facing container opener end (Figure 32).



6.2-5483

Figure 32. Connector Links Attachment

WARNING

Connector link tie cord must be routed thru both retain-er tabs.

d. Route each end of connector link tie thru opposite ends of retainer tabs and tie off with a surgeon's knot a square knot with an overhand knot in each end of line and trim off excess cord. (QA)

e. Route cross-connector straps along bottom of container between line stows and container end.

25. STOWAGE OF SUSPENSION LINES.

WARNING

Suspension line ties must be snug around line stows and firing lanyard must be kept clear of lines during first four stows.

During stowing, lines must not become loose or rotated or left out of any stow.

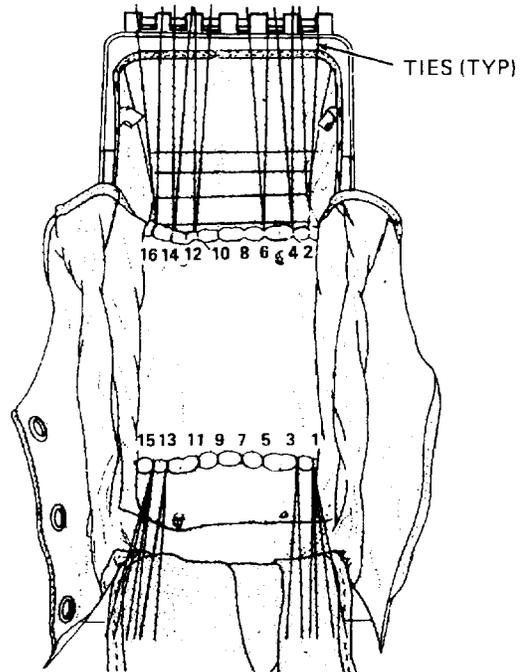
WARNING

Lines must drop to bottom of container under connector links before running to first stow. Lines should be fully relaxed with slack under connector links.

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. Use the following illustration during stowage of lines as a reference as to location of attachment points (Figure 33).



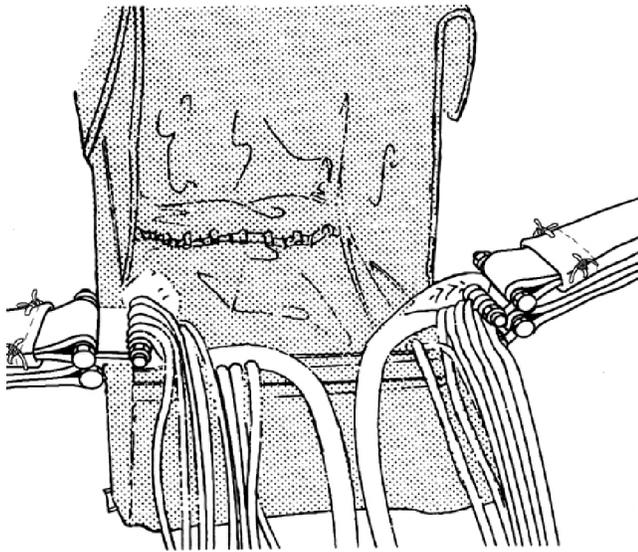
6.2-6508

Figure 33. Suspension Line Stowage Reference

NOTE

Sleeve assembly 14652-1 not shown in following illustrations for clarity.

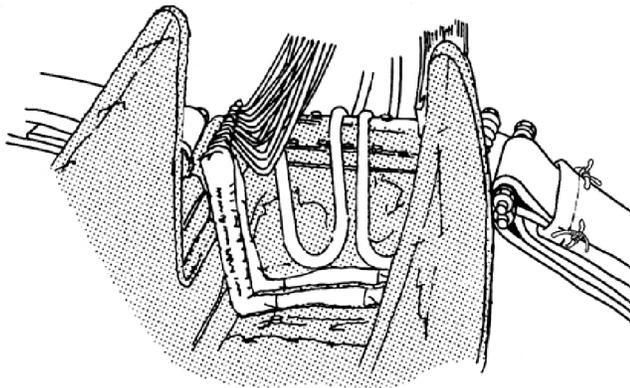
b. Starting at connector links, separate suspension lines from spreading gun firing lanyard on both sides of container (Figure 34).



6.2-6508A

Figure 34. Suspension Line Separation

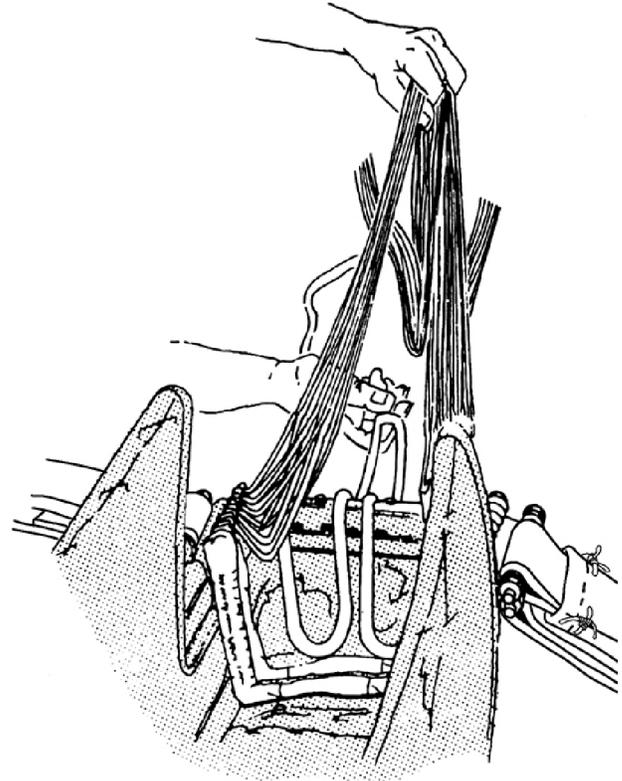
c. Place slack in spreading gun firing lanyard inside container evenly from connector links towards middle of container at hinged end (Figure 35).



6.2-6508

Figure 35. Placement of Spreading Gun Firing Lanyard Slack

d. Grasp suspension lines only with one hand to form first bight (17 +4 -2-in. from the connector link) and with the other hand, keep spreading gun firing lanyard separated and in place (Figure 36).



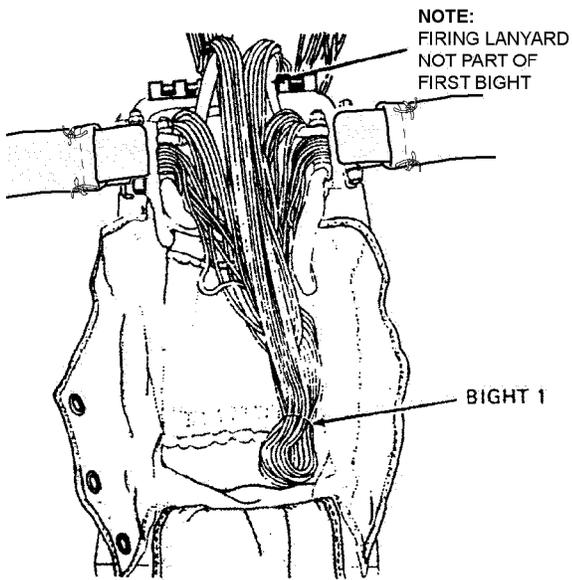
6.2-6508C

Figure 36. Grasp Suspension Lines

WARNING

Ensure spreading gun firing lanyard is separated from the suspension lines when making bights 1, 2, 3, and 4.

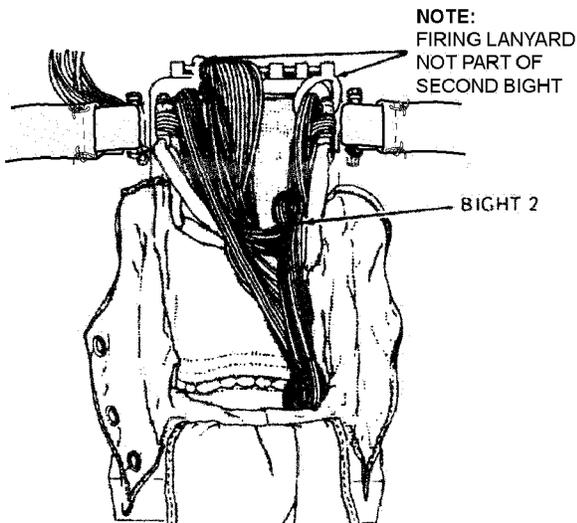
e. Form a bight in lines and adjust first bight so lines drop to bottom of container with slack under connector links. Tie bight to attachment point 1 using either single tie. All bites should extend to end of container (Figure 37).



6.2-6509

Figure 37. Form a Bight in Lines

f. Form and stow bight 2 using line tie at attachment point 2 (Figure 38).

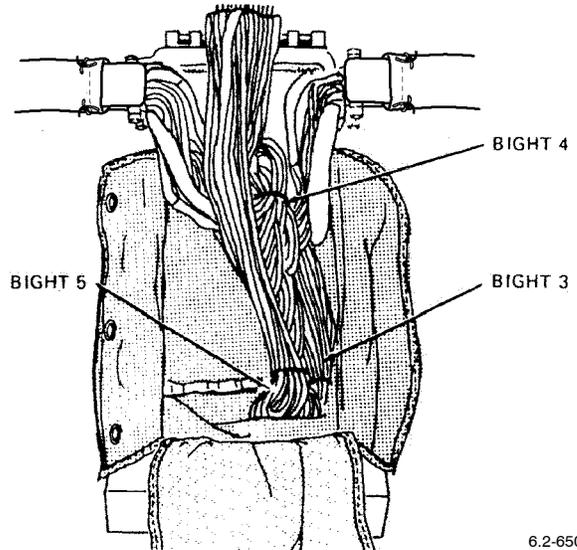


6.2-6509A

Figure 38. Form and Stow Bight 2

g. Form and stow bights 3 and 4 to respective attachment points 3 and 4. Commence to stow both firing lanyards with lines in bight 5 above bights 1 and 3 using second tie at attachment point 1. Ensure that firing lanyard is positioned to-

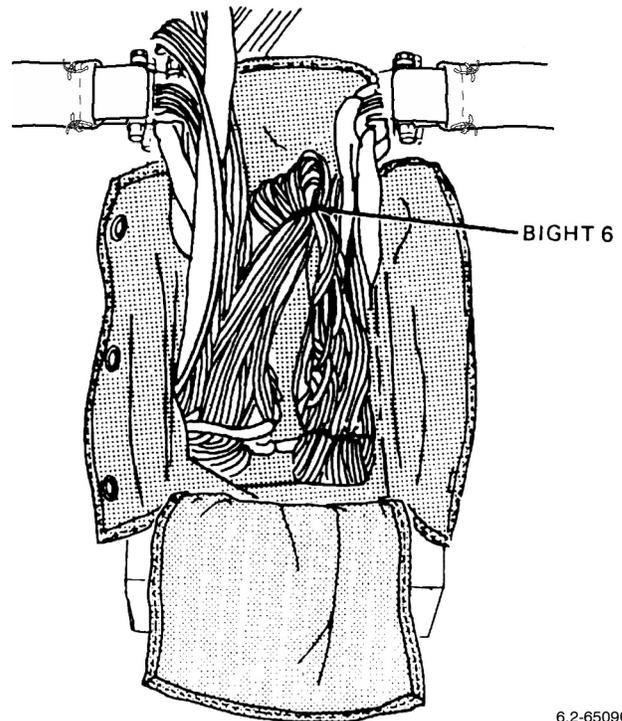
ward bottom of container below connector links prior to storage of bight 5. Any extra line should be neatly stowed on top of previous stows (Figure 39). (QA)



6.2-6509B

Figure 39. Form and Stow Bights 3, 4 and 5

h. Form and stow bight 6 using tie at attachment point 6 (Figure 40).



6.2-6509C

Figure 40. Form and Stow Bight 6

i. Form and stow bight 7 to attachment point 13 and bight 8 to attachment point 16 (Figure 41).

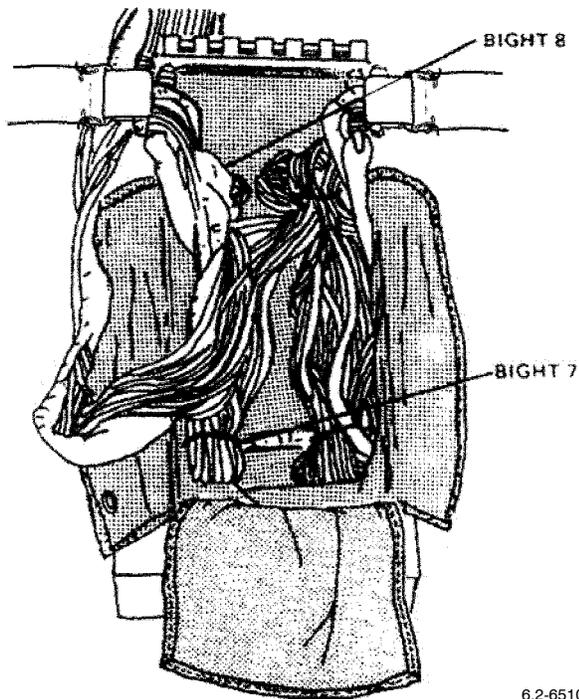


Figure 41. Form and Stow Bight 7 and 8

j. Form and stow bight 9 using tie at attachment point 15 (Figure 42).

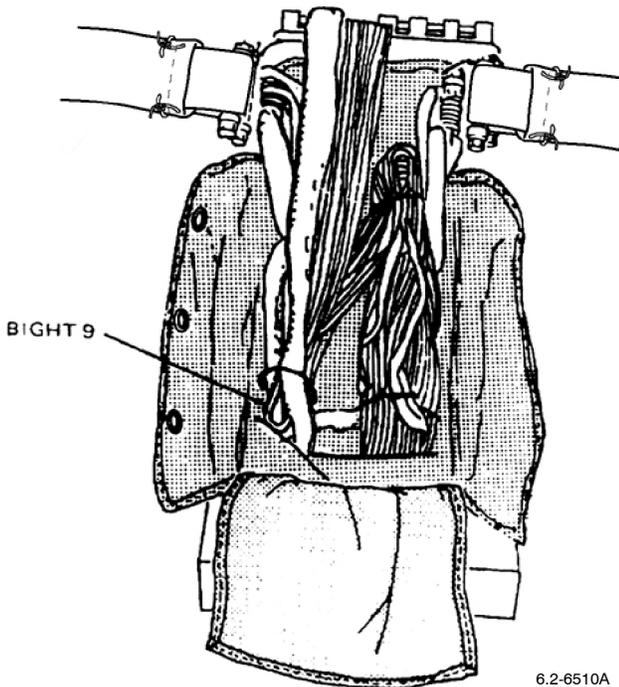


Figure 42. Form and Stow Bight 9

k. Form and stow bight 10 to attachment points 14 (Figure 43).

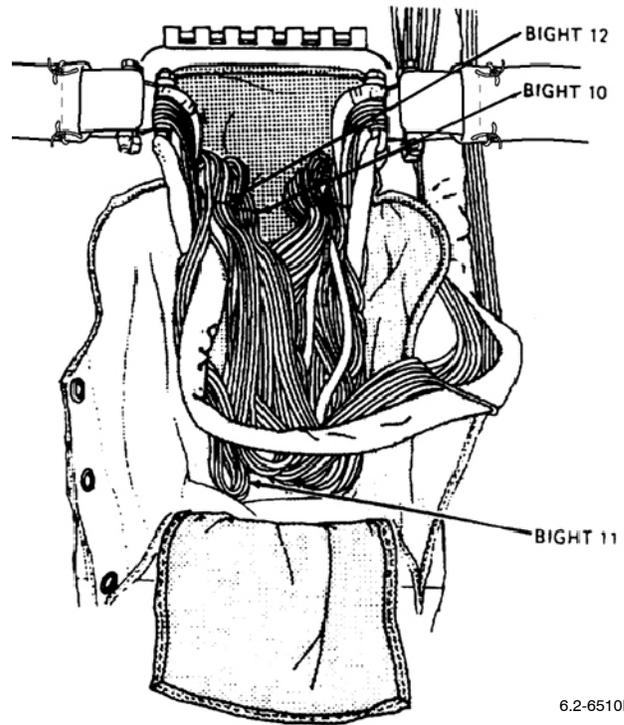


Figure 43. Form and Stow Bight 10

l. Form bight 11 using second tie at attachment point 15, the white index mark shall be no more than 5-in. from hinge end of container. Tie lines to attachment point 12 without forming a bight (Figure 44).

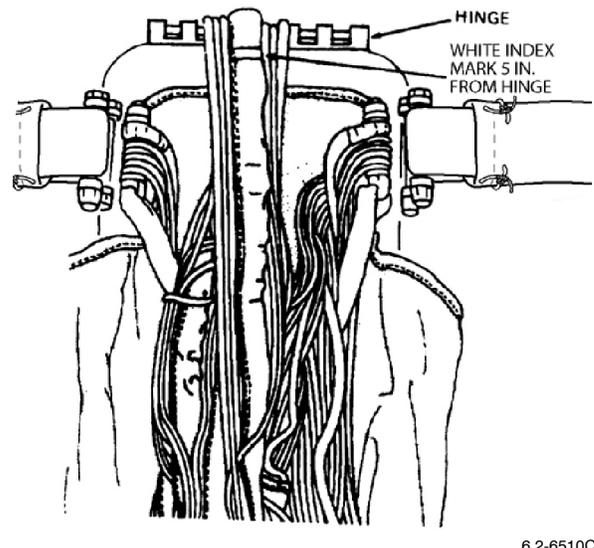


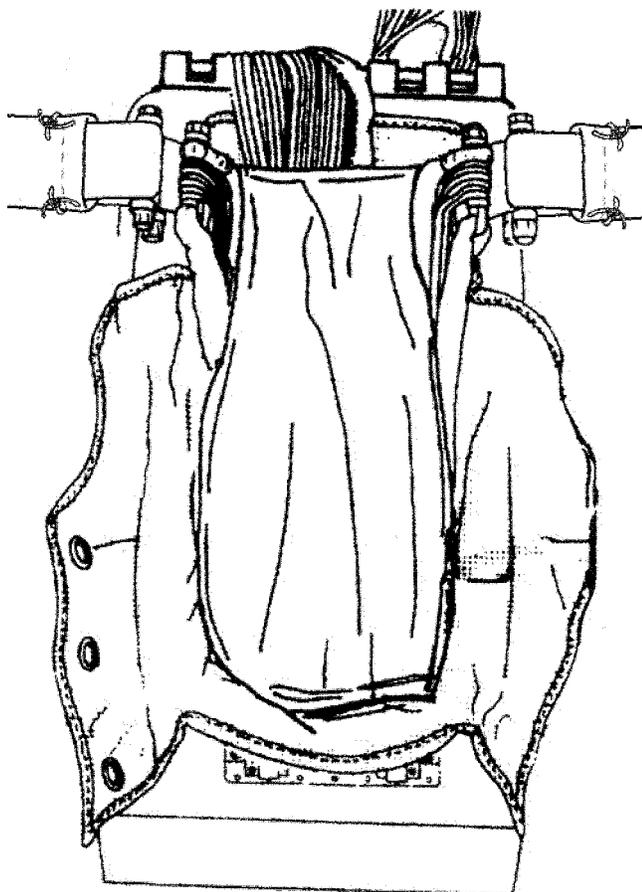
Figure 44. Form Bight 11

NOTE

The area at points 5, 7, 9, and 11 must be kept clear for spreading gun.

m. Check that no suspension line bights were stowed at attachment points 5, 7, 8, 9, 10, and 11.

n. Fold line flap over the suspension lines. This is required to keep spreading gun from entangling suspension lines (Figure 45).



6.2-6527

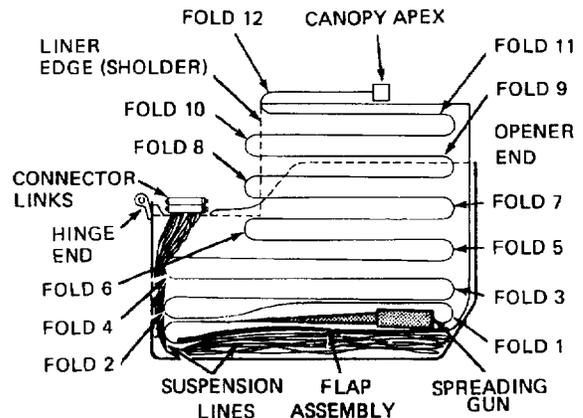
Figure 45. Line Flap Over Suspension Lines

26. STOWAGE OF CANOPY.

a. Folds 6, 8, and 10 should extend 1 1/2-in. past end of liner shoulder. Twelve folds shall be made when stowing the canopy. Use the following illustration as a guide while stowing canopy (Figure 46).



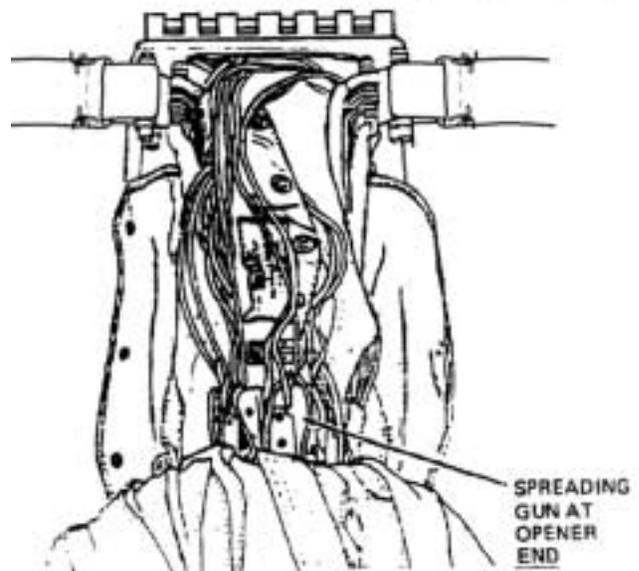
Safety pin must be removed from spreading gun after installation in container.



