

**ORGANIZATIONAL AND INTERMEDIATE MAINTENANCE**

**DESCRIPTION AND PRINCIPLES OF OPERATION**

**PCU-33/P SERIES PARACHUTE RESTRAINT HARNESS ASSEMBLY**

**PART NO. 829AS100**

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**Reference Material**

Intermediate Maintenance, Repair Procedures, PCU-33/P Series Parachute Restraint Harness Assembly . . . . . WP 008 03

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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 623	14 Feb 96	Riser Restraint Keeper (RAMEC P-08-95)	1 Jul 96	31 Dec 03

**1. DESCRIPTION.****2. GENERAL.**

a. The PCU-33/P series Parachute Restraint Harness Assemblies provide for integration of the aircrew's parachute harness, lap belt assembly and shoulder restraint harness. Harness webbing is reeved thru the torso garment to retain it in a position to help easy donning and doffing. The harness provides the mobility to the aircrew while providing restraint in the seat and serves as a parachute harness in case of aircraft ejection or bail-out.

b. The PCU-33/P series parachute restraint harness consists of nylon webbing encased in a nylon fabric channel and is configured into a sleeveless, legless, torso garment available in 16 stock sizes, extra small to extra-extra large long. In addition to these stocked sizes a custom-fit harness is available to those aircrew who are unable to be properly fitted with the available stock sizes. Shoulder restraint adjustable straps with canopy release adapters provide attachment of the parachute riser. A lap belt with quick-release adapters is attached to lap belt alignment webbing. The lap belt provides attachment to ejection seat, survival seat kit and parachute assembly. Two lap belt support straps are attached to the main sling on both sides of the harness near the chest strap channel and extending down forming a loop around and secured to the lap belt adjacent to the release fitting adapters. These straps provide support in carrying the weight of the seat kit transmitted thru the harness during parachute opening shock preventing damage to the abdominal area. Anti-rotation cinch straps are installed on front leg straps to ensure proper harness alignment while suspended and to improve overall fit of the harness. Webbing bands are incorporated at waist area for attaching a life preserver in event a survival vest is not used and allowing for various configurations as authorized. The garment is closed by a slide fastener at the front. Hook and eyelets are installed under slide fastener to reduce strain on slide fastener when closing. An adjustable chest strap provides final one point adjustment of parachute restraint harness to the wearer. The chest strap is secured by a reversible adapter and hook and pile tape. A D-Ring with gate is attached to right shoulder adjustable strap interweaved with canopy release adapter. The D-Ring with gate is for attaching a helicopter hoist hook during rescue.

**NOTE**

Functions, inspection and maintenance instructions apply equally to all approved configurations except as may be noted.

**3. AIRCRAFT APPLICATIONS.**

a. The subassemblies listed in Figure 1 make up PCU-33/P parachute restraint harness.

**4. CONFIGURATIONS.**

a. The only authorized configurations are shown in Figures 2 thru 7.

**5. FUNCTION.****NOTE**

The harness must fit aircrew properly to provide the most restraint and protection. For use with bulkier winter flight clothing, it may be necessary to use a larger size harness.

a. The harnesses are worn by aircrew aboard an aircraft fitted with a parachute designed for the integrated system.

b. These harnesses are attached to the parachute as follows:

(1) When aboard the aircraft and seated, the aircrew attaches the canopy release to the harness release adapters.

(2) The lap belt is attached to Seat Kit Unit (SKU), Rigid Seat Survival Kit (RSSK), or Standard Soft Pack (SSP) by attaching the respective lap belt adapters.

**6. SIZING AND FITTING.**

a. The PCU-33/P series parachute restraint harness must fit the aircrew properly to provide protection and comfort. The proper size harness must be identified and fit of the selected size must be observed. Also, the fit must be observed with aircrew in the ejection seat to ensure that best restraint is provided. Lastly, aircrew must be suspended in the harness and distribution of weight and body shift observed. To fit the PCU-33/P restraint harness to the aircrew, do as follows:

(1) Select an initial harness size from range of stock sizes by observing the body build and height of aircrew. The size initially selected may not prove to be the best fit for the aircrew. A large or smaller size harness is tried until best fit is achieved. The parachute restraint harness is illustrated in (Figure 8) with nomenclature of harness parts requiring attention in sizing and fitting. To find the best fitting harness see the following when the aircrew is donning and adjusting the harness.