6.2-6511

Figure 46. Canopy Folds

b. Install spreading gun at opener end (first fold). Ensure spreading gun is firmly in place in empty area formed between suspension line stow bights. After spreading gun has been positioned, route skirt hem of canopy along side of container toward hinged end. Remove safety pin (Figure 47). (QA)



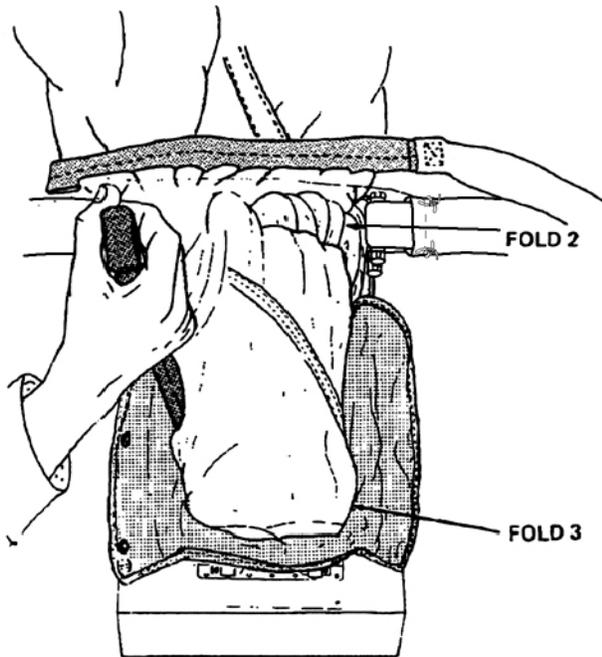
6.2-6511A

Figure 47. Spreading Gun Installation

NOTE

Spread skirt to sides of container to make flat along top even with spreader gun.

c. Remove first shot bag or canopy tie and place second fold of canopy back toward opener end. Work canopy down with long bar or fid along container sides and clear of connector links (Figure 48). (QA)



6.2-6511B

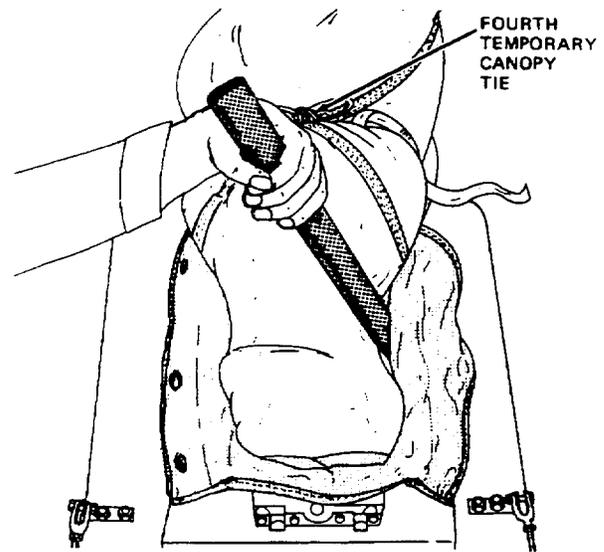
Figure 48. Remove First Shot Bag

d. Remove second shot bag or canopy tie and insert the third fold full length into the container. Using fingers work and tuck canopy into all available space.

NOTE

Care must be taken not to cause distortion of container sides. This condition could cause difficulty in closing the lid.

e. Remove third shot bag of canopy tie and insert fourth fold full length of container. Using a long bar or fid, work and tuck canopy in all available space (Figure 49). (QA)

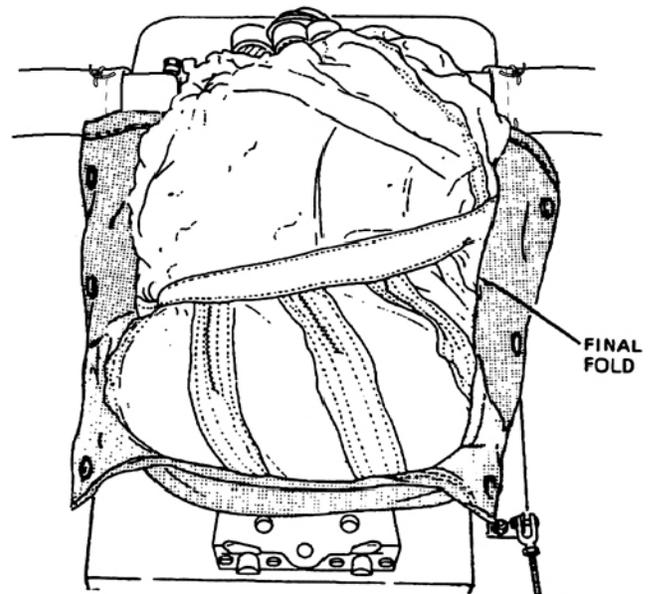


6.2-6215

Figure 49. Remove Third Shot Bag

f. Insert fifth fold. This fold should extend about two-thirds length of container from open end. Using a long bar or fid, work and tuck canopy in all available space. (QA)

g. Remove fourth and final shot bag or canopy tie and stow remaining folds (Figure 46 and 50).

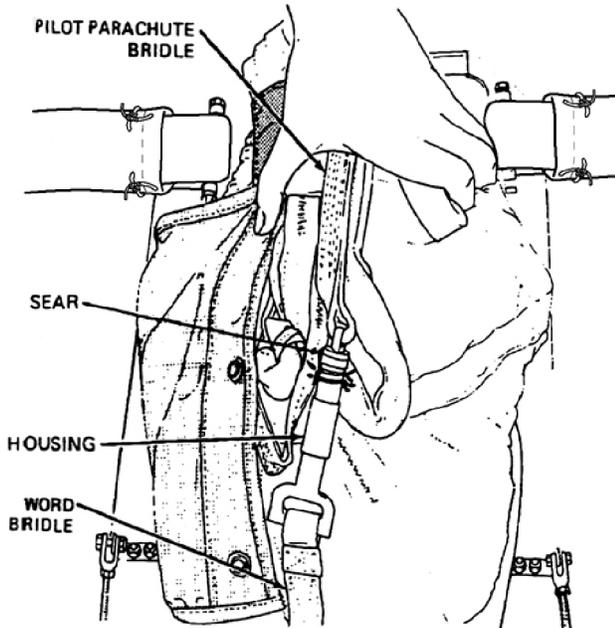


6.2-6215A

Figure 50. Remove Fourth and Final Shot Bag

h. Account for all shot bags. (QA)

i. Connect WORD bridle by inserting release pin and spring of WORD bridle into housing on pilot parachute bridle. Apply pressure to release pin and spring so tip of pin protrudes thru housing then mate sear and release pin. Ensure that center of override disconnect housing is centered on center grommet of inner flaps. Ensure bridle is free of twists (Figure 51). (QA)



6.2-6215B

Figure 51. WORD Bridle Connection

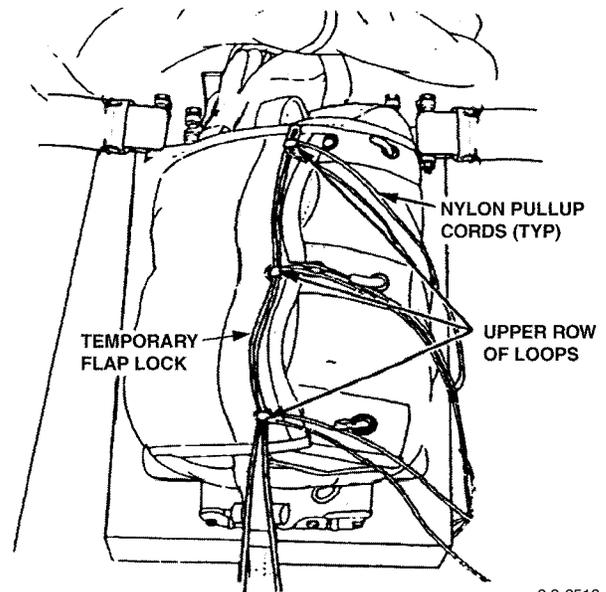
j. S-fold pilot parachute bridle assembly to confluent point. Pilot parachute shall exit liner flaps at hinge end of container.

27. STOWAGE OF PILOT PARACHUTE.

a. Ensure that spool fitting on WORD bridle extends slightly past liner flaps on opener end of container and that confluence end of pilot parachute bridle extends slightly beyond liner flaps at hinge end of container.

b. Cut and lightly wax three 20 in. lengths of Type I or IA nylon cord to be used as pullup cords and one 48 in. length of Type III nylon cord to be used as a temporary flap lock.

c. Insert pullup cords thru each of three closing loops, forming upper rows of loops. Keeping override disconnect WORD bridle and pilot parachute bridle in position, pass pullup cords thru grommets on adjacent liner flap. Draw loops thru grommets in flaps and insert a piece of Type III nylon cord doubled to act as a temporary flap lock (Figure 52).



6.2-6513

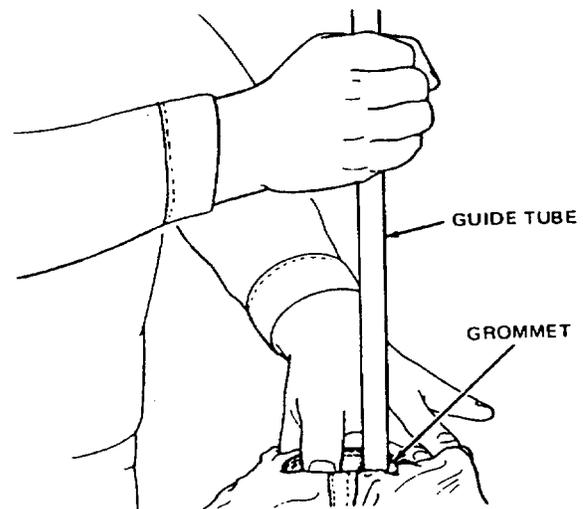
Figure 52. Insert Pullup Cords and Temporary Flap Lock

CAUTION

Rapid removal of pullup cord can cause damage to loops.

d. Slowly remove pullup cords from upper row of pullup loops. Insert pullup cords thru lower row of pullup loops.

e. Position pilot parachute vertically on 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 on spring base plate (Figure 53).



6.2-6513A

Figure 53. Guide Tube Insertion

WARNING

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

f. Compress pilot parachute spring and remove guide tube from locking cone. Locking cone shall protrude thru grommet. Insert temporary locking pin into top hole of locking cone (Figure 54).

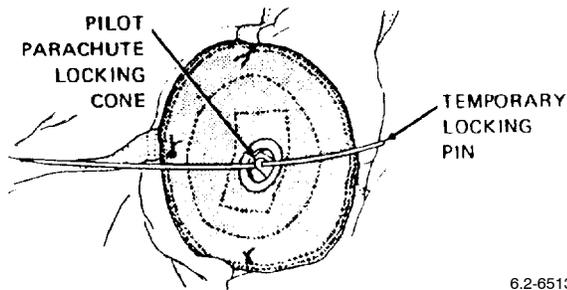


Figure 54. Temporary Locking Pin Insertion

g. Remove any pilot parachute cloth twisted around or entangled in compressed spring.

h. Remove temporary locking tie from locking loop in container liner flap. Insert both ends of proper pullup cord and draw locking loop thru grommet. Insert temporary flap lock. Repeat process for remaining two lower locking loops. Slowly remove pullup cords (Figure 55).

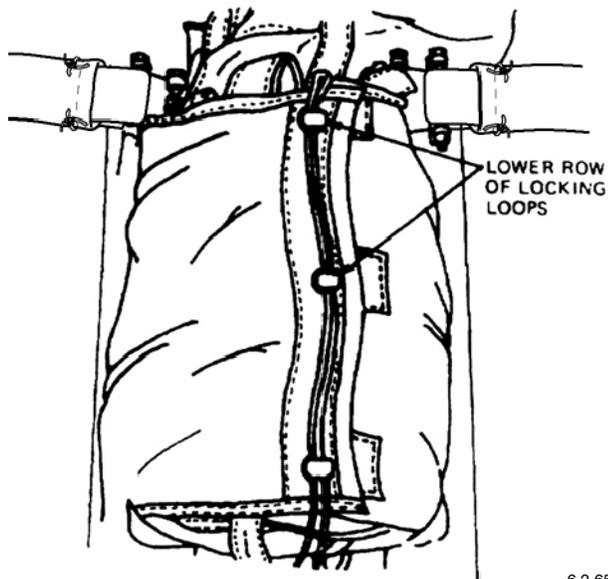


Figure 55. Temporary Flap Lock

i. Stow pilot parachute with crown down on top of container liner flaps on helper's side, centered between two grommets on opener end (Figure 56).

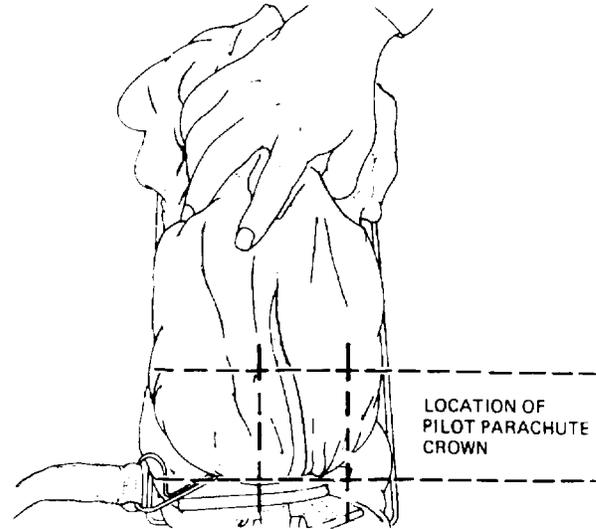


Figure 56. Pilot Parachute Stowage

j. Route pilot parachute material toward hinge end of container. Stow excess pilot parachute material on top on container liner flaps.

WARNING

All packing tools and aids must be accounted for before positioning lid on container.

k. Account for all tools and aids.

l. Inspect V-Ring strap and ratchet assembly for cuts, fraying, etc., prior to use.

m. Ensure that WORD bridle spool fitting is located inside container. Position lid on container mating hinge of lid with hinge of container. Extend ratchets and pass the heavy nylon strap over lid. Attach hold-down cords around hinge end to stabilize headbox assembly in holding fixture (Figure 57).

NOTE

When attaching lid, assure that lid is inserted firmly into hinge, container and lid channels are aligned and no material is caught between lid and container.

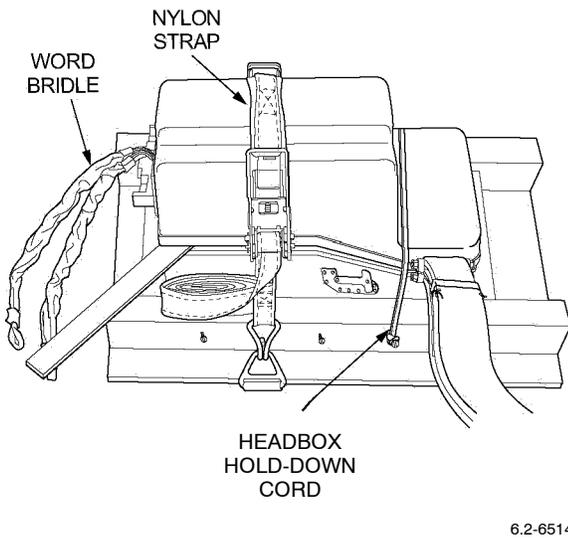


Figure 57. Attach Hold-Down Cord

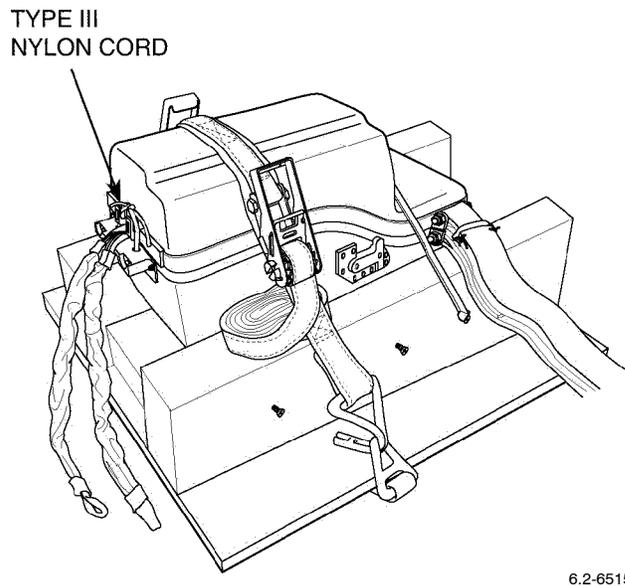


Figure 58. Secure Lid to Container

28. CLOSING HEADBOX LID.

NOTE

During closing procedure, connector links must remain in alignment with seals. Ratchets must be tightened evenly on each side while tucking material into headbox assembly. Do not attempt to completely close with temporary locking cords and pilot parachute pin installed.

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. Secure lid to container by using a length of Type III nylon cord at opener end of headbox. Pass cord through holes in retainers, around lid portion of opener, pull tight and tie off (Figure 58).

b. Locate V-Ring strap under base plate between the 5 1/2 and 7 1/2-in. marks (Figure 59).

c. Extend ratchets as needed to attach hooks to "V" ring strap. Center ratchets on lid, take up any slack on the ratchets ensuring hinge is properly engaged. Slowly tighten ratchets, keeping both sides even as the lid is being closed. As lid is worked down, temporary flap lock and pilot chute pin must be removed. Open knot in cord holding lid on headbox. Pull tight and retie (Figure 59). (QA)

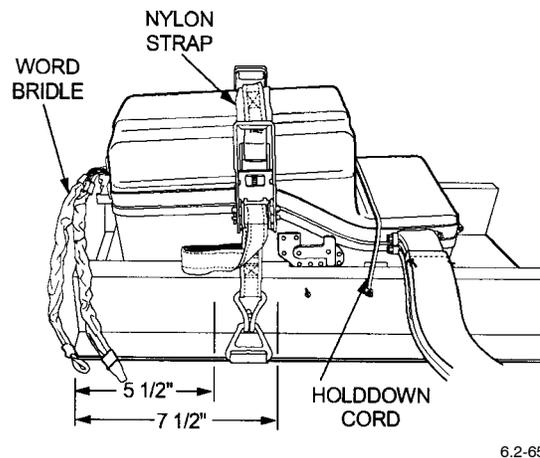


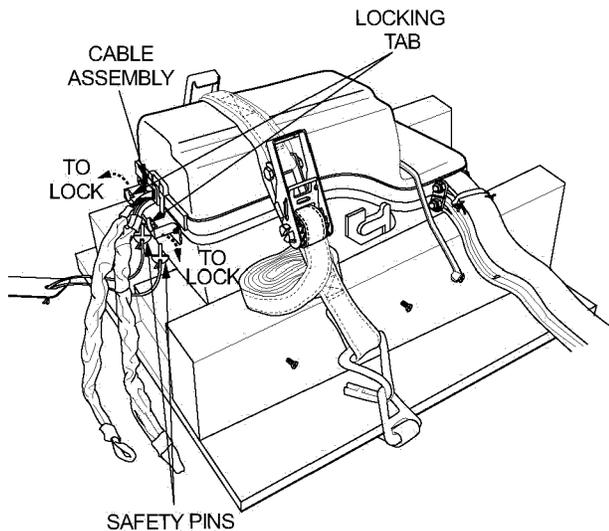
Figure 59. Tighten Ratchets

d. Continue closing lid, exercising great care not to trap material between lid and container.

WARNING

While tightening and tucking material into headbox the WORD Bridle must remain in position at point of exit from the headbox. The spool must be inside the head box.

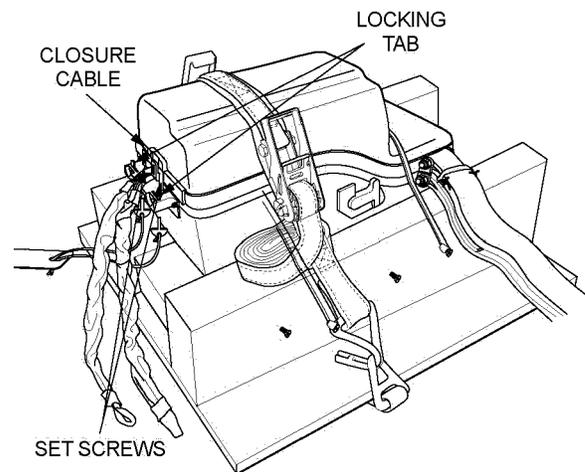
e. Remove cord holding lid and container together. Install one end of cable assembly into locking tab and lock in place. Install other end of cable assembly in remaining locking tab and lock in place. Insert both safety pins into locking tabs (Figure 60).



6.2-6515B

Figure 60. Safety Pin Insertion

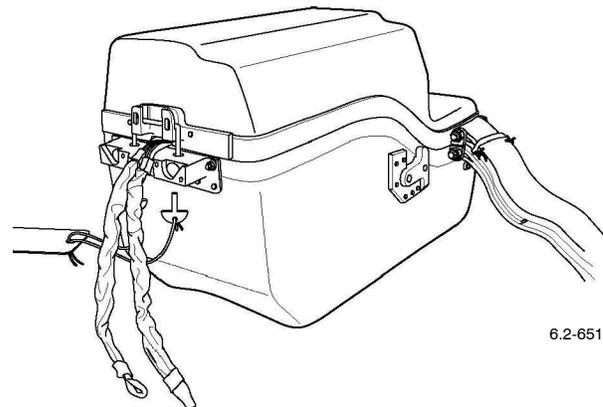
f. Using 3/32-in. Allen modified wrench, adjust setscrews on each side to achieve a 0.06 to 0.18 measurement between the lid and container at closure end (Figure 61). (QA)



6.2-6516

Figure 61. Set Screw Adjustment

g. Using locking lever, release ratchet and remove ratchet assembly. Cut headbox holddown card from hinge and remove headrest assembly from holding fixture (Figure 62).



6.2-6516B

Figure 62. Remove Ratchet Assembly

h. Route headrest assembly to NDI/X-Ray facility for final X-ray inspection. Headrest assemblies found with correct word bridle release pin connection shall have X-ray attached to the parachute record and returned to service.

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

29. STOWAGE OF RISERS IN STOWAGE SLEEVE AND RISER TACKING.

a. S-fold the risers as shown in Figure 63.

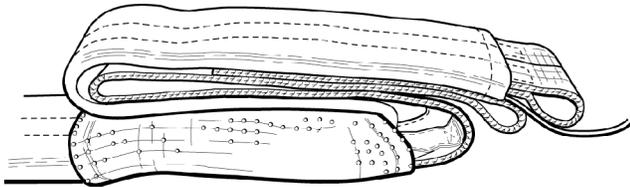


Figure 63. Riser S-Fold

b. Cut a 2-foot length of cord (preferably PIA-C-5040) that will be used as a packing aid to secure the upper riser sleeve in place. First route one end of packing aid through the upper riser sleeve, around the uppermost fold in the riser, then back down and through the upper riser sleeve as shown in Figure 64.



Figure 64. Install S-Fold in Upper Riser Sleeve

c. While packer grabs upper end of riser sleeve and pulls over S-fold, helper shall maintain pressure on the cord to ensure that the riser webbings are properly aligned.

d. Packer shall continue to “work” the sleeve up the riser S-folds until the upper S-fold is completely covered and there is approximately 1 3/4-in. from the end of the riser to the sleeve as shown in Figure 65. Remove packing aid (cord).

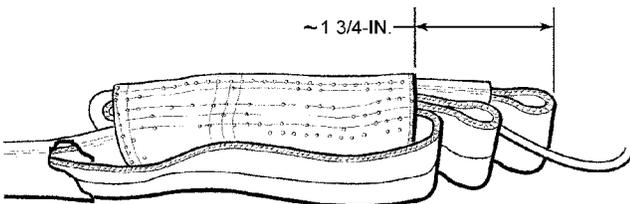


Figure 65. Riser Installed in Riser Sleeve

e. Tack the cover in place on the riser in two places (four total) at each end with V-T-295, Size FF thread doubled one turn using a surgeon’s knot followed by a square knot (Figure 66).

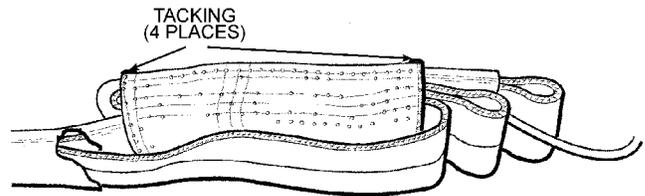


Figure 66. Riser Cover Tackings

f. Route inertia reel strap retainer on cover.

g. Fold lower portion of riser as illustrated in Figure 67. Stow riser into lower sleeve with sleeve hem on the side of the riser.

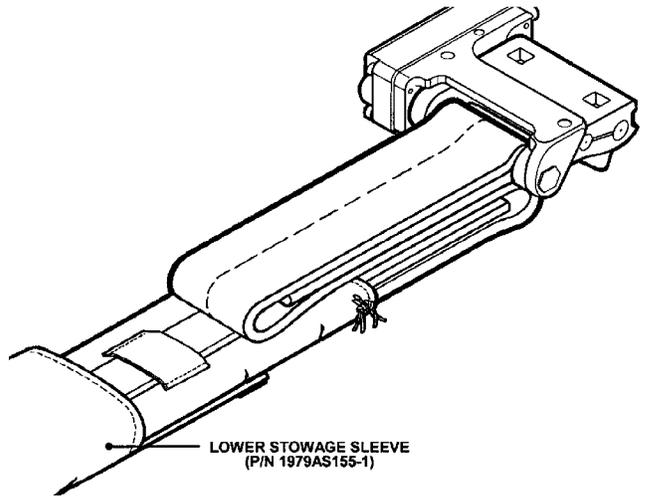


Figure 67. Fold Lower Section of Riser Assembly

h. Route lower sleeve flap around end of riser webbing (beneath Parachute Harness Sensing Release Unit) and tuck beneath itself on opposite side. See Figure 68.

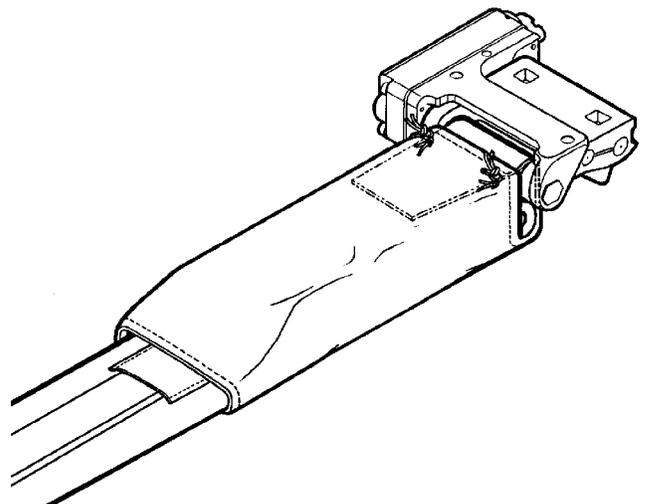


Figure 68. Installation of Lower Stowage Sleeve (P/N 1979AS155-1)

i. Tack lower sleeve and flap in place on the riser in two places at the lower canopy release fitting leg with waxed 6-cord thread (doubled, one turn) tied with a surgeon's knot followed by a square knot. Finally, tie off each end of the 6-cord with an overhand locking knot (Figure 68).

j. Repeat steps a thru i for the opposite riser.

k. Position riser stowage pouch assembly on headrest assembly and secure with snaps.

l. Fold risers into riser stowage pouch assembly as illustrated in Figure 69. Snap the riser to the stowage pouch assembly, and secure the pouch around the riser assembly.

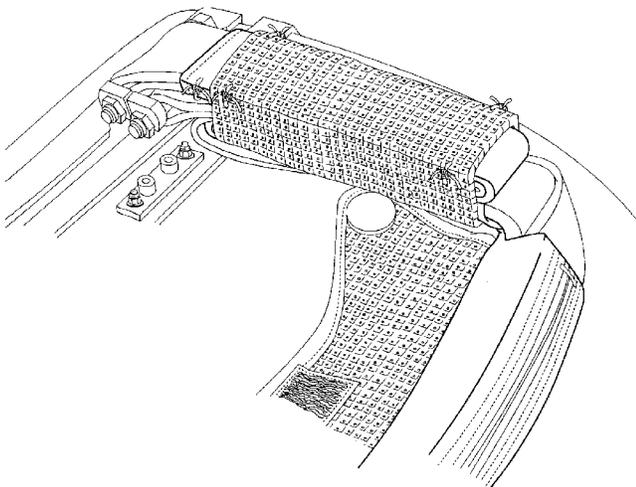


Figure 69. Stow Riser in Headrest Pouch Assembly

m. Remove aft connector link bolts, and stow riser stowage pouch assembly flaps behind connector link bolt as illustrated in Figure 70.

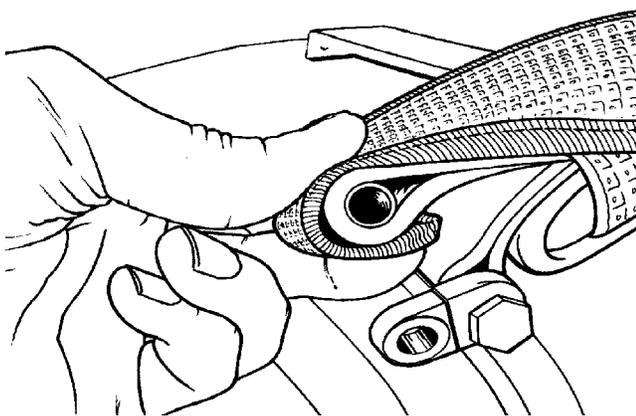


Figure 70. Stow Headrest Pouch Assembly Flap



Sealing Compound, MIL-S-46163

12

n. Install connector link bolts. Apply Sealing Compound MIL-S-46163, Type I, Grade K, to first two bolt threads. Re-install nuts (P/N F42NKE-054) and tighten against link using a 1/2-in. open end wrench to hold cross-connector strap bolt and a 1/2-in. socket or wrench on nut. Torque nuts 70-90 in.-lbs. Apply torque seal to center of bolt heads. Bolts may rotate in connector link assemblies. Figure 71 shows the final packed assembly when the headrest is installed on the ejection seat and the beam.

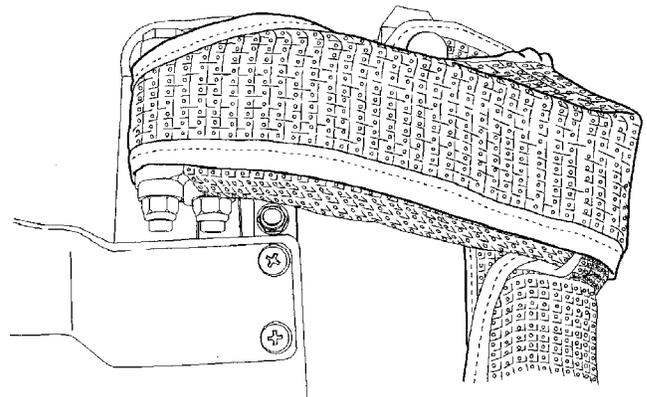


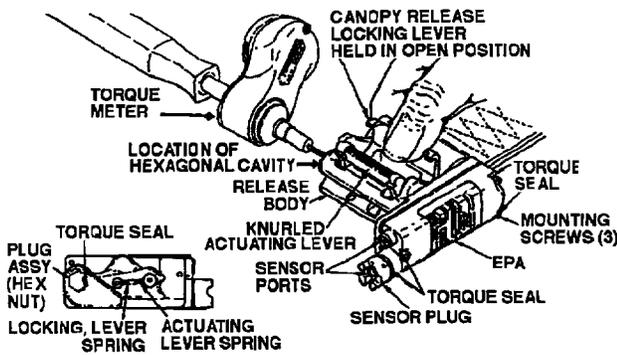
Figure 71. Final Stowage as Installed on Ejection Seat

30. 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 72). (QA)



6.2-1112

Figure 72. 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 73), 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).

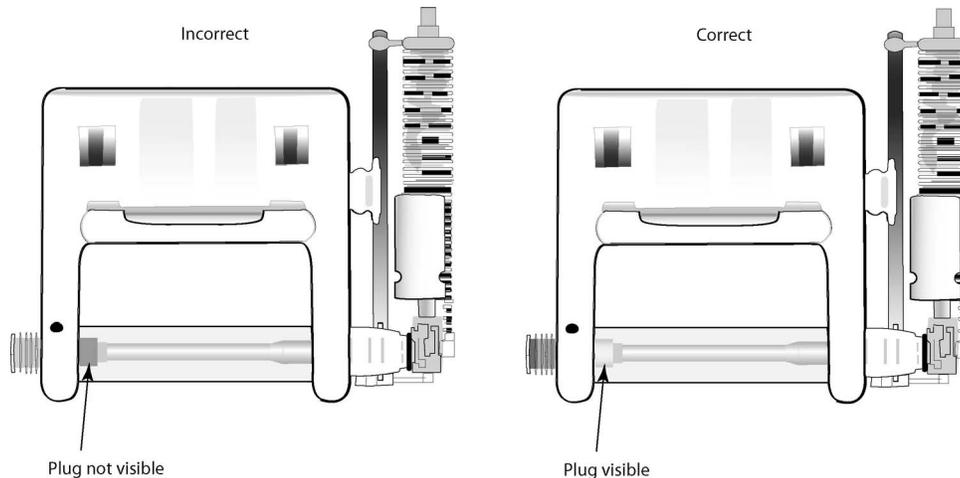


Figure 73. PHSRU X-Ray

■ **31. FINAL CHECKOUT.**

- a. Account for all packing tools and spreading gun safety pin. (QA)
- b. Examine packed parachute for general condition, and verify installation of both safety pin assembly pins. (QA)
- c. Packer shall complete and sign Parachute Record (OPNAV 4790/101). (QA)

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

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

f. 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

A/P28S-28, -30, and -31 HEADREST ASSEMBLY

PART NO. 14090-21, 14090-19, 14690-17, and 14090-3

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	10	11	13 thru 16	9	21	10
2 thru 4	10	11	9	17 thru 18	11	22 thru 25	9
5 thru 9	9	12	11	19 thru 20	9		

Reference Material

Intermediate and Depot Maintenance Common Repair Procedures	WP 004 00
Intermediate and Depot Maintenance, Maintenance Procedures, Parachute Harness Sensing Release Units (PHSRU) MXU-746/P and MXU-747P	WP 024 02
Intermediate and Depot Maintenance, Packing Procedures, A/P28S-28, -30 and -31 Headrest Assembly	WP 022 01
Introduction, Organizational, Intermediate and Depot Maintenance with Illustrated Parts Breakdowns, Emergency Personnel and Drogue Parachute Systems	WP 002 00
Organizational, Intermediate and Depot Maintenance, Parachute Loft Requirements/Administration	WP 003 00
Organizational, Intermediate and Depot Maintenance, Support Equipment	WP 005 00

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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>
ACC 667, Part 2	11 Mar 02	A/P28S-28, A/P28S-30, A/P28S-31 Headrest Assemblies in TAV-8B AV-8B Aircraft, Installation of Four-Line Release System and Over-Inflation Control Line. (WUC1774O, WUC174AO, WUC1749O). ECP-16416.	1 Jun 02	31 Dec 2004

1. INTRODUCTION.

2. This Work Package (WP) contains instructions for the maintenance, repair, replacement, and fabrication of various parachute parts 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.

3. REPAIR OF PILOT PARACHUTE.

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

- a. Cleaning of contaminated areas.
- b. Replacement of loose or broken tacking.
- c. Repair of holes or tears up to 1-in. in diameter with a single patch.

5. Replace pilot parachute for any of the following:

- a. Service/total life has expired per WP 022 01.
- b. Seam separations and loose or broken stitching (yard separation is acceptable) that may affect the safe operation of the parachute assembly.
- c. Holes or tears over 1-in. in diameter and more than five holes or tears per pilot parachute.
- d. Pilot parachute spring is broken or distorted.
- e. Pilot parachute locking cone or grommet is loose or damaged.

6. REPLACEMENT OF PILOT PARACHUTE LOOSE OR BROKEN TACKING (PLATE ASSEMBLY).

Material 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 loose or broken tacking.

NOTE

The plate assembly is attached at the base of the coil spring.

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

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

7. REPLACEMENT OF PILOT PARACHUTE.

a. Remove bridle line from pilot parachute loop.

b. Inspect replacement pilot parachute per WP 022 01.

c. Attach replacement pilot parachute to bridle by passing loop on bridle thru loop on pilot parachute. Form a Lark's head knot by passing pilot parachute thru loop on bridle and pulling tight (Figure 1). (QA)

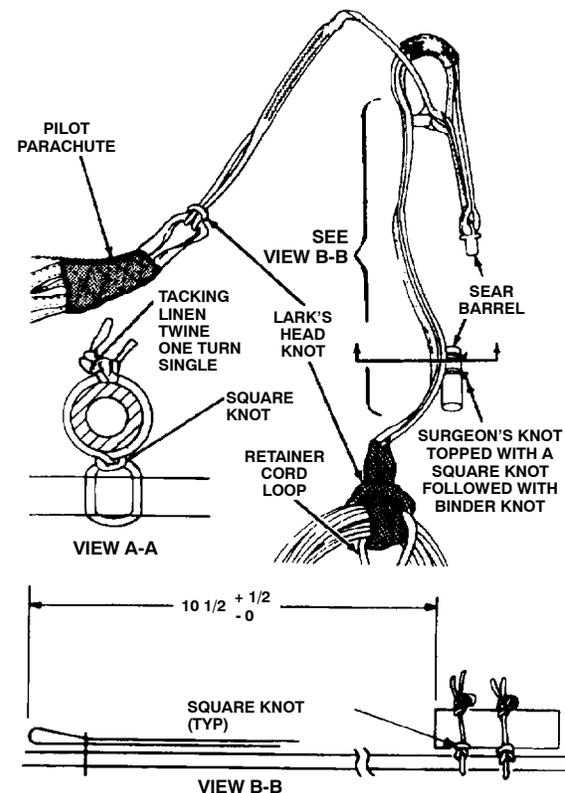


Figure 1. Pilot Parachute and Bridle Line Replacement

6.2-5921

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

8. REPAIR OF PILOT PARACHUTE HOLES OR TEARS.

Materials Required

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

NOTE

Repair of pilot parachute is limited to five holes (and/or patches).

- a. Remove bridle line from pilot parachute.
- b. For pilot parachute fabric with holes or tears up to 1-in., patch per WP 004 00.
- c. Upon completion of repairs, inspect pilot parachute per WP 022 01.
- d. Reinstall pilot parachute per Paragraph 7. (QA)

9. REPAIR OF PILOT PARACHUTE BRIDLE ASSEMBLY. Repair of the pilot parachute bridle assembly is limited to cleaning of contaminated areas and replacement of override disconnect tackings. Replace the pilot parachute bridle assembly if the service/total life has expired per WP 022 01, or if there are any cuts, thread separation, dents, or distortion of sear, or any other damage that may affect the safe operation of the parachute assembly.

10. REPLACEMENT OF PILOT PARACHUTE BRIDLE ASSEMBLY.

- a. Remove pilot parachute bridle from pilot parachute loop.
- b. Remove WORD bridle from override disconnect.
- c. Remove pilot parachute bridle from vent lines and spreading gun retaining cord loop.
- d. Inspect replacement pilot parachute bridle per WP 022 01.
- e. Route end of replacement pilot parachute bridle with cover thru loop in spreading gun retainer cord and then

around vent lines. Form a lark's head knot by passing uncovered end thru loop in other end and pulling tight (Figure 1).

- f. Install bridle on pilot parachute with a Lark's head knot.
- g. Reconnect WORD bridle to override disconnect.
- h. Mark date placed in service on pilot parachute bridle per WP 004 00. (QA)

11. REPLACEMENT OF OVERRIDE DISCONNECT (ORD) TACKINGS.

Materials Required

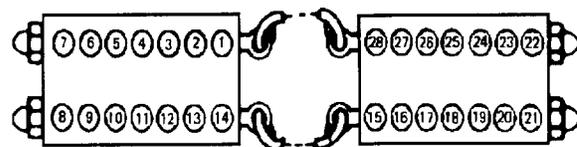
Specification or Part Number	Nomenclature
MIL-T-2520	Twine, Linen, Type I, 6-Ply

- a. Remove worn or damaged tacking. Inspect pilot parachute bridle and ORD barrel for suitability for reuse.
- b. Position ORD barrel on bridle line with grooved end 10 1/2 +1/2, -0-in. from end of loop assembly (Figure 1).
- c. Tack ORD barrel to bridle in two places at grooved end with one turn of linen twine, single. Form a square knot between bridle and barrel. Bring ends about barrel and tie off using a surgeon's knot topped with a square knot, followed with binder knot. Trim off excess leaving 1/2-in. (Figure 1).

12. REPAIR OF CANOPY ASSEMBLY.

13. REMOVAL AND INSTALLATION OF SUSPENSION LINES FOR PROPER SEQUENCING.

- a. Remove nut on connector link.
- b. Slide bolt out and simultaneously slide suspension lines onto a temporary locking pin or rod.
- c. Sequence lines per (Figure 2).



6.2-5475

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

d. Reinstall lines by sliding bolt thru hole in connector link and simultaneously placing lines on bolt.

e. Reinstall nut on bolt handtight.

f. Check suspension line continuity (Figure 2). (QA)

14. REPLACEMENT OF CONNECTOR LINK AND CONNECTOR STRAP.

NOTE

The connector strap and connector links are not designed to be replaced separately. The complete assembly must be replaced if damage is detected.

a. Remove nut on connector links.

b. Slide bolt out and simultaneously slide suspension lines onto a temporary locking pin or rod.

c. Reinstall lines on new connector link by sliding bolt thru hole in connector link and simultaneously placing lines on bolt.

d. Reinstall nuts on bolts handtight.

e. Check suspension line continuity (Figure 2).

15. REPLACEMENT OF CONNECTOR LINK SEAL.

Materials Required

Specification or Part Number	Nomenclature
12059-11	Seal

a. Remove nut from link assembly bolt.

b. Slide bolt out of link; sleeve will drop out.

c. Slide seal off connector link.

d. Slide replacement seal onto connector link.

e. Reinstall bolt and sleeve in connector link and reinstall nut handtight.