AIRCRAFT		AIRCRAFT HARNESS APPLICATION CHART												
		AV-8B, TAV-8B	TA-4	EA-6	E-2	F-4	F-14	F/A-18	T-45	S-3	T-2C	HARNESS PART NUMBER	HARNESS TYPE DESIGNATOR	HARNESS CONFIGURATION DESCRIPTION
		X		X	X	X						829AS100-28	PCU-55/P	HEED POCKET, SURVIVAL ITEM
		X	X	X	X	X	X	X	X	X		829AS100-39	PCU-52/P	POCKETS. EMPTY. SV-2
		X	X	X	X	X	X	X				829AS100-38	PCU-51/P	POCKETS. EMPTY
		X							X			829AS100-26	PCU-50/P	POCKETS. EQUIP. LPA. DILUTER REG
		X										829AS100-37	PCU-39/P	POCKETS. EQUIP. LPA OBOGS
		X	X	X	X	X	X	X				829AS100-10	PCU-36/P	BASIC. SV-2 STRAPS
		X	X	X	X	X	X	X				829AS100-36	PCU-34/P	POCKETS. EQUIP. LPA
		X	X	X	X	X	X	X				829AS100-7	PCU-33/P	BASIC HARNESS

Figure 1. Aircraft Harness Application Chart

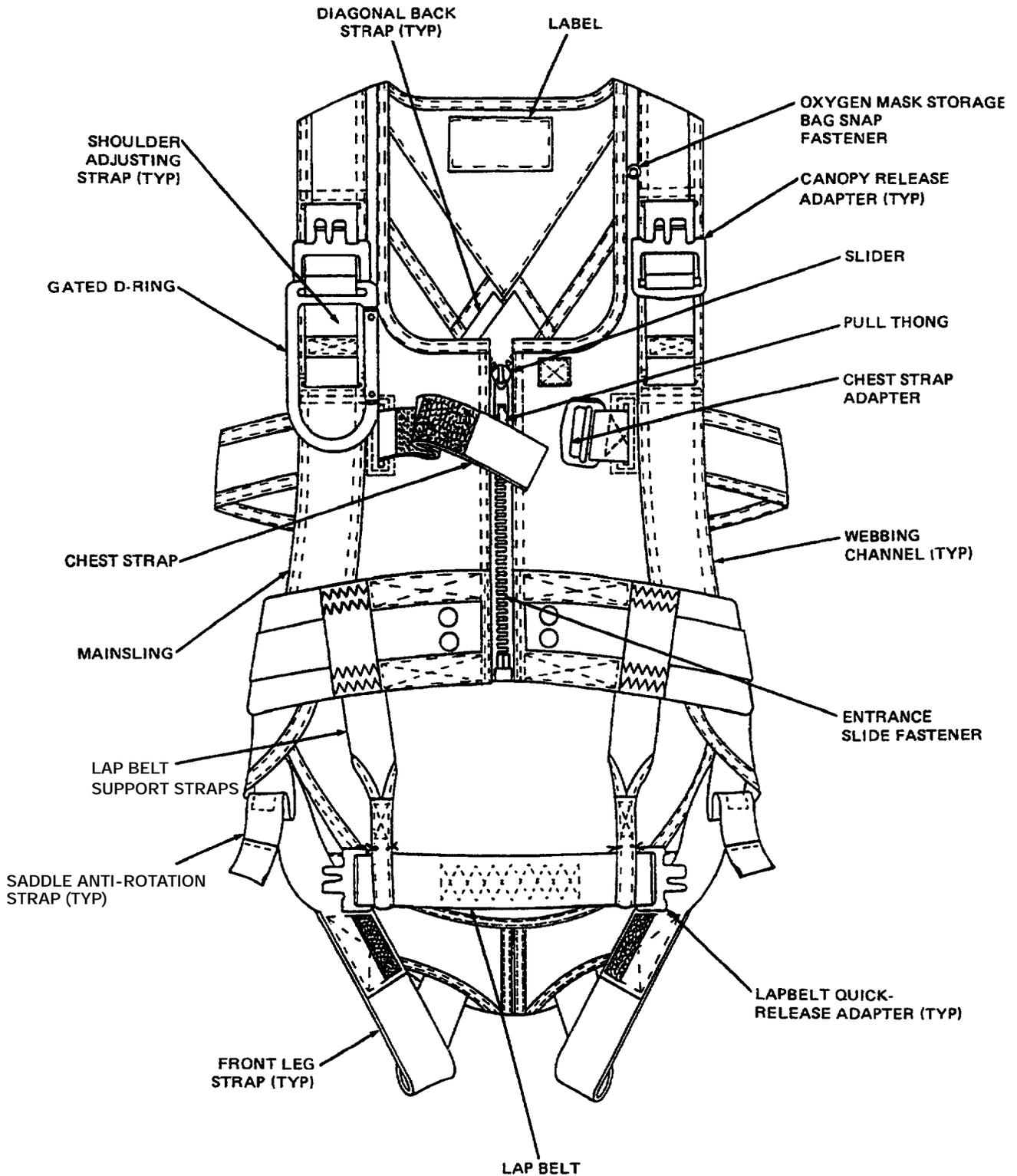
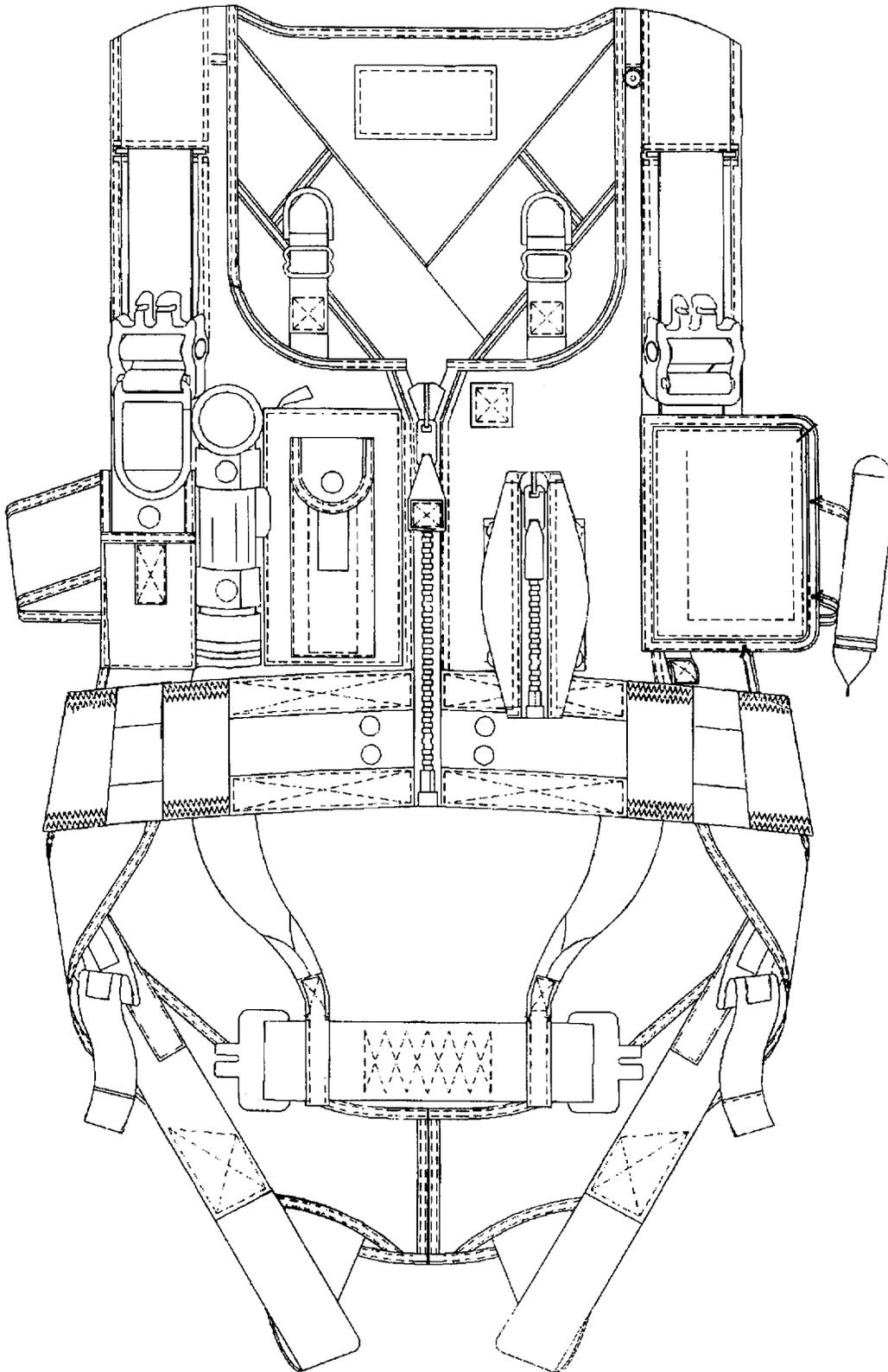