16. REPLACEMENT OF CANOPY ASSEMBLY.

a. Remove pilot parachute, bridle line, and WORD bridle from canopy apex.

b. Remove spreading gun retainer cord from canopy apex.



Safety pin must be installed in spreading gun.

c. Remove spreading gun per WP 004 00.

d. Dispose of canopy assembly per current supply directives.

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

f. Attach tension strap hook to canopy vent lines.

g. Locate gore 28 (nameplate gore) and place it uppermost in center of packing table.

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

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

j. Apply tension to canopy.

k. Pull vent collar toward canopy and align exposed upper lateral band.

l. Pull vent collar back to its original position.

m. Check suspension line continuity on left side of gore 28. Packer shall grasp line 1 at skirt hem and raise to a sufficient height to ensure that line is free of dips and twists. Continue this procedure with lines 2 thru 14 (Figure 2). Helper shall be positioned at connector links to check lines selected by packer.

n. Check suspension line continuity on right side of gore 28. Packer shall grasp line 28 at skirt hem and raise to sufficient height to ensure that line is free of dips and twists. Continue this procedure with lines 27 thru 15 (Figure 2). Helper shall be positioned at connector links to check lines selected by packer.

o. Inspect the canopy assembly per WP 022 01.

p. Record any damage on canopy damage chart per WP 003 00. (QA)

q. Reattach spreading gun to canopy per WP 004 00.

r. Reattach pilot parachute, bridle assembly and WORD bridle per Paragraph 10.

17. REPAIR OF RISER ASSEMBLY.

- 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. (Not applicable to peel stitch holding inertia reel strap to riser.)
 - (3) Removal/replacement of riser protection sheath, riser retainer strap and seat release lanyards.
- b. Replace risers for any of the following:
 - (1) Service/total life has expired.
 - (2) Cuts, tears, or holes in webbing.
 - (3) Loose or broken stitching in excess of three stitches.
 - (4) Twists, fading, fusing, fraying, burns, contamination, or abrasion.

18. REPLACEMENT OF RISER ASSEMBLY.

Support Equipment Required

Part Number	Nomenclature
Wrench	Open End, 1/2-in.
TQS6	Torque Meter

Materials Required

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

- a. Remove parachute harness sensing release units (PHSRU) from risers per WP 024 02.
- b. Remove connector link nuts securing riser to connector link.
- c. Slide riser loops off connector link bar.
- d. Inspect replacement risers per WP 022 01.
- e. Lay out replacement riser on packing table with riser strap loops toward connector link.
- f. Install sleeves in riser assembly loops.

g. Install short riser assembly strap on forward connector link assembly, and long riser assembly strap on aft connector link assembly. (QA)

h. Install new connector link nuts securing risers to connector links. Torque nuts 70 to 90 in-lbs. Apply torque seal to center of bolt heads. Bolts will rotate in connector link assemblies. (QA)

i. Install riser cover assemblies.

j. Reinstall Parachute Harness Sensing Release Units (PHSRU) per WP 024 02. (QA)

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

19. STOWAGE OF RISERS IN STOWAGE SLEEVE AND RISER TACKING.

a. S-fold the risers as shown in Figure 3.

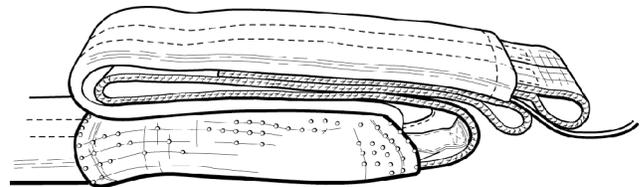


Figure 3. S-Fold the Risers

b. Cut a 2-foot length of cord (preferably MIL-C-5040) that will be used as a packing aid to secure the upper riser sleeve in place. First route one end of packing aid through the upper riser sleeve, around the uppermost fold in the riser, then back down and through the upper riser sleeve as shown in Figure 4.

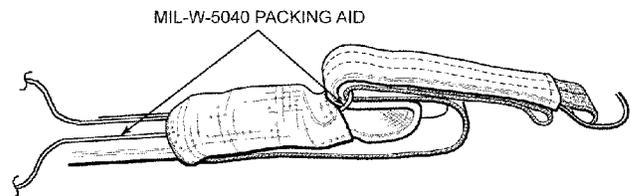


Figure 4. Install S-Fold in Upper Riser Sleeve

c. While packer grabs upper end of riser sleeve and pulls over S-fold, helper shall maintain pressure on the cord to ensure that the riser webbings are properly aligned.

d. Packer shall continue to "work" the sleeve up the riser S-folds until the upper S-fold is completely covered and there is approximately 1 3/4-in. from the end of the riser to the sleeve as shown in Figure 5. Remove packing aid (cord).

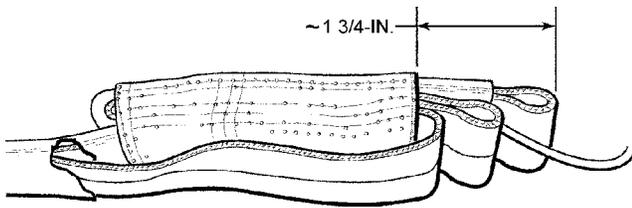


Figure 5. Riser Installed in Riser Sleeve

e. Tack the cover in place on the riser in two places (four total) at each end with V-T-295, Size FF thread doubled one turn using a surgeon's knot followed by a square knot (Figure 6).

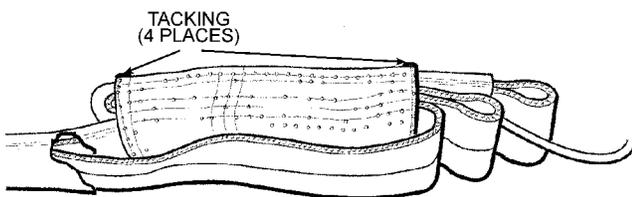


Figure 6. Riser Cover Tackings

f. Secure the headpad flaps between the aft connector link and bolt.

g. Stow riser into lower sleeve with sleeve hem on the same side as the seat man separation lanyard attachment point.

20. REPAIR OF SPREADING GUN.

21. FABRICATION OF RETAINER CORD.

Support Equipment Required

Part Number	Nomenclature
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 flat on table under 10 ± 2 lb. tension. Mark and cut as shown in (Figure 7). Use red ink for marking.

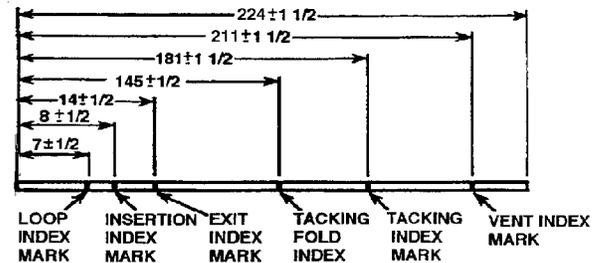


Figure 7. Retainer Cord Layout

b. Form a 3/8 in. loop at the 7-in. mark.

c. Insert bodkin at 14-in. mark and exit bodkin at 8-in. mark. Pull cord thru for an insertion length of $6 \pm 1/2$ -in. If necessary, trim excess.

d. Machine stitch cord per WP 004 00 for a length of $2 \pm 1/2$ -in. (Figure 8).

e. Measure $76 1/2$ -in. from top of loop formed in step c, and mark with an indelible pen. This mark will indicate the location for tacking the over-inflation control line during parachute packing (Figure 8).

22. REPLACEMENT OF RETAINER CORD TACKINGS.

Materials Required

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



Safety pin must be installed.

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. Ensure safety pin is installed in spreading gun. (QA)
- b. Completely remove loose or broken tackings.

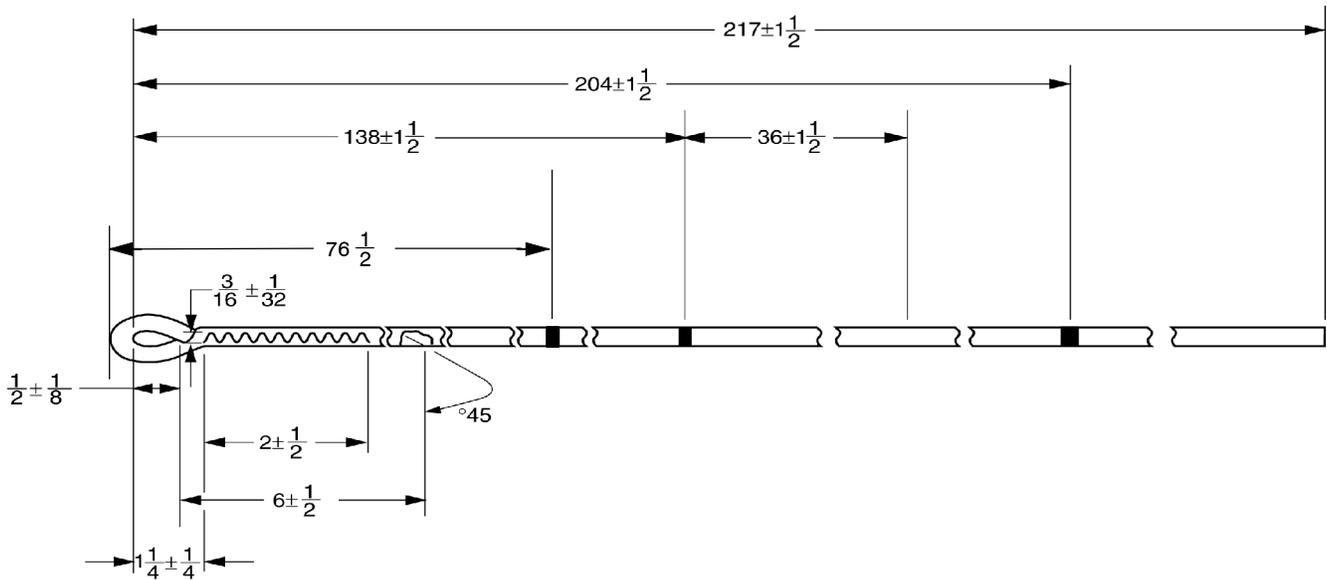


Figure 8. Retainer Cord Fabrication

c. Starting at 138-in. mark, form an 18-in. bight in retainer cord (Figure 9).

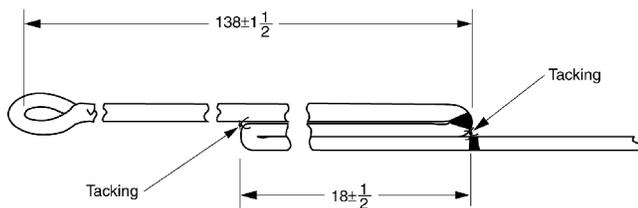


Figure 9. Retainer Cord Tackings

d. Tack retainer cord at each end of bight with one turn of size 6 thread, single and waxed; tie off. (QA)

23. INSPECTION OF SUSPENSION LINE AND SPREADING GUN FIRING LANYARD LENGTH DIFFERENTIAL.

a. Remove suspension lines 6, 7, 8, 9, 20, 21, 22, and 23 from connector links.

CAUTION

Do not apply tension for more than 30-sec.

b. Apply a 10 ± 2 lb. tension to each removed line and while holding tension, measure and record distance from skirt hem to inside of line attachment loop. (QA)

c. Calculate and record average length of measured suspension lines.

d. Apply a 10 ± 2-lb. tension to firing lanyard and while holding tension, measure and record distance from skirt hem to inside of lanyard connector link attachment loop. (QA)

e. Compare length of firing lanyard to average length of suspension lines. Verify that firing lanyard length is 20 to 28-in. shorter than average length of suspension lines. (QA)

WARNING

Do not place in service any spreading gun canopy assembly that does not meet needs of differential inspection.

f. Reattach suspension lines 6, 7, 8, 9, 20, 21, 22, and 23 to connector links. (QA)

g. Check suspension line continuity (Figure 2).

24. STOWAGE OF FIRING LANYARD.

Materials Required

Specification or Part Number	Nomenclature
MIL-C-5040	Cord, Nylon, Type I or IA
V-T-276	Thread, Cotton, Size 30/3, Red
	-or-
A-A-52094	Thread, Nylon, Size 30/3, Red

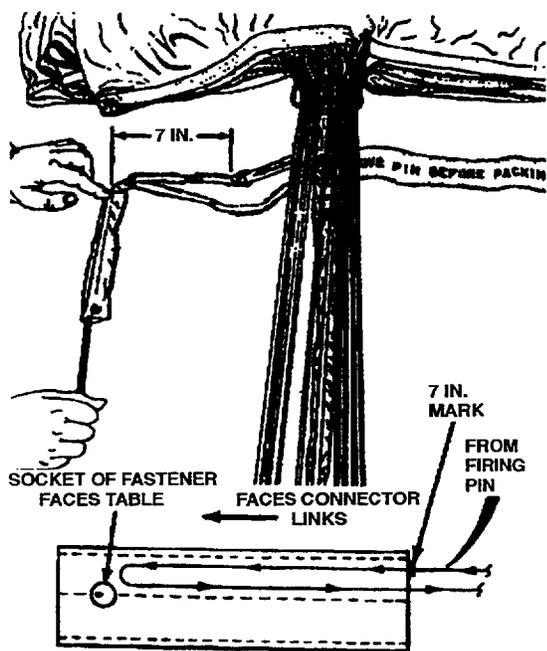
NOTE

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

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

b. Starting at 7-in. mark on firing lanyard, form a bight in lanyard the length of stowage sleeve. Position stowage sleeve end with pull-the-dot fastener facing connector links. The fastener socket faces the table (Figure 10).

c. With button on stowage sleeve facing up, route stowage aid thru bight in firing lanyard. Draw stowage aid thru left stowage sleeve channel with a bodkin from end opposite snap fastener to end with snap fastener (Figure 10).



6.2-5524

Figure 10. Stowage of Firing Lanyard

d. Draw firing lanyard thru stowage channel to bottom using stowage aid (Figure 10).

CAUTION

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

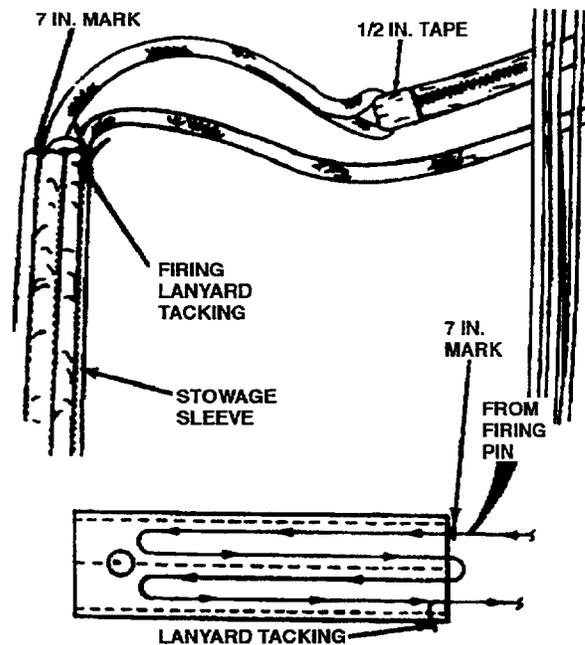
e. Slowly remove stowage aid from firing lanyard bight.

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

g. Tack second stow of firing lanyard to stowage sleeve at end opposite snap fastener with one turn of size A thread or one turn cotton 30/3 thread; tie off (Figure 11). (QA)

WARNING

The 9/16-in. tapes must not be twisted around firing lanyard.



6.2-5525

Figure 11. Tacking Firing Lanyard to Stowage Sleeve

h. Ensure 9/16 in. tapes are not twisted around firing lanyard.

25. REPLACEMENT OF WORD BRIDLE.

a. Disconnect release pin and spring on WORD bridle from sear on pilot parachute bridle and then remove WORD bridle from pilot parachute bridle.

b. Inspect replacement WORD bridle per WP 022 01.

c. Connect replacement WORD bridle to pilot parachute bridle by pushing release pin into barrel until it protrudes from opposite end.

d. Engage sear on pilot parachute bridle with release pin and then release tension on spring, allowing sear and release pin to become fully engaged inside barrel.

e. Mark date placed in service on WORD bridle per WP 004 00. (QA)

26. FABRICATION OF WORD BRIDLE SPANDEX SLEEVE .

Materials Required

Specification or Part Number	Nomenclature
1100/82	Spandex
MIL-W-4088	Webbing, Nylon, 9/16-in. Wide, Type I, Class 1, 1A or 2
V-T-295	Thread, Nylon, Size E, Type I or II, Class A

NOTE

Upon request, spandex fabric will be furnished by NAVAIRWARCENWPNDIV, Code 461000D, 1900 N Knox Road Stop 6206, China Lake, CA 93555-6106.

a. Lay out and cut two pieces of spandex fabric 8 3/8 by 2 5/8-in. Ensure that fabric weave of material runs lengthwise. When installed it will run parallel to the Kevlar webbing.

b. Fold spandex fabric to measure about 8 3/8 by 1 1/4-in. Sew a 1/8-in. wide zigzag stitch 1/8-in. along the lengthwise cut edge of the material per WP 004 00.

c. Turn inside out and slide new spandex sleeve over existing spandex sleeve, locating one end of spandex sleeve 1/4-in. from inside edge of installed 9/16-in. webbing wrap. Ensure that seam on new spandex sleeve is centered lengthwise on bridle assembly.

d. Cut four 3-in. lengths of 9/16-in. webbing; sear ends.

e. Place one piece of 9/16-in. webbing next to existing webbing wrap on sleeve side. Ensure that the webbing is on the outside of the new spandex sleeve.

f. Use same procedure for opposite end. (QA)

27. REPAIR OF HEADBOX ASSEMBLY.

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

- (1) Cleaning of contaminated areas.
- (2) Repair of holes and cracks less than 3-in. in length or width.

- (3) Replacement of damaged attachment points.

b. Replace container and lid assembly for any of the following:

- (1) Holes or cracks in excess of 3 in. in length or width.
- (2) Damage (cracks, splits, etc.) extending into seals, mounting bosses, or into corners having less than 1 in. radius.

28. REPAIR OF CONTAINER AND LID ASSEMBLY SURFACE SCRATCHES OR CRACKS. To repair surface scratches or cracks that penetrate but do not go thru first ply of laminate and do not affect strength of container, do as follows:



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

Materials Required

Specification or Part Number	Nomenclature
MIL-R-9300	Epoxy Resin (Epon 828)
O-D-1271	Hardener (Diethylene Triamine)
MIL-C-9084	Glass Cloth, Type VIII, Class 2
MIL-E-5558	Wrinkle-Finish Enamel, Lusterless, Type II, Black
BMS10-11K	Epoxy Primer
MIL-L-81352	Acrylic Lacquer, Color No. 37038
LP00370	Cellophane
O-A-51	Technical Acetone
PC451	Aluminum Oxide Paper (240 Grit)
—	Milled Glass Fibers (Glass Floc), 1/32 in.



Technical Acetone, O-A-51 1

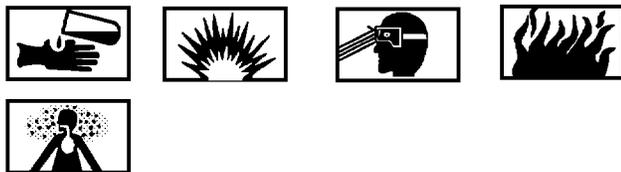
a. Clean damaged area with technical acetone, using a clean cotton cloth. Clean about 2 in. past damaged area in all directions.



Diethylene Triamine, O-D-271 4

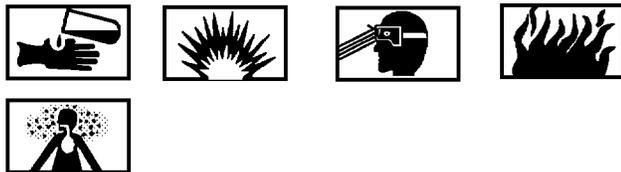
NOTE

Mix 100 parts of Epon 828 (resin) to 10 parts Diethylene Triamine (hardener). Do not mix more than can be used in 25 min.



Epoxy Resin, MIL-R-9300 6

b. Paint cleaned area with one or more coats of resin (number of coats to be applied depends on severity of damage).



Epoxy Resin, MIL-R-9300 6

c. Fill any small fractures with a mixture of Epon 828 and milled glass fibers, (mix to a putty consistency).

d. Over coated surface, apply a sheet of cellophane extending 2 to 3-in. beyond the treated surface. Remove all entrapped air bubbles either by hand or with a rubber roller.

e. Allow resin to cure overnight at room temperature. If necessary, a 212-degrees F oven can be used to reduce cure time.



Sanding operations on containers produce a fine dust that may cause irritation to the skin or respiratory system. Protection shall be provided for the hands, face, and breathing passages.



Aluminum Oxide, PC 451 2

f. After resin has cured, remove cellophane sheet and lightly sand off any excess resin down to the original surface of container. Clean sanded area with a clean cotton cloth.



Epoxy Primer, MIL-P-23377 5

g. Refinish surface with one coat of epoxy primer and two coats of camouflage black acrylic lacquer.

h. Upon completion of repair, return container to service.

29. REPAIR OF CONTAINER AND LID ASSEMBLY CRACKS, HOLES, AND SCRATCHES.

To repair cracks, holes, and scratches that penetrate thru one or more plies of laminate (but not thru surface opposite to that which is damaged) and that do not affect strength of container, do as follows:



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

Materials Required

Specification or Part Number	Nomenclature
MIL-R-9300	Epoxy Resin (Epon 828)
O-D-1271	Hardener (Diethylene Triamene)
MIL-C-9084	Glass Cloth, Type VIII, Class 2

Materials Required

MIL-E-5558	Wrinkle-Finish Enamel, Lusterless, Type II, Black
LP00370	Cellophane
O-A-51	Technical Acetone
PC451	Aluminum Oxide, Paper (240 Grit)
BMS10-11K	Epoxy Primer
MIL-L-81352	Acrylic Lacquer, Color No. 37038



Sanding operations on containers produce a fine dust that may cause irritation to the skin or respiratory system. Protection shall be provided for the hands, face, and breathing passages.

a. Sand any damaged areas lightly either by hand or machine to a smooth contour.

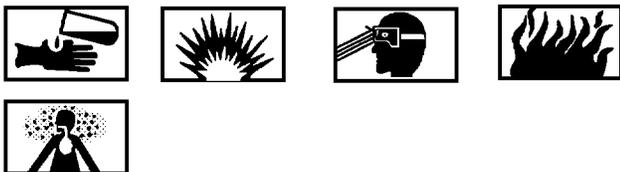


Technical Acetone, O-A-51 1

b. Clean sanded area with technical acetone, using a clean cotton cloth. Clean about 2-in. past sanded area in all directions.



Diethylene Triamine, O-D-271 4



Epoxy Resin, MIL-R-9300 6

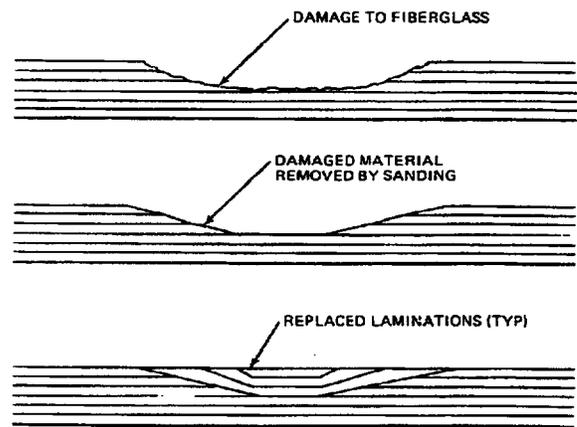
NOTE

Mix 100 parts of Epon 828 (resin) to 10 parts Diethylene Triamine (hardener). Do not mix more than can be used in 25 min.

c. Paint sanded area with one coat of resin.

d. Cut any required sections of glass fabric to shape of damaged area. Soak cut sections in resin until a resin content of about 50 percent has been achieved.

e. Place soaked sections of glass fabric in the sanded depression area per (Figure 12).



6.2-5863

Figure 12. Repair of Container and Lid Assembly Cracks, Holes and Scratches

f. Place a sheet of cellophane over the repaired area and work out any excess resin.

g. Allow resin to cure overnight at room temperature. If necessary, a 212-degrees F oven can be used to reduce cure time.



Sanding operations on containers produce a fine dust that may cause irritation to the skin or respiratory system. Protection shall be provided for the hands, face, and breathing passages.



Aluminum Oxide, PC 451 2

h. After resin has cured, remove cellophane sheet and hand or machine sand surface of repaired area to original surface of facing. Clean sanded area with a clean cotton cloth.



Epoxy Primer, MIL-P-23377 5

- i. Refinish surface with one coat of epoxy primer and two coats of camouflage black acrylic lacquer.
- j. Upon completion of repair, return container to service.

30. REPAIR OF CONTAINER AND LID ASSEMBLY CRACKS OR HOLES. To repair cracks or holes that penetrate container wall, perform the following:

WARNING

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

Materials Required

Specification or Part Number	Nomenclature
MIL-R-9300	Epoxy Resin (Epon 828)
O-D-1271	Hardener (Diethylene Triamene)
MIL-C-9084	Glass Cloth, Type VIII, Class 2
MIL-E-5558	Wrinkle-Finish Enamel, Lusterless, Type II, Black
LP00370	Cellophane
O-A-51	Technical Acetone
PC451	Aluminum Oxide Paper (240 Grit)
A-11 or B-11	Plastic Hydrocal (Locally Purchased)
MIL-P-265	Polyvinyl Alcohol (Locally Purchased)
BMS10-11K	Epoxy Primer
MIL-L-81352	Acrylic Lacquer, Color No. 37038

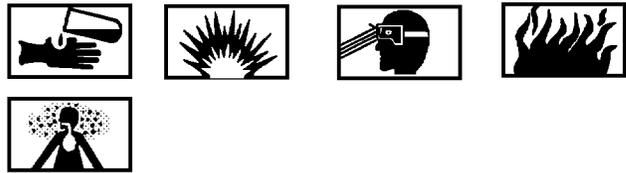
NOTE

To repair extensively damaged containers, a mold must be used in forming/shaping the replacement part to the proper curvature. Plaster molds formed of materials such as Hydrocal A-11 or B-11 have proven satisfactory. Steps a thru e pertain to fabrication of molds, and steps f thru q pertain to container repairs.



Technical Acetone, O-A-51 1

- a. Clean sanded area with technical acetone, using a clean cotton cloth. Clean about 2-in. past sanded area in all directions.
- b. Construct a suitable wood frame or container that roughly follows the contour of the convex side of parachute container. This frame will hold the soft plaster mold material.



Polyvinyl Alcohol, MIL-P-265 7

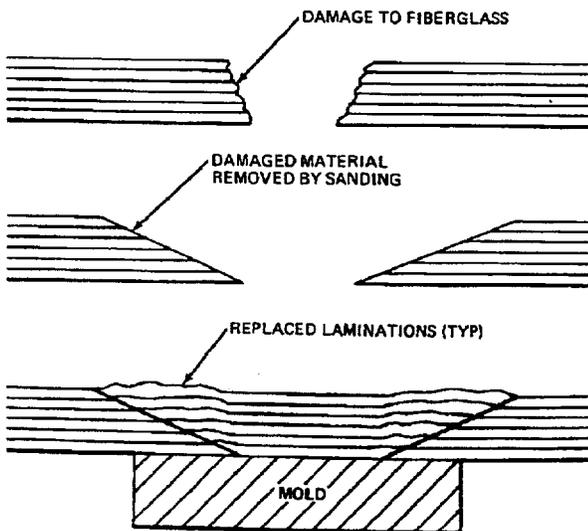
- c. After plaster has been applied to this frame, coat a similar undamaged area on parachute container with a release agent (paste wax, polyvinyl alcohol, vinyl film, or cellophane), then embed container in soft plaster to form a surface of required size and shape.
- d. After plaster has hardened, remove container and allow the mold to dry for 12 to 15 hrs at room temperature. Another option is to oven dry at about 220-degrees F for several hours.
- e. Carefully hand sand the mold surface with fine sandpaper; while mold is still warm, coat it with DC-4 silicone grease.
- f. After any excess grease has been removed, spray or brush the mold surface with two or three coats of releasing lacquer (Garalease 915 or XD-481). When these coats of releasing lacquer are completely dry, apply an additional coat of DC-4 silicone grease and rub off any excess. The mold is now ready for use.

g. Carefully cut out the damaged portion carefully to either a circular or oval shape.



Sanding operations on containers produce a fine dust that may cause irritation to the skin or respiratory system. Protection shall be provided for the hands, face, and breathing passages.

h. Carefully sand damaged area either by hand or machine. This enlarged and smoothed area should be at least 25 times the thickness of the container wall (Figure 13).



6.2-5864

Figure 13. Repair of Container and Lid Assembly Cracks or Holes

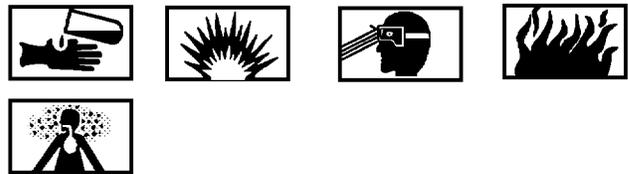
i. Prepare glass-fabric laminations for repairing container wall by cutting largest piece of fabric to exact outer shape of sanded surface.

j. Cut smallest piece so that it overlaps scarfed area a proportionate distance, depending upon number of plies in the repair. Cut intermediate size pieces so that they overlap equally.



Diethylene Triamine, O-D-271

4



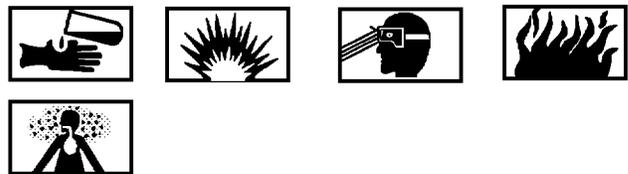
Epoxy Resin, MIL-R-9300

6

NOTE

Mix 100 parts of Epon 828 (resin) to 10 parts Diethylene Triamine (hardener). Do not mix more than can be used in 25 min.

k. A convenient way to prepare these laminations is to brush-spread resin on them and then sandwich the spread fabric between two sheets of colored cellophane. Sections of glass fabric can then be cut to shape without becoming frayed at edges. The resin content of all applied fabric should be about 50 percent.



Polyvinyl Alcohol, MIL-P-265

7

NOTE

When it is necessary to use a mold to rebuild part of a container wall, surface of mold must be treated to prevent sticking (adhesion of the resin). One or more coats of the following release agents may be applied: heavy duty paste wax, polyvinyl alcohol, vinyl film, polyester film, or cellophane.

l. (If Required) Place required mold inside container.

m. Lay/spread prepared sections of glass fabric into place by first removing cellophane sheet from one side of fabric, placing exposed fabric into position over the damaged area, and then removing second sheet of cellophane (Figure 13).

n. Cover entire repaired area with a sheet of cellophane and carefully work surface to remove as much excess resin as possible.

o. Allow resin to cure overnight at room temperature. If necessary, a 212-degrees F oven can be used to reduce cure time.

WARNING

Protection shall be provided for the hands, face, and breathing passages when sanding.



Aluminum Oxide, PC 451

2

p. After resin has cured, remove cellophane sheet and lightly sand off any excess resin down to the original surface of container. Clean sanded area with a clean cotton cloth.



Epoxy Primer, MIL-P-23377

5

q. Refinish surface with one coat of epoxy primer and two coats of camouflage black acrylic lacquer.

r. Upon completion of repair, return container to service.

31. REPLACEMENT OF CONTAINER ASSEMBLY.

a. Inspect replacement container per WP 022 01.

b. Replace container at proper time during packing procedures.

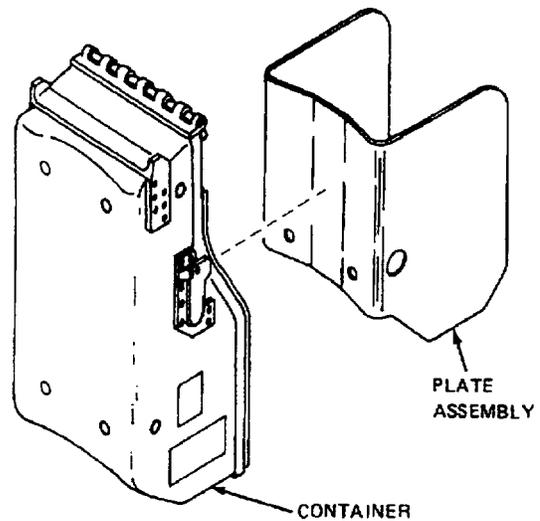
32. REPLACEMENT OF LID ASSEMBLY.

a. Inspect replacement lid per WP 022 01.

b. Replace lid at proper time during packing procedures.

33. ATTACHMENT OF CONTAINER ASSEMBLY TO LINER ASSEMBLY.

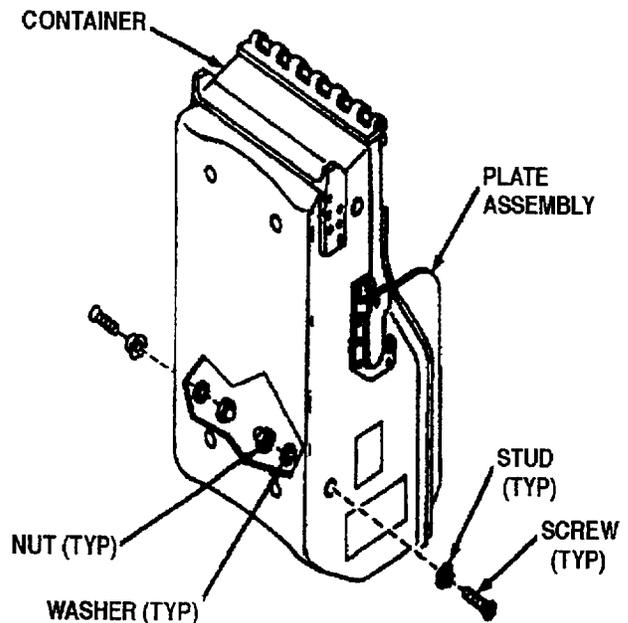
a. Insert plate assembly into container assembly (Figure 14).



6.2-6547

Figure 14. Insert Plate Assembly

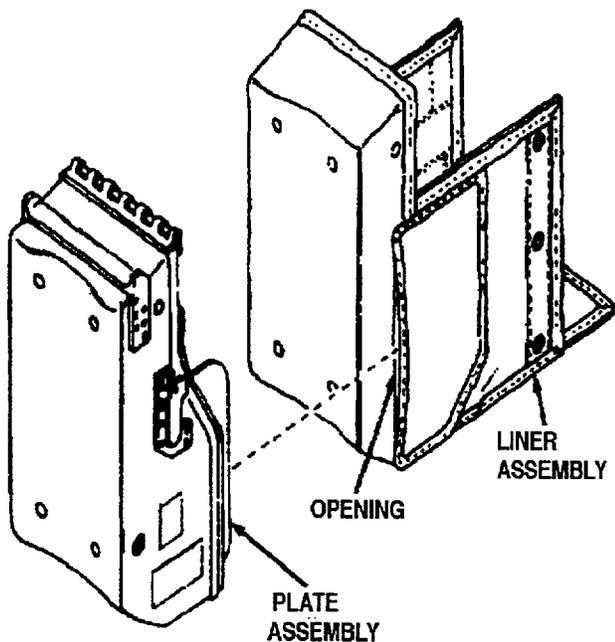
b. Insert two screws thru studs and container sides. Install a washer and nut on each screw and tighten (Figure 15).



6.2-6547A

Figure 15. Insert Two Screws Thru Studs

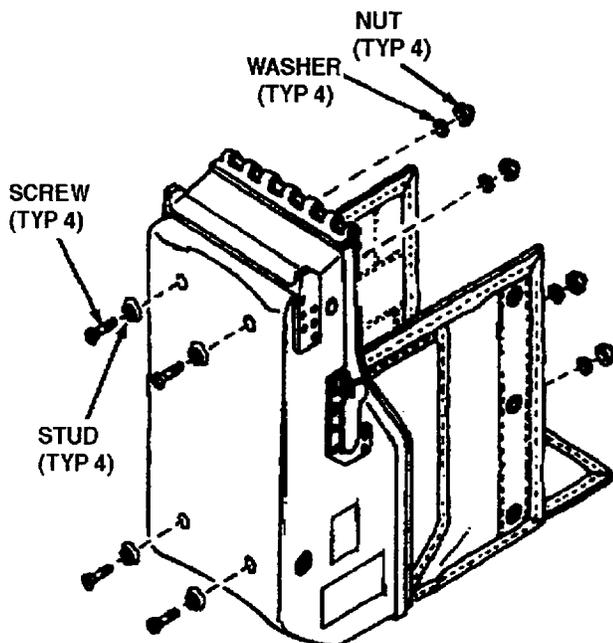
c. Place liner assembly into container inserting plate assembly into openings in liner assembly (Figure 16).



6.2-6547B

Figure 16. Place Liner Assembly in Container

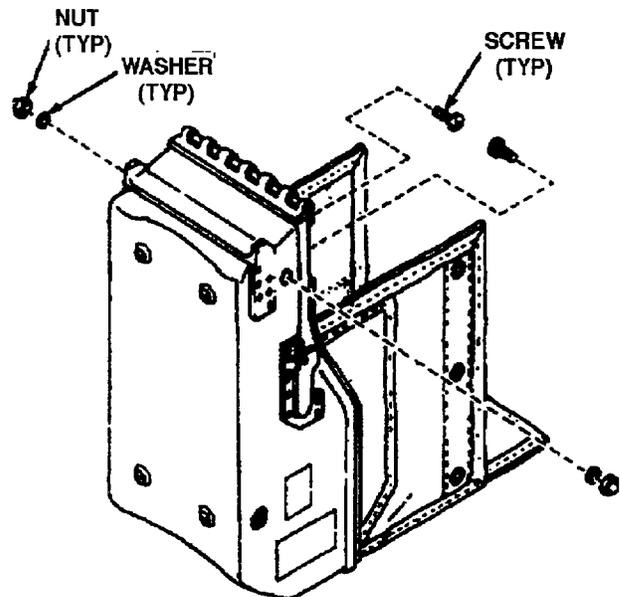
d. Insert four screws thru studs, bottom of container, and grommets in bottom of liner assembly. Install a washer and nut on each screw from inside liner assembly and tighten (Figure 17).



6.2-6547C

Figure 17. Insert Four Screws Thru Studs

e. Insert two screws thru grommets in connector link attachment loops inside liner assembly and out thru container (Figure 18).



6.2-6547D

Figure 18. Insert Two Screws Thru Grommets

f. Install a washer and nut onto each screw on outside of container and tighten.

34. REPLACEMENT OF OVER-INFLATION CONTROL LINE AND TACKINGS.

Support Equipment Required

Part Number	Nomenclature
Refer to WP 005 00	Bodkin

Materials Required

Specification or Part Number	Nomenclature
V-T-295	Thread, Nylon, Size 6 Type I, Class A
PIA-C-7515	Cord, Nylon, Type II, Olive Drab

a. With parachute canopy stretched out on the packing table, carefully cut the two A-thread tackings securing the four bites of Over-Inflation Control Line to the Spreading Gun Assembly retainer cord.

b. Remove the Spreading Gun Assembly from the canopy and disconnect the retainer cord from the Spreading Gun Assembly.

NOTE

Retainer cord will still be attached to the canopy apex at this point.

c. Cut through the Over-Inflation Control Line anywhere along its circumference and gently pull the line the anchor loops and remove it from the canopy.

d. Obtain a replacement Over-Inflation Control Line and cut off a minimum amount from each end to eliminate the seared ends. If a replacement Over-Inflation Control Line is not available, use scissors to cut a 55 ft. +2, -0 inches length of PIA-C-7515 nylon cord.

e. Measure 6-in. from each end of the Over-Inflation Control Line and mark with an indelible pen.

f. Find the center of the Over-Inflation Control Line by holding the two marks made in the previous step together and mark the center with an indelible pen.

g. Divide the line into four equal sections by holding the three marks made in the previous two steps and mark the two points with an indelible pen.

h. Measure 76 1/2-in. from the lower end of the Spreading Gun Assembly retainer cord and mark with an indelible pen.

NOTE

Ensure Spreading Gun Assembly anchor loops are not twisted during installation of the over-inflation control line.

i. Rig the Over-Inflation Control Line into the canopy by starting at the name plate gore and taking one end of the line and routing it through the inside of each suspension line and through each of the Spreading Gun Assembly anchor loops in accordance with Figure 19. (QA)

NOTE

Ensure that the Over-Inflation Control Line is not wrapped around any of the Spreading Gun Assembly anchor loops or is routed outside of the suspension lines.

j. After the Over-Inflation Control Line is routed through each Spreading Gun Assembly anchor loop, use a bodkin to finger trap each end of the control into the opposite end a distance of 6 inches until the two marks meet as shown in Figure 20. Using a needle and a piece of waxed single 6-cord nylon thread, secure the finger trappings in place with a running stitch approximately 6-in. long (2-4 stitches/inch). Tie off with surgeon's knot followed by a square knot.