Figure 2. PCU-33/P, 829AS100-7 Parachute Restraint Harness Assembly



**Figure 3. PCU-34/P, 829AS100-36 Parachute Restraint Harness Assembly  
(PCU-51/P, 829AS100-38 Same as Above With Empty Pockets and No Flashlight)**

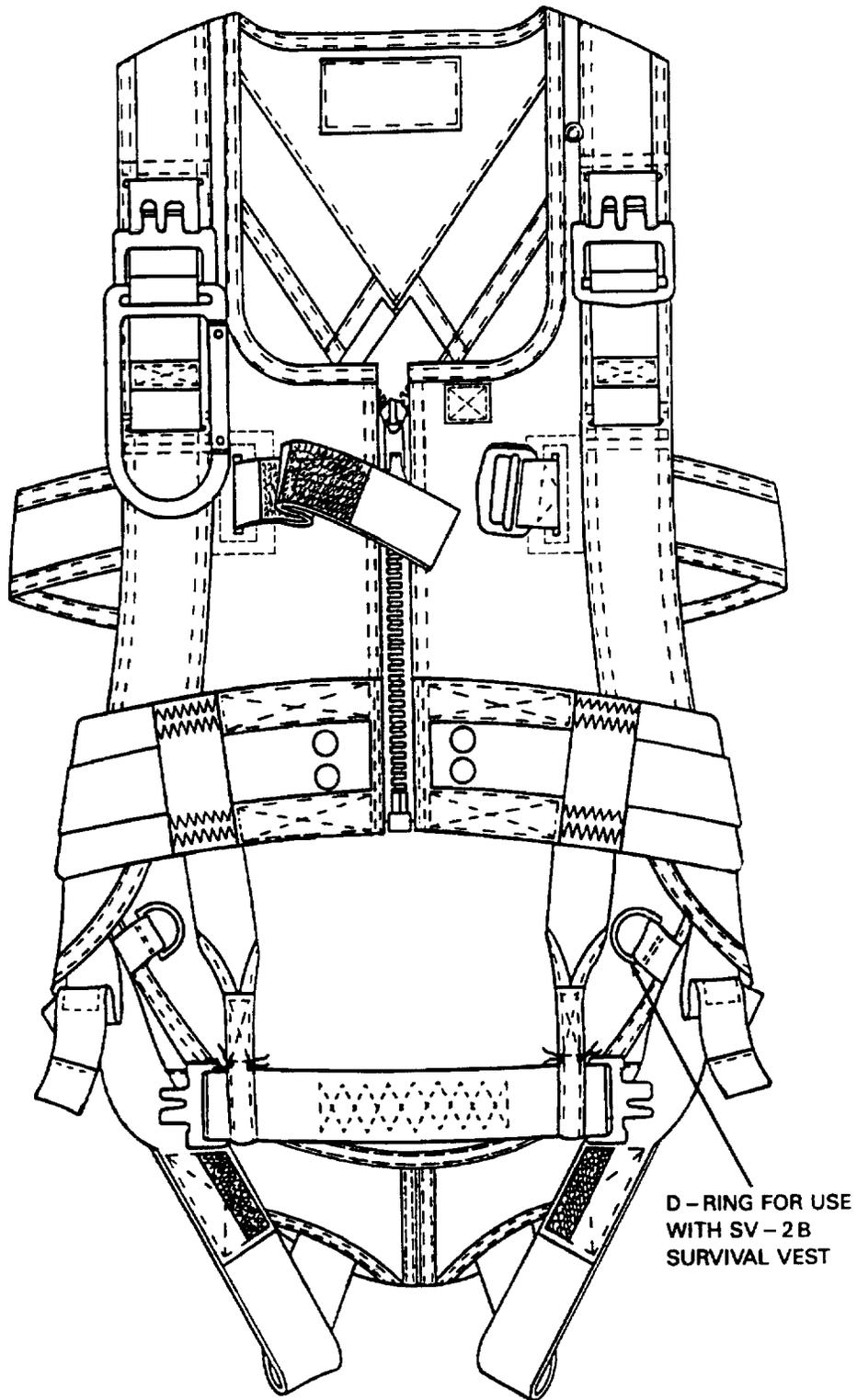


Figure 4. PCU-36/P, 829AS100-10 Parachute Restraint Harness Assembly (With D-Rings Attached)