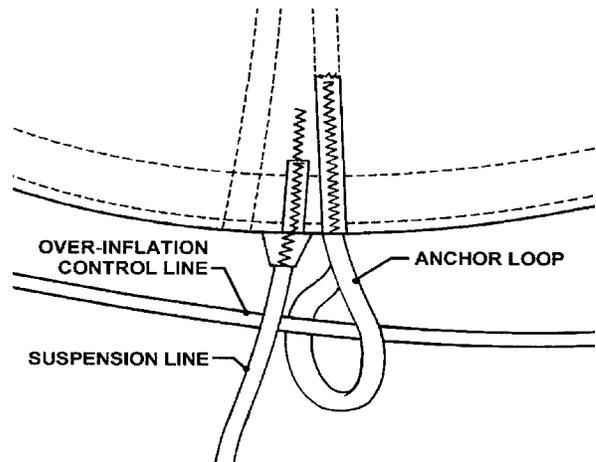


Figure 19. Routing of Over-Inflation Control Line

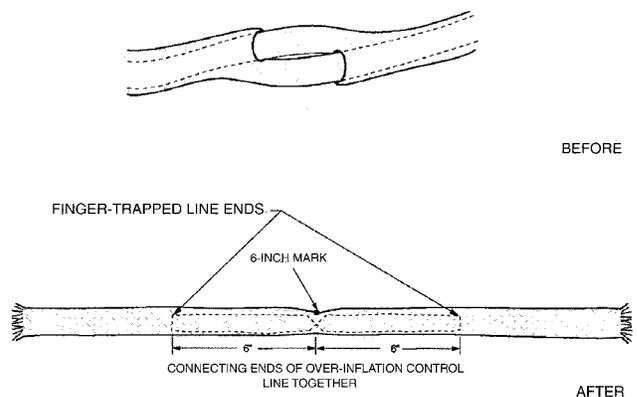


Figure 20. Finger Trap Each End of the Over-Inflation Control Line

k. Install Spreading Gun Assembly, Spreading Gun Assembly cartridge and upper retaining lanyard to Spreading Gun Assembly in accordance with WP 022 01.

l. Pull upper retaining lanyard and canopy apex toward connector links until 76 1/2-in. mark on lanyard is visible. (Upper portion of canopy will be inside out at this point).

m. Align the Over-Inflation control line bites from between slug plates 1 and 28 and 7 and 8 with the 76 1/2-in. mark made on the Spreading Gun Assembly retaining lanyard. Using a needle and a piece of nylon A-thread (single, one turn), run the needle and thread through the width of the Over-Inflation control lines, then through the upper retaining lanyard and tie off with a surgeon's knot followed by a square knot (Figure 21). (QA)

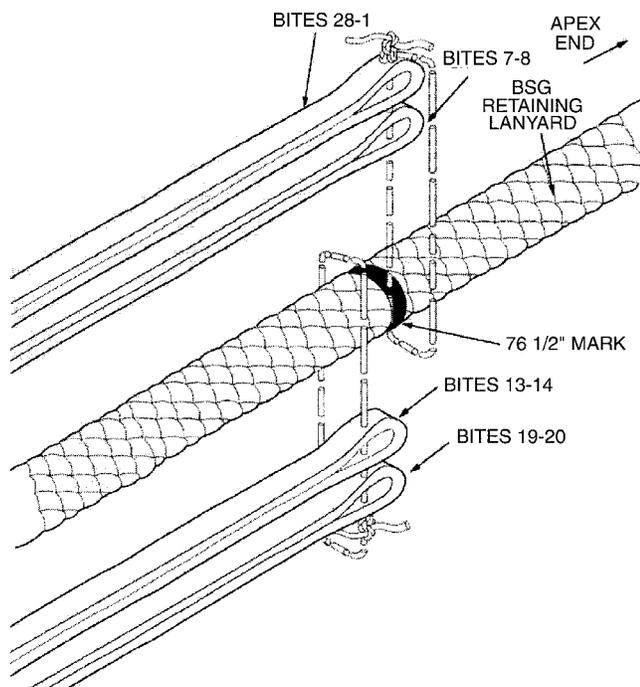


Figure 21. Attachment of OCL to BSG Retaining Lanyard

n. Align the Over-Inflation control line bites from between slug plates 13 and 14 and 19 and 20 with the 76 1/2-in. mark made on the Spreading Gun Assembly retaining lanyard. Using a needle and a piece of nylon A-thread (single, one turn), run the needle and thread through the width of the Over-inflation control lines, then through the upper retaining lanyard and tie off with a surgeon's knot followed by a square knot (Figure 21). (QA)

o. Route upper portion of upper Spreading Gun Assembly retaining lanyard back between gore 1 and 8, up center of canopy until canopy is stretched out taking care not to break the A-thread tackings. (QA)

p. Straighten canopy gores, stow extraction sleeve, and fold canopy gores in accordance with WP 022 01, Paragraphs 18 thru 20.

35. FOUR-LINE RELEASE LANYARD REMOVAL, INSTALLATION, REPLACEMENT.

Support Equipment Required

Part Number	Nomenclature
Refer to WP 005 00	Bodkin

Materials Required

Specification or Part Number	Nomenclature
1979AS152-1	Lanyard, Four-Line Release
Spectra, braided cord, 600-lb. minimum tensile strength, 66-in. length, natural color	Routing Cord

a. Carefully remove defective Four-Line Release Lanyard from anchor loop by first releasing the Four-Line Release "daisy chain" coupling and removing Four-Line Release Handle Assembly, P/N 1979AS154-1, from lower end of Four-Line Release Lanyard.

b. Take one end of the Spectra routing cord and insert it through the loop on the lower end of the Four-Line Release Lanyard. Using a bodkin, finger trap approximately two inches of the Spectra routing cord into itself to attach the Spectra routing cord to the Four-Line Release Lanyard.

c. Grasp the opposite end of the Four-Line Release Lanyard near the anchor loop and gently pull up so that the Four-Line Release Lanyard and attached Spectra routing cord is pulled through the riser webbing and the entire length of the Four-Line Release Cover Assembly (P/N 1979AS157-1) and the ballistic cloth channel under the cover.

d. After the Spectra routing lanyard is pulled past the end of the Four-Line Release Cover Assembly, undo the finger trap securing the Spectra routing cord to the Four-Line Release Lanyard.

e. With Spectra routing lanyard in place on the riser, route Four-Line Release Lanyard back through Daisy Chain Protection Cover, P/N 1979AS151-1, so that it is no longer covered and undo the lark's head knot that secures the Four-Line Release Lanyard to the anchor loop to completely remove the Four-Line Release Lanyard from the parachute canopy.

f. Attach new Four-Line Release Lanyard, P/N 1979AS152-1, to anchor loop by inserting the loop on the end of the release lanyard through the anchor loop. Take opposite end of release lanyard and insert it through the loop end passed through the anchor loop. Pull tight to form a Lark's head knot.

g. Route new Four-Line Release Lanyard through Daisy Chain Protection Cover.

h. Take end of Spectra routing cord and insert it through the loop on the end of the Four-Line Release Lanyard that extends down from the Four-Line Release Anchor Loop. Using a bodkin, finger trap approximately two inches of the Spectra routing cord into itself to attach the Spectra routing cord to the Four-Line Release Lanyard.

i. Grasp opposite end of Spectra routing cord near bottom of riser and gently pull down so that the Four-Line Release Lanyard is pulled through the riser webbing and the entire length of the Four-Line Release Cover Assembly and the ballistic cloth channel under the cover.

j. After the Four-Line Release Lanyard is pulled past the end of the Four-Line Release Cover Assembly, undo the finger trap securing the Spectra routing cord to the Four-Line release Lanyard.

k. Take the Four-Line Release Handle and insert the loop on the end of the Four-Line Release Lanyard through the small looped end on the end of the handle.

l. Next, insert end of yellow tab through loop on the end of the Four-Line Release Lanyard and pull it completely down so that a lark's head knot is formed to attach the handle to the Four-Line Release lanyard.

NOTE

Plastic square portion on handle assembly will Bottom out on stitching when fully pulled within the riser.

m. With pile fastener on Four-Line Release Handle facing down, pull Four-Line Release Handle into sleeve by pulling Four-Line Release Lanyard from the top of the riser (at the connector link). Bottom edge of yellow tab on handle should be approximately one inch from the bottom end of the pile fastener when the handle is fully stowed within the riser assembly.

36. FOUR-LINE RELEASE LANYARD RIGGING.

Support Equipment Required

Part Number	Nomenclature
Refer to WP 005 00	Bodkin

Materials Required

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

NOTE

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

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

b. Route Four-Line Release Lanyards through Daisy Chain Protection Covers.

c. From the upper end of the Four-Line Release Lanyards, near the anchor loops, measure down 35-in. and mark this measurement on the Four-Line Release Lanyards with an indelible pen.

d. Measure downward an additional 9-in. on both release lanyards and mark this measurement with an indelible pen. These marks will be used to determine the length of the formed daisy chain coupling.

NOTE

Suspension lines can be slid onto a locking pin or similar rod to ensure proper orientation and position during re-assembly.

e. From the AFT/rear connector links, remove suspension lines 1 through 7 and 22 through 28.

f. Route suspension lines 3 and 26 through each of the two Daisy Chain Protection Covers.

NOTE

Do not attach the Ballistic Spreader Gun-firing lanyard to the top connector links and do not torque the nuts.

g. Reattach suspension lines 3 through 7 and 22 through 26 to their respective connector links. Install new nuts onto connector link bolts and tighten only these two nuts.

h. Route suspension line 2/27 through the daisy chain cover and route over and then under the cross-connector strap eyebolt so that the suspension line loop extends several inches from the eyebolt.

i. Route suspension line 1/28 through the daisy chain cover and route over and under the cross-connector strap eyebolt so that the suspension line loop extends several inches from the eyebolt.

j. Turn connector link over towards the inside of the left and right-hand risers so that the loops on suspension lines 1/28 and 2/27 are facing up (Figure 22).

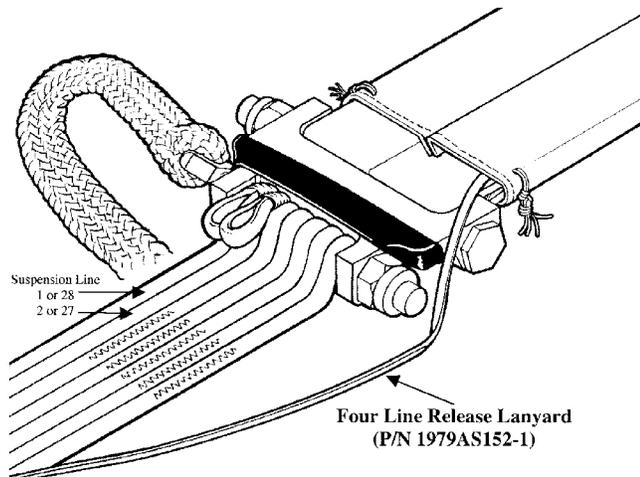


Figure 22. Route Suspension Line 1 and 2 or 27 and 28

k. Make loops in suspension lines 1/28 and 2/27. Pass loops made in suspension lines through telescoped loop at end of suspension lines (Figure 23).

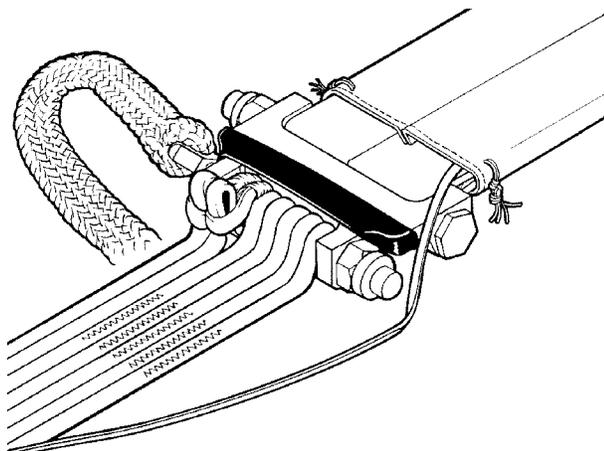


Figure 23. Construct Loop in Suspension Line 1 and 2 or 27 and 28

l. Hold loops and tighten suspension lines 1/28 and 2/27 against eyebolts.

m. Align the 35-in. mark and the 9-in. mark on the Four-Line Release Lanyard to make a 4 1/2-in. loop.

NOTE

Ensure loops are tight around the eyebolt.

n. Pass the 4 1/2-in. loop in the Four-Line Release Lanyard loop through the loops made in suspension lines 1/28 and 2/27. The release lanyard loop will enter through suspension line number 2/27 and exit through suspension line number

1/28. The 35-in. mark and the 9-in. mark should be aligned at the point where the release lanyard enters suspension line 2/27 (Figure 24).

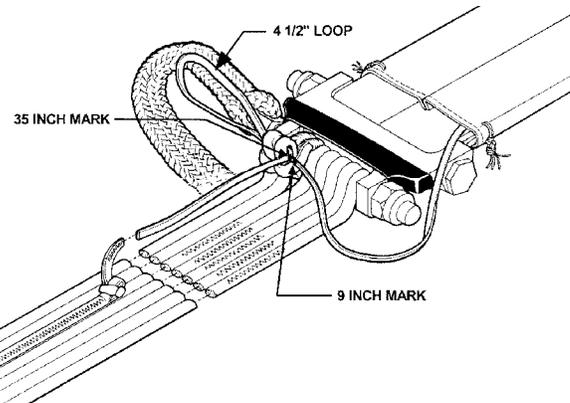


Figure 24. Route Four-Line Release Lanyard

o. Pull the portion of the Four-Line Release Lanyard with the 9-in. mark (lower portion of the lanyard) back from its position a couple inches from the eyebolt where the two marks are aligned so that a 1/2-in. loop extends outward from suspension line 1/28 (Figure 25).

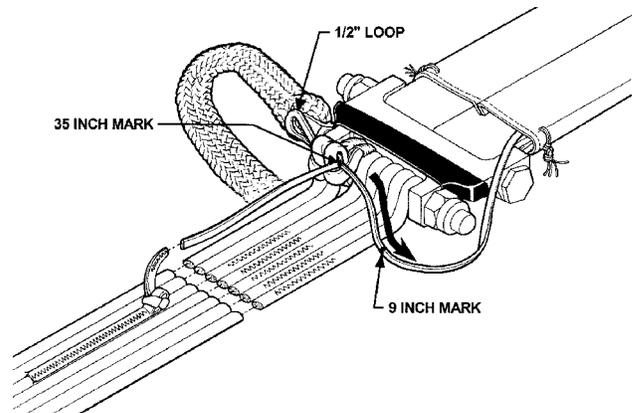


Figure 25. Form 1/2-inch Loop in Four-Line Release Lanyard

p. Make a loop in the lower section of the Four-Line Release Lanyard as it extends from suspension line 2/27 and pass this loop through the 1/2-in. loop made in step o.

NOTE

While tightening the loop in place, ensure that the 35-in. mark on the Four-Line Release Lanyard is aligned between suspension line 2/27 and 3/26.

q. Tighten both loops together.

r. Construct four more loops to form a daisy chain coupling within the 9-in. reference mark (five total). The 9-in. mark should be at the top of the final daisy chain loop (Figure 26). (QA)

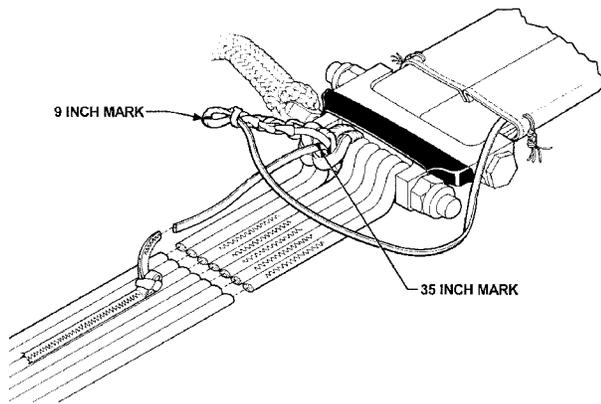


Figure 26. Construct Daisy Chain With Five Loops

s. Mark 1 1/2-in. up from the end of the suspension line on line 3/26 and mark this measurement with an indelible pen. Lay daisy chain coupling completed in step n next to suspension line 3/26 and align the 9-in. mark on Four-Line Release Lanyard with the 1 1/2-in. mark on suspension line 3/26 (Figure 27).

NOTE

Ensure upper portion of four-line release lanyard is routed outboard of suspension line 3/26.

t. With a needle and a piece of waxed Size F-F thread (single, one turn), route needle through suspension line 3/26 at the 1 1/2-in. mark and then through the Four-Line Release Lanyard (not around) at the 9-in. mark, and then return the needle back through suspension line 3/26 at the 1 1/2-in. mark. Tie off with a surgeon's knot followed by a square knot (Figure 27).

u. Apply tension to the suspension lines and conduct a line continuity check ensuring that the lines are not crossed beneath the Daisy Chain Protection Cover. (QA)

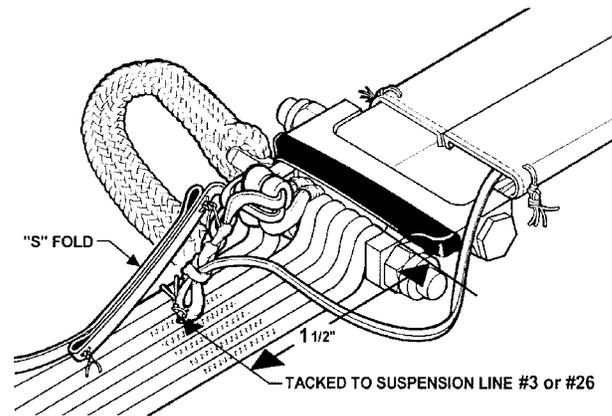


Figure 27. Tack Daisy Chain and "S" Fold Slack in Upper Portion of Lanyard

v. With tension on the risers and suspension lines, pull the Four-Line Release Handle with a pull gage and ensure the lines are released with less than 50 lbs of tension.

w. Inspect the released suspension lines and ensure proper release from the eyebolt.

x. Re-rig the daisy chain formation in accordance with steps b through t.

y. In order to reduce the slack in the Four-Line Release Lanyard between the 35-in. mark and the anchor loop, construct one S-fold approximately two inches long and tack to the release lanyard (itself), under the daisy chain coupling, at each end with A-thread (single, one turn) using a surgeon's knot followed by a square knot. Tie each thread end off with a binder knot (Figure 27). (QA)

NOTE

Ensure excess slack in the four-line release lanyard is tucked within the channel and not between the channel and cover.

z. After forming the daisy chain, there will be excess slack in the Four-Line Release Lanyard between the daisy chain and handle assembly. Pull excess slack out hole in cover where seat-man separation lanyard attachment point protrudes. Using a bodkin, insert it into the opening on each riser where the seat/man separation lanyard is attached and carefully push the excess lanyard down in the channels toward the Four-Line Release Handle in small bites (approximately 2-3 in.) until all slack is taken up. (QA)

aa. Repeat steps a through v for the opposite riser.

37. REPLACEMENT OF FOUR-LINE RELEASE COVER ASSEMBLY, UPPER AND LOWER SLEEVE ASSEMBLIES.

Support Equipment Required

Part Number	Nomenclature
Refer to WP 005 00	Bodkin
5CN DFBL SLS EP	Slide Fastener

Materials Required

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

Spectra, braided cord, 600-lb. minimum tensile strength, 66-in. length, natural color	Routing Cord
---	--------------

a. With parachute canopy and riser stretched out on packing table, activate Four-Line Release System by pulling downward on Four-Line Release Handle.

b. Carefully remove Four-Line Release Handle Assembly, P/N 1979AS154-1, from lower end of Four-Line Release Lanyard.

c. Take one end of the Spectra routing cord and insert it through the loop on the lower end of the Four-Line Release Lanyard. Using a bodkin, finger trap approximately two inches of the Spectra routing cord into itself to attach the Spectra routing cord to the Four-Line Release Lanyard.

d. Grasp the opposite end of the Four-Line Release Lanyard near the connector links and gently pull up so that the Four-Line Release Lanyard and attached Spectra routing cord is pulled through the riser webbing and the entire length of the Four-Line Release Cover Assembly (P/N 1979AS157-1) and the ballistic cloth channel under the cover.

e. After the Spectra routing lanyard is pulled past the end of the Four-Line Release Cover Assembly, undo the finger trap securing the Spectra routing cord to the Four-Line Release Lanyard, but ensure the routing lanyard is kept in place.

f. Carefully cut four F-F tackings securing Upper Stowage Sleeve, P/N 1979AS158-1, to riser webbing near parachute canopy connector links.

g. Carefully cut two 6-cord tackings securing Lower Stowage Sleeve, P/N 1979AS155-1, to riser webbing near parachute canopy release assembly.

h. Carefully cut six 6-cord tackings securing the Four-Line Release Cover Assembly to the riser webbing.

i. Remove connector link nuts securing aft riser leg to connector link.

j. Slide aft riser loop off connector link bar.

k. Remove Upper Stowage Sleeve from riser assembly.

l. Move Lower Stowage Sleeve downward so that it does not cover the Four-Line Release Cover Assembly.

m. Undo slide fastener on Four-Line Release Cover Assembly, and remove cover from risers.

NOTE

Ensure seam of upper flute on the cover assembly is in the center of the riser. Do not remove routing lanyard from the risers.

n. Install upper flute of replacement Four-Line Release Cover Assembly onto short/aft leg of riser assembly.

o. Undo slide fastener on cover (if applicable) and wrap lower portion of cover around riser. Ensure seatman separation lanyard attachment point protrudes through hole in cover and is centered within hole.

p. Use slide fastener (P/N 5CN DFBL SLS EP) to close slide fastener on cover.

q. After closing cover, remove slide fastener.

r. Slide Upper Stowage Sleeve over short/aft leg of riser and cover combination.

s. Attach short/aft leg of riser to aft connector link (suspension lines 1 through 7 or 22 through 28).

t. Install nuts (P/N F42NKE-054) on short/aft leg of riser connector link bolts and finger tighten.

u. Slide Lower Sleeve Assembly, P/N 1979AS155-1, over lower end of riser and cover combination with the flap towards end of riser (Figure 28).

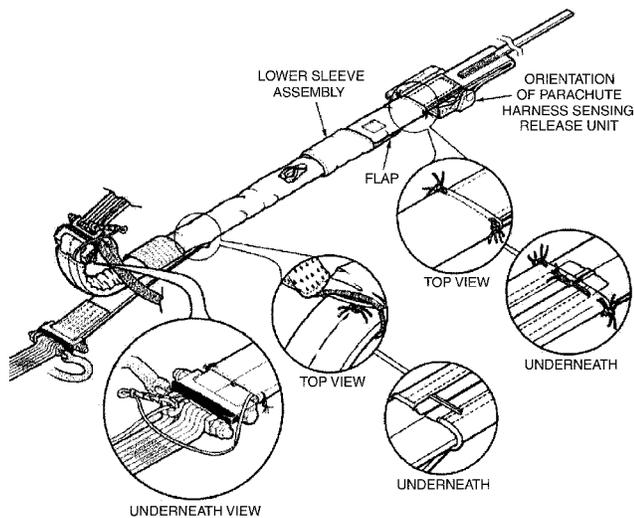


Figure 28. Attachment of Riser Cover

v. Perform the following tackings to secure the Four-Line Release Cover Assembly. All tackings use waxed 6-cord thread (doubled, one turn) tied with a surgeon's knot followed by a square knot and then tie-off each end with an overhand knot. (QA)

NOTE

Ensure Spectra routing cord traveling within riser is not tacked to the riser while tacking the cover to the riser.