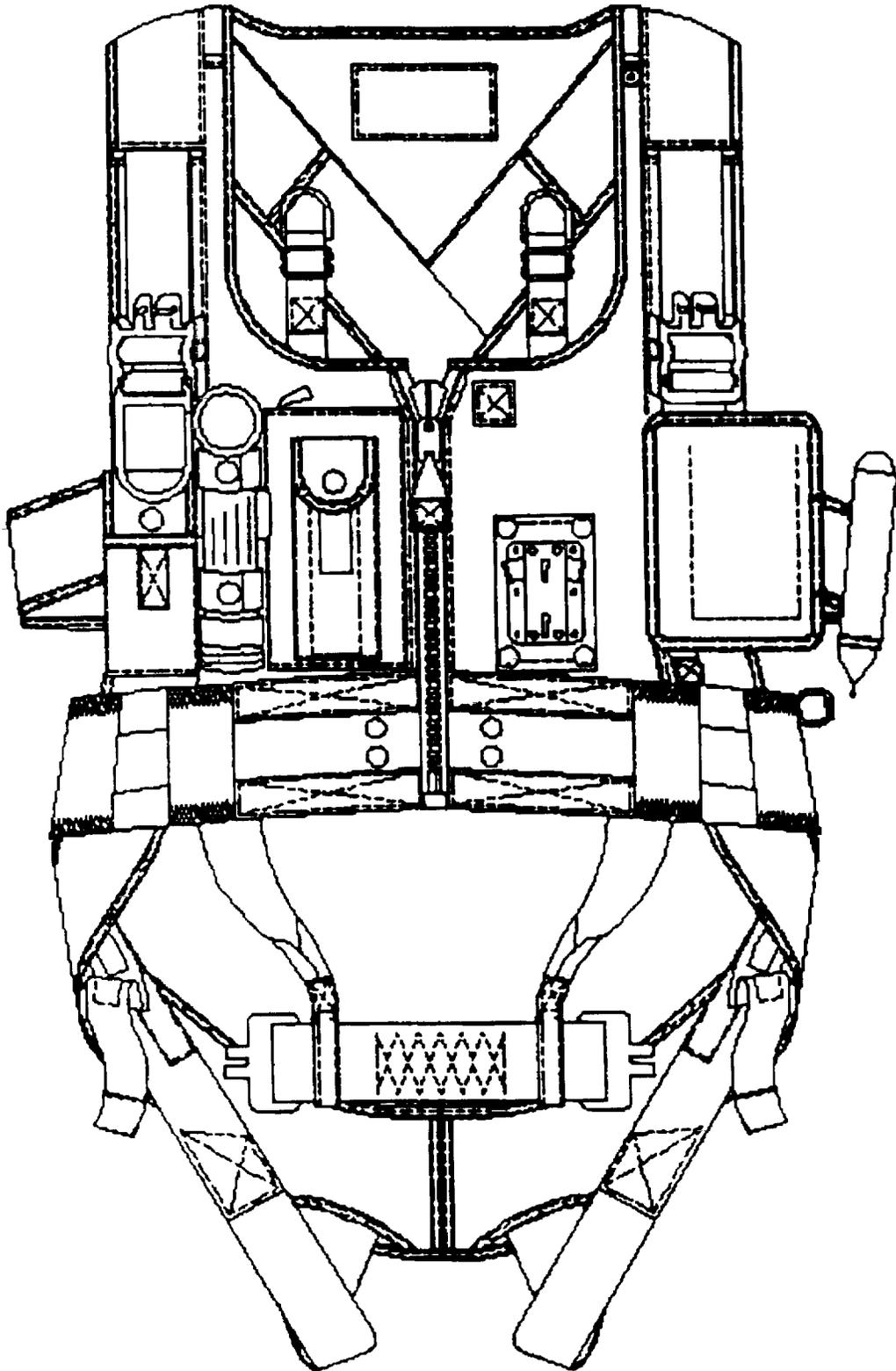