(1) Near the parachute connector links, approximately 1/4-in. from the end of the cover, tack each end of the cover, tack each end of the cover to the riser.

NOTE

Ensure tackings passing around the slide fastener are through the Cover material and not only the slide fastener material.

(2) On the middle portion of the riser assembly where the two webbings converge to a single riser, secure the slide fastener together by passing the needle from a point beneath the unprotected riser (front riser webbing) up through the riser (approximately 1/4-in. from the edge of the cover) and through the protection cover on one side of the slide fastener. Bring the needle over the slide fastener and then down through the cover and riser to the middle of the two riser webbings (Figure 28).

(3) At the bottom end of the protection cover, approximately 1/4-in. from the end of the cover, secure the ends of

the slide fastener together by passing a needle and through the cover on one side of the fastener. Bring needle under cover to opposite side of slide fastener making sure not to penetrate the riser webbing. Finally, bring needle up through cover (Figure 28).

(4) Near the bottom of the risers where the protection covers end, approximately 1/4-in. from the end of cover, secure each end of the covers to the risers (Figure 22).

w. Take end of Spectra routing cord near connector link and insert it through the loop on the end of the Four-Line Release Lanyard that extends down from the Four-Line Release Anchor Loop. Using a bodkin, finger trap approximately two inches of the Spectra routing cord into itself to attach the Spectra routing cord to the Four-Line Release Lanyard.

x. Grasp opposite end of Spectra routing cord near bottom of riser and gently pull down so that the Four-Line Release Lanyard is pulled through the riser webbing and the entire length of the Four-Line Release Cover Assembly and the ballistic cloth channel under the cover.

y. After the Four-Line Release Lanyard is pulled past the end of the Four-Line Release Cover Assembly, undo the finger trap securing the Spectra routing cord to the Four-Line Release Lanyard.

NOTE

Ensure Four-Line Release Lanyard is not wrapped around Suspension lines.

z. Take the Four-Line Release Handle and insert the loop on the end of the Four-Line Release Lanyard through the small looped end on the end of the handle.

aa. Next, insert end of yellow tab through loop on the end of the Four-Line Release Lanyard and pull it completely down so that a lark's head knot is formed to attach the handle to the Four-Line Release Lanyard.

NOTE

Plastic square portion on handle assembly will bottom out on stitching when fully pulled within the riser.

ab. With pile fastener on Four-Line Release Handle facing down, pull Four-Line Release Handle into sleeve by pulling four-line release lanyard from the top of the riser (at the connector link). Bottom edge of yellow tab on handle should be approximately one inch from the bottom end of the pile fastener when the handle is fully stowed within the riser assembly.

38. FABRICATION OF DAISY CHAIN COVER.

Materials Required

Specification or Part Number	Nomenclature
MIL-W-5625	Webbing, Nylon, Tubular, 1-in. wide, Natural Color
—	Sergene

- a. Using scissors, cut a piece of nylon webbing 3 1/2-in. long.
- b. To prevent the ends from unraveling, apply sergene to 1/8-in. of each end.
- c. With a black indelible marking pen, write the part number of the cover (1979AS151-1) on one side of the cover in 1/4-in. high letters.

39. ATTACHMENT OF BRACKET SUPPORT AND DOUBLER. Attach the Support Assembly Bracket, P/N 14125-1, and Doubler Support, P/N 14126-11, to the headrest assembly as follows:

Support Equipment Required

Part Number	Nomenclature
T14137-1	Template, Drill Bit, Number 11 (.191 in.)

Materials Required

Specification or Part Number	Nomenclature
14125-1	Bracket Support
14126-11	Doubler Support
MIL-A-46146	Adhesive/Sealant, Non-corrosive, Silicone RTV, Group I/II/II, Type I or Group I, Type II
NAS 603-9P	Screw
AN960KD10LL	Washer
22NKTM-02	Nut
22NKTM-82	Nut

a. Remove riser stowage pouch assembly, P/N (14689-1). Open headrest container and remove contents in accordance with WP 022 01.

b. Remove two screws (MS27039-0807), washers (AN960KD8L) and nuts (22NKTM-82) holding the upper section of liner and connector link attachment loops, and pull back the edges of the liner assembly, on the side of the headrest nearest the top, to expose the fiberglass shell. Retain the screws and washers. Dispose of nuts in accordance with locally established procedures.

NOTE

End of template with drill holes should face top of headrest.

c. Align template, P/N T14137-1, on one side of headrest using the existing holes on headrest for seat attachment (Figure 29).

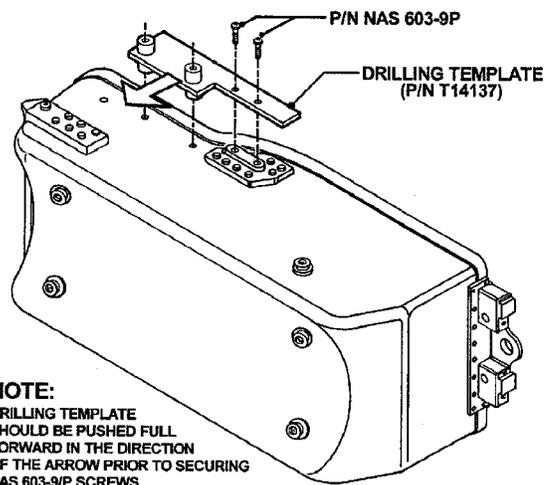


Figure 29. Drilling Headrest Assembly

d. With template in full forward position towards face of headrest, secure template to headrest with two 10-32 screws (NAS 603-9P) in accordance with Figure 29. (QA)

e. Fold a piece of ordnance tape similar at a ninety-degree angle and place on the inner sides of the headrest under the location of the holes to be drilled such that the adhesive portion of the tape will catch the fiberglass shavings.



Ensure headrest liner will not be damaged during drilling and drilling debris will not impact other maintenance operations in the shop.

f. Using a number 11 (.191-in.) drill bit and the guide holes, drill two holes completely through the fiberglass shell of the headrest.

g. Remove template and repeat steps c thru f on the opposite side of the headrest.

h. Clean the area around the holes and remove fiberglass shavings and ordnance tape from the headrest container.



Adhesive/Sealant, MIL-A-46146

12



Ensure MIL-A-46146 Adhesive/Sealant is not inserted into middle two holes of P/N 14125-1.

i. Seal all headrest contacting surfaces of the Support Assembly Bracket, P/N 14125-1, and Doubler Support, P/N 14126-11, with MIL-A-46146, Adhesive/Sealant.

j. Position the Doubler Support, P/N 14126-11, on the inside of the headrest and the Support Assembly Bracket, P/N14125-1, on the outside of the headrest.

k. Attach Doubler Support and Support Assembly Bracket to headrest using two pan head screws, P/N NAS603-9P, with the screw heads on the inside of the headrest. Install fasteners wet in accordance with MIL-STD-403, utilizing MIL-A-46146 vice TT-P-1757 (Figure 30).

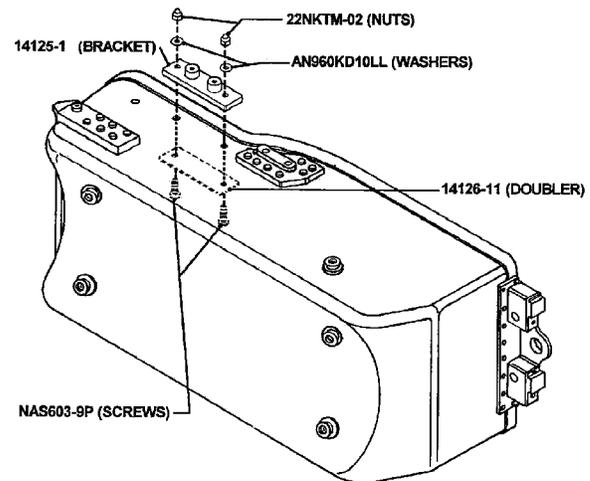


Figure 30. Installation of Bracket Assembly (P/N 14125-1)

l. Place one washer each, P/N AN960KD10LL, over the threaded portions of the screws on the outside of the headrest.

m. Secure the Doubler Support and Support Bracket Assembly in place with two self-locking nuts, P/N 22NKTM-02 and tighten.

n. Repeat steps i thru m for the opposite side of the headrest.

o. Clean excess sealant from interior and exterior of headrest.

p. Fold back edges of liner over installed Doubler Support and install fasteners and washers removed in step b with a new locking nut, P/N 22NKTM-82.

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ORGANIZATIONAL, INTERMEDIATE, AND DEPOT MAINTENANCE

ILLUSTRATED PARTS BREAKDOWN

A/P28S-28, -30, and -31 HEADREST ASSEMBLY

PART NO. 14090-21, 14090-19, 14690-17, and 14090-3

List of Effective Work Package Pages

<u>Page No.</u>	<u>Chg. No.</u>						
1	11	5	10	8	10	10	10
2 thru 4	9	6 thru 7	9	9	11		

Reference Material

Organizational, Intermediate and Depot Maintenance, Illustrated Parts Breakdown,
A/P28S-28, -30 and -31 Headrest Assembly WP 022 01

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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>
ACC 667, Part 2	11 Mar 02	A/P28S-28, A/P28S-30, A/P28S-31 Headrest Assemblies in TAV-8B AV-8B Aircraft, Installation of Four-Line Release System and Over-Inflation Control Line. (WUC1774O, WUC174AO, WUC1749O). ECP-16416.	1 Jun 02	31 Dec 2004

1. INTRODUCTION.

a. This Work Package (WP) contains information for ordering and identifying parts for the A/P28S-28, -30, -31 Headrest Assembly (Figure 1).

2. USABLE ON CODES.

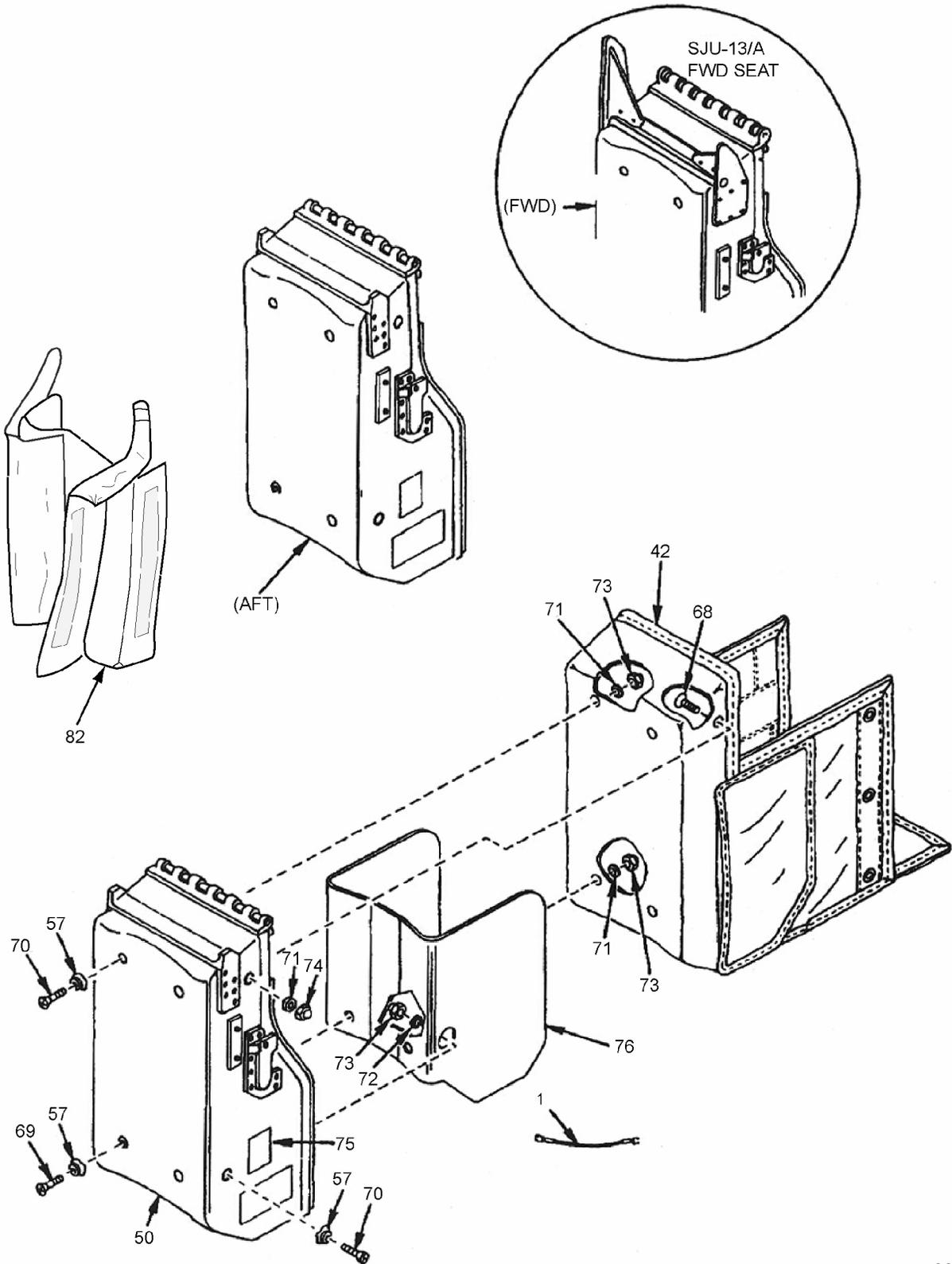
a. The usable on codes in this WP refer to the aircraft applications for the A/P28S-28, -30, -31 Headrest Assembly.

b. The following usable on codes apply this WP:

- A - AV-8B
- B - TAV-8B Forward Seat
- C - TAV-8B Rear Seat

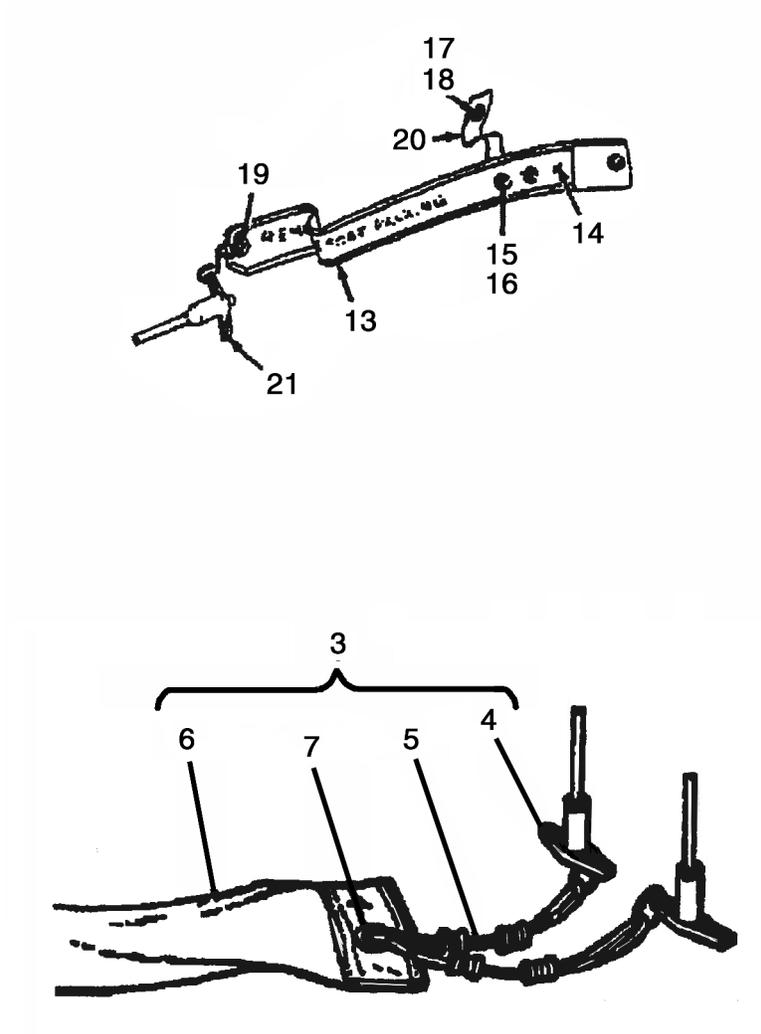
3. SERVICE/TOTAL LIFE.

a. The service/total life information is contained in WP 022 01.



6.2-6521

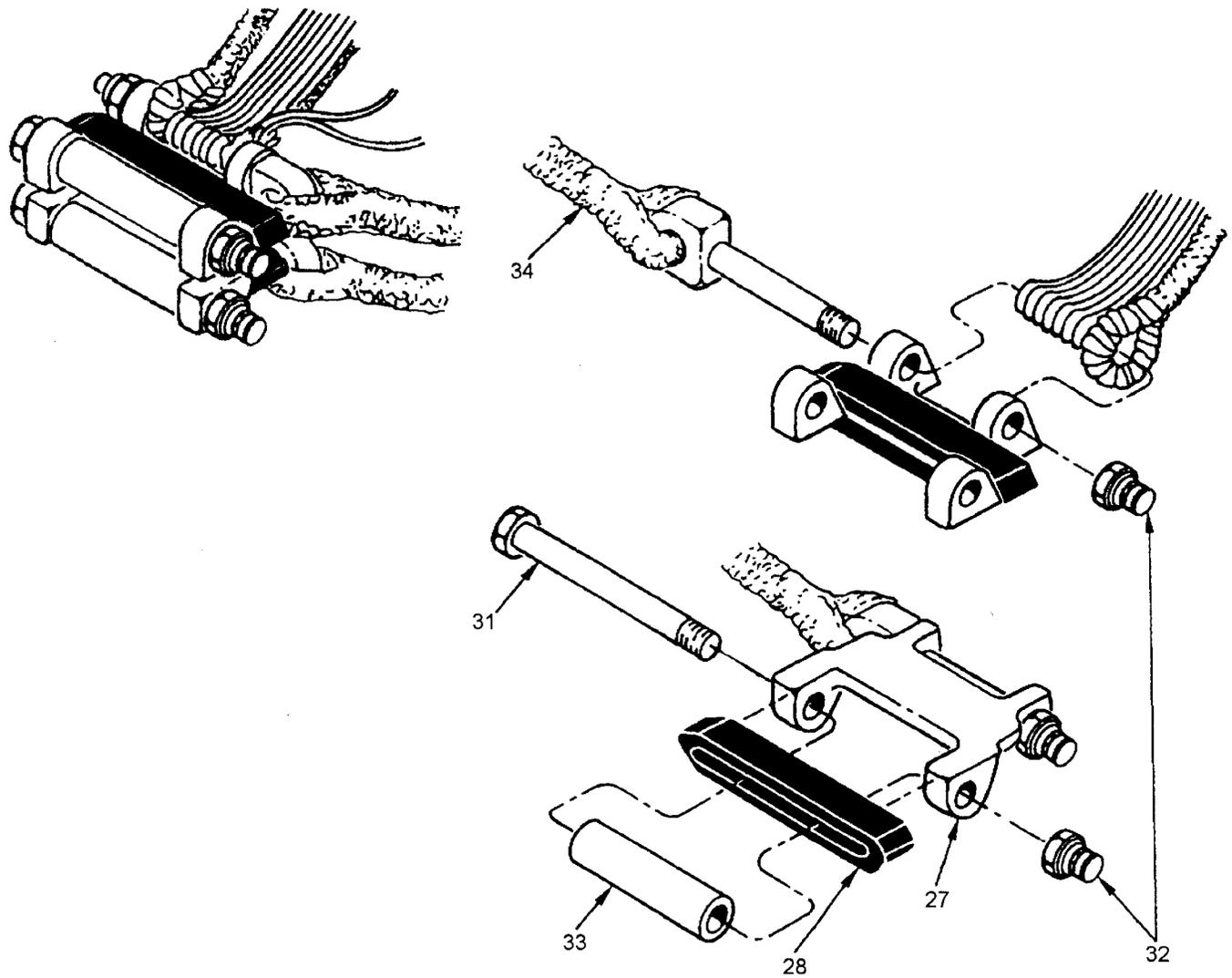
Figure 1. A/P28S-28, -30, -31 Headrest Assembly (Sheet 1 of 9)



6.2-6521A

Figure 1. A/P28S-28, -30, -31 Headrest Assembly (Sheet 2 of 9)





6.2-6521B

Figure 1. A/P28S-28, -30, -31 Headrest Assembly (Sheet 3 of 9)

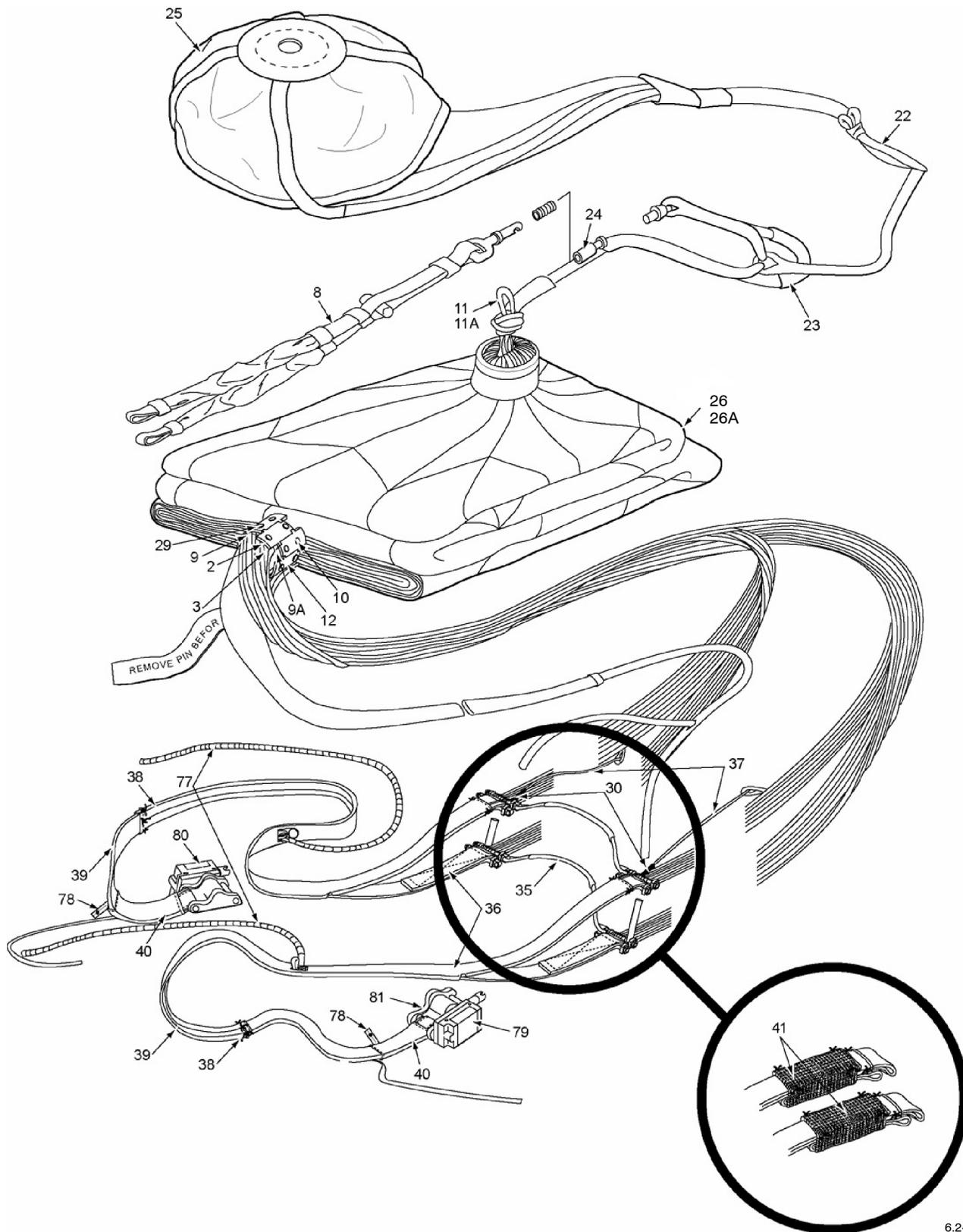
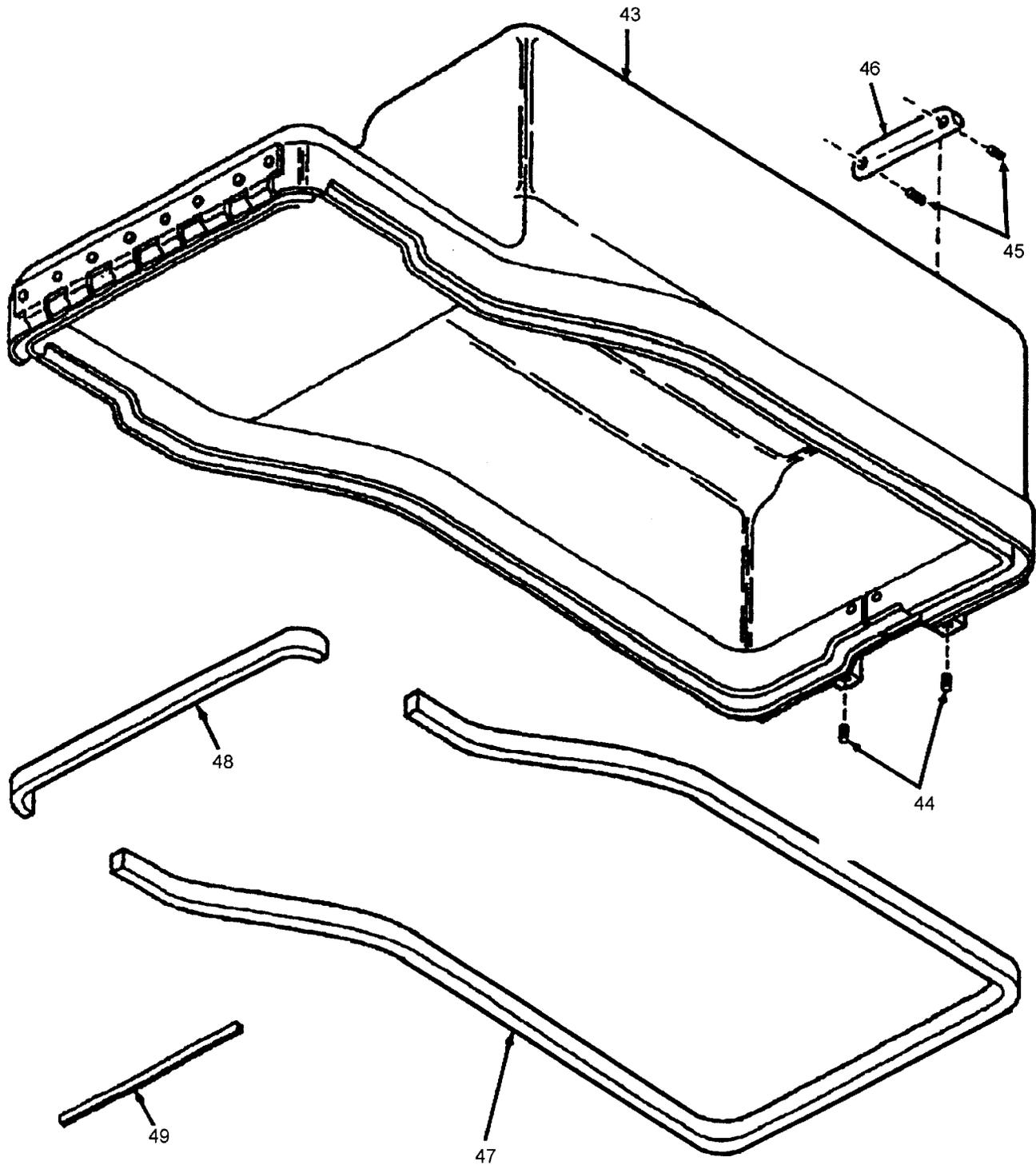


Figure 1. A/P28, -30, -31 Headrest Assembly (Sheet 4 of 9)



6.2-6523

Figure 1. A/P28S-28, -30, -31 Headrest Assembly (Sheet 5 of 9)

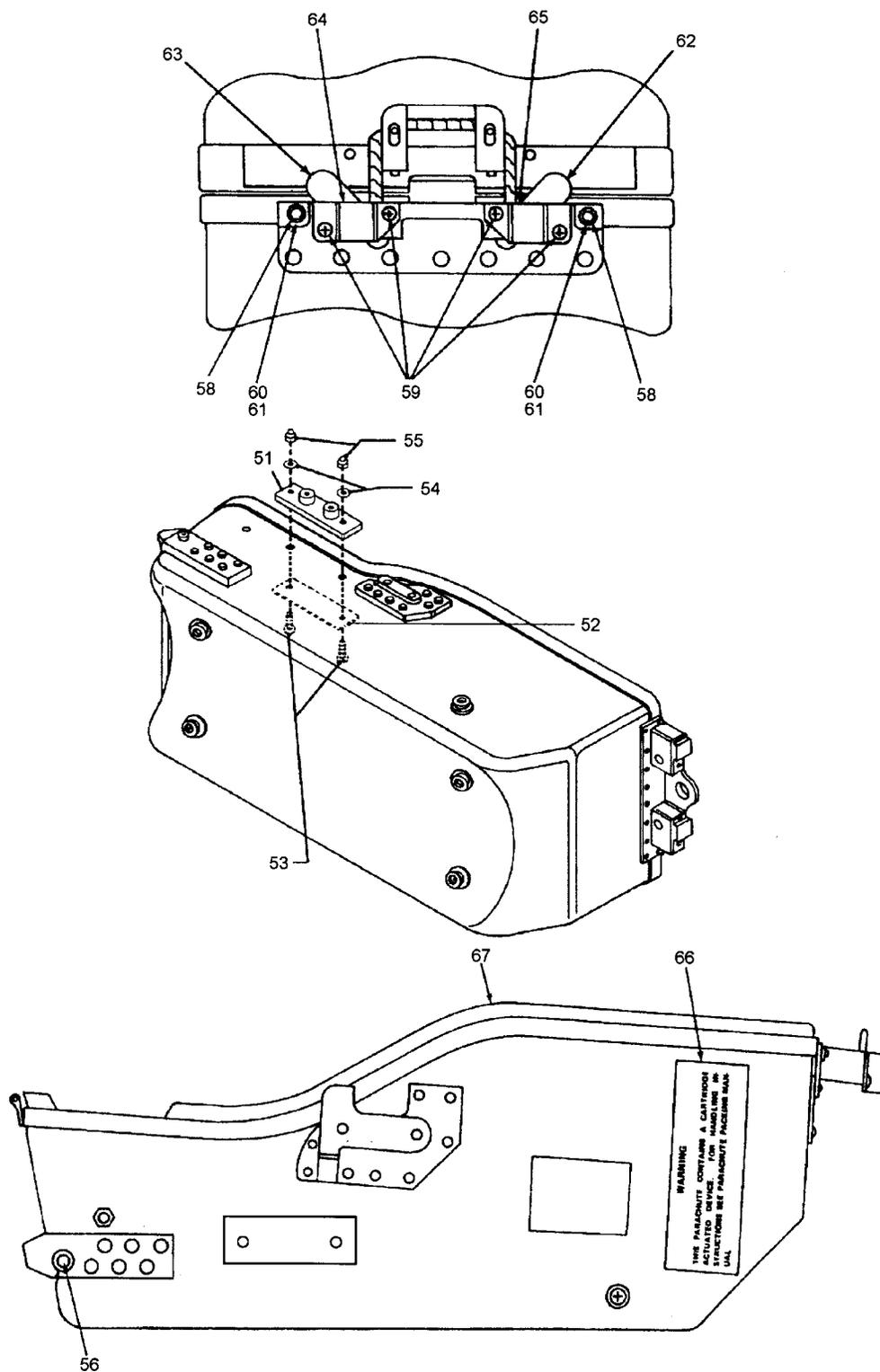


Figure 1. A/P28S-28, -30, -31 Headrest Assembly (Sheet 6 of 9)

INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE	SM&R CODE
	14090-21	HEADREST ASSEMBLY (A/P28S-28A)	REF	A	AGOGD
	14090-19	HEADREST ASSEMBLY (A/P28S-28A) (USE UNTIL EXHAUSTED)	1	A	AGOGD
	14090-17	HEADREST ASSEMBLY (A/P28S-30A)	1	C	AGOGD
	14690-3	HEADREST ASSEMBLY (A/P28S-31A)	1	B	AGOGD
1	472P201C001-1	. CABLE ASSEMBLY	1		PAGZZ
2	825AS100	. CARTRIDGE IMPULSE, CCU33/A	1		PAGZA
3	472P950D053-1	. PIN ASSEMBLY, SAFETY	1		PAOZZ
4	BL53TA155C03	. . PIN, BALL LOCK			PAGZZ
5	472P950D053-7	. . CORD	2		MGGZZ
6	779P521E024-11	. . STREAMER	1		MGGGG
7	MS20230B10	. . . GROMMET ASSEMBLY	2		PAGZZ
8	12220-1	. WORD BRIDLE	1		PAGZZ
9	SK86-0051-9	. SPREADING GUN ASSEMBLY	1		PAGGD
9A	MS16555-630	. . PIN, STRAIGHT HEAD	1		PAGZZ
10	LKD7F52Z5	. . SCREW /26304/	28		PAGZZ
11	472P210D027-1	. . RETAINER LINE	1		MGGZZ
11A	702AS100-1	. . . SLEEVE, TEFLON /MAKE FROM MIL-I-22129/	1		MGGZZ
12	472P215D017-7	. . CANOPY MOUNT	14		PAGZZ
13	SK86-0089-1	. . SAFETY PIN ASSEMBLY	1		PAGGG
14	39768	. . . FLAG ASSEMBLY	1		MGGGG
15	MS27983-4	. . . . EYELET	2		PAGZZ
16	MS27983-3	. . . . STUD	2		PAGZZ
17	MS27983-2N	. . . . SOCKET	2		PAGZZ
18	MS27983-1	. . . . BUTTON	2		PAGZZ
19	MS20230B10	. . . . GROMMET ASSEMBLY	1		PAGZZ
20	39768-2	. . . . STRAP	1		MGGZZ
21	MS17985C310	. . . PIN, QUICK RELEASE	1		PAOZZ
22	472P224E001-1	. BRIDLE ASSEMBLY, PILOT PARACHUTE	1		PAGGG
23	676AS100-2	. . LABEL/NOTE 3/	1		XBGZZ
24	472P224D002-7	. . HOUSING	1		XBGZZ
25	472P223E001-1	. PARACHUTE ASSEMBLY, PILOT	1		PAGGG
26	472P211E001-51	. CANOPY ASSEMBLY/NOTE 4/	1		PAGGG
26A	472P211E001-7	. . CANOPY	1		XAGGG
27	472P214D002-3	. . LINK ASSEMBLY, CONNECTOR	4		PAGZZ
28	12059-11	. . . SEAL	4		PAGZZ
29	1979AS150-1	. . OVER-INFLATION CONTROL LINE	1		MGGZZ
30	1979AS151-1	. . DAISY CHAIN COVER SLEEVE	2		MGGZZ
31	NAS6205-38	. . BOLT	4	*	PAGZZ
	NAS1105-38	. . BOLT	4		PAGZZ
32	F42NKE-054	. . NUT	4	*	PAGZZ
	42NKE-054	. . NUT	4		PAGZZ
33	12258-11	. . SLEEVE	4		PAGZZ
34	472P211E001-3	. . STRAP ASSEMBLY, CROSS CONNECTOR	2		PAGGG

Figure 1. A/P28S-28, -30, -31 Headrest Assembly (Sheet 7 of 9)

INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE	SM&R CODE
35	676AS100-2	. . . LABEL/NOTE 3/	2		XBGZZ
36	14650-5	. RISER ASSEMBLY	2		PCGGZ
37	1979AS152-1	. FOUR-LINE RELEASE LANYARD	2		PAGZZ
38	1979AS157-1	. FOUR-LINE RELEASE COVER ASSEMBLY	2		PAGZZ
39	1979AS154-1	. FOUR-LINE RELEASE HANDLE ASSEMBLY	2		PAGZZ
40	1979AS155-1	. LOWER SLEEVE ASSEMBLY	2		PAGZZ
41	1979AS158-1	. UPPER SLEEVE ASSEMBLY	2		PAGZZ
42	14109-1	. LINER ASSEMBLY	1		PAGGG
43	14094-1	. LID ASSEMBLY	1		PAGGD
44	MS5165-10	. . SET SCREW	2		PAGZZ
45	MS18065-36	. . SET SCREW	2		PAGZZ
46	472P230C005-7	. . INSERT	1		PAGZZ
47	25023-13	. . GASKET /SEE NOTE 1/	1		MGGZZ
48	25023-11	. . GASKET /SEE NOTE 2/	1		MGGZZ
49	472P230C017-7	. . SPACER	1		PAGZZ
50	14093-9	. CONTAINER	1	A,C	PAGGD
	14693-7	. CONTAINER	1	A	PAGGD
	14693-5	. CONTAINER	1	B	PAGGD
51	14125-1	. . BRACKET SUPPORT	2		PAGZZ
52	14126-11	. . DOUBLER SUPPORT	2		PAGZZ
53	NAS603-9P	. . SCREW	4		PAGZZ
54	AN960KD10LL	. . WASHER	4		PAGZZ
55	22NKTM-02	. . NUT	4		PAGZZ
56	MS24693-S49	. . SCREW	2	A,C	PAGZZ
	MS24693-S48	. . SCREW	2	B	PAGZZ
57	MS27983-3	. . STUD	10		PAGZZ
58	NAS1202-5	. . SCREW	2		PAGZZ
59	MS21090-620	. . SCREW	4		PAGZZ
60	MS21042-08	. . NUT	2		PAGZZ
61	AN960PD8	. . WASHER	2		PAGZZ
62	472P220C004-8	. . RELEASE	1		PAGZZ
63	472P220C004-7	. . RELEASE	1		PAGZZ
64	472P220C005-7	. . RETAINER, CONTAINER ASSEMBLY, LH	1		PAGZZ
65	472P220C005-8	. . RETAINER, CONTAINER ASSEMBLY, RH	1		PAGZZ
66	472P200C004-7	. . LABEL, WARNING	2		MDGZZ
67	14097-11	. . SEAL	1		PAGZZ
68	MS27039-0807	. SCREW	2		PAGZZ
69	MS24693-S52	. SCREW	2		PAGZZ
70	MS24693-S51	. SCREW	4		PAGZZ
71	AN960KD8L	. WASHER	4		PAGZZ
72	AN960KD8	. WASHER	4		PAGZZ
73	22NKM-82	. NUT	2		PAGZZ
74	22NKTM-82	. NUT	4		PAGZZ
75	12382-11	. PLATE, IDENTIFICATION	1		MDGZZ
76	14088-11	. PLATE ASSEMBLY	1		PAGZZ

Figure 1. A/P28S-28, -30, -31 Headrest Assembly (Sheet 8 of 9)

INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE	SM&R CODE
77	1615-030	. SEAT RELEASE LANYARD	2		PCOZZ
78	14110-1	. RETAINER STRAP ASSEMBLY- RISER	2		PCOZZ
79	852AS117-3	. SENSING RELEASE UNIT, PARACHUTE HARNES MXU-746/P LEFT SIDE	1		AGGGG
80	852AS117-4	. SENSING RELEASE UNIT, PARACHUTE HARNES MXU-747/P RIGHT SIDE	1		AGGGG
81	990055-1	. . RELEASE ASSEMBLY, CANOPY/99449/ . . .	2	*	PAGZZ
	015-10307-5	. . RELEASE ASSEMBLY, CANOPY/99449/ . . .	2	*	PAGZZ
82	14689-1	. RISER POUCH ASSEMBLY	1		PAOOO

- NOTES:
1. Make from vinyl 0.25 x 0.25 x 38.0.
 2. Make from vinyl 0.12 x 0.25 x 8.0.
 3. Available from the In-Service Support Team (ISST).
 4. New canopies received from supply may be marked as a -5 part number. This part number is comprised of a -7 parachute canopy and attached connector link assemblies. Upon incorporation of the Four-Line Release Modification, the Parachute Canopy Assembly is redesignated as a -51.

Figure 1. A/P28S-28, -30, -31 Headrest Assembly (Sheet 9 of 9)

ORGANIZATIONAL MAINTENANCE

REPAIR PROCEDURES

A/P28S-28 -30, and -31 HEADREST ASSEMBLY

PART NO. 14090-19, 14690-3, and 14090-17

List of Effective Work Package Pages

<u>Page No.</u>	<u>Chg. No.</u>						
1	8	2	6				

Reference Material

None

Alphabetical Index

<u>Title</u>	<u>Page</u>
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Parachute Harness Sensing Release Unit (PHSRU)	2
PHSRU Battery and Sensor Plug Replacement	2
PHSRU Torque Seal Replacement	2

Record of Applicable Technical Directives

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 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. PARACHUTE HARNESS SENSING RELEASE UNIT (PHSRU).

5. PHSRU TORQUE SEAL REPLACEMENT.

Materials Required

Specification or Part Number	Nomenclature
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F-900 Torque Seal (Color Optional)	Sealing Compound
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- 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 1).

6. PHSRU BATTERY AND SENSOR PLUG REPLACEMENT.

Support Equipment Required

Specification or Part Number	Nomenclature
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FLUKE-77	Multimeter
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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.

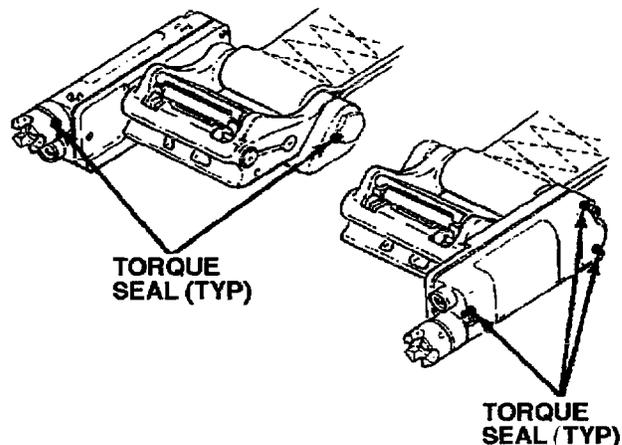


Figure 1. Replacement of Torque Seal on PHSRU

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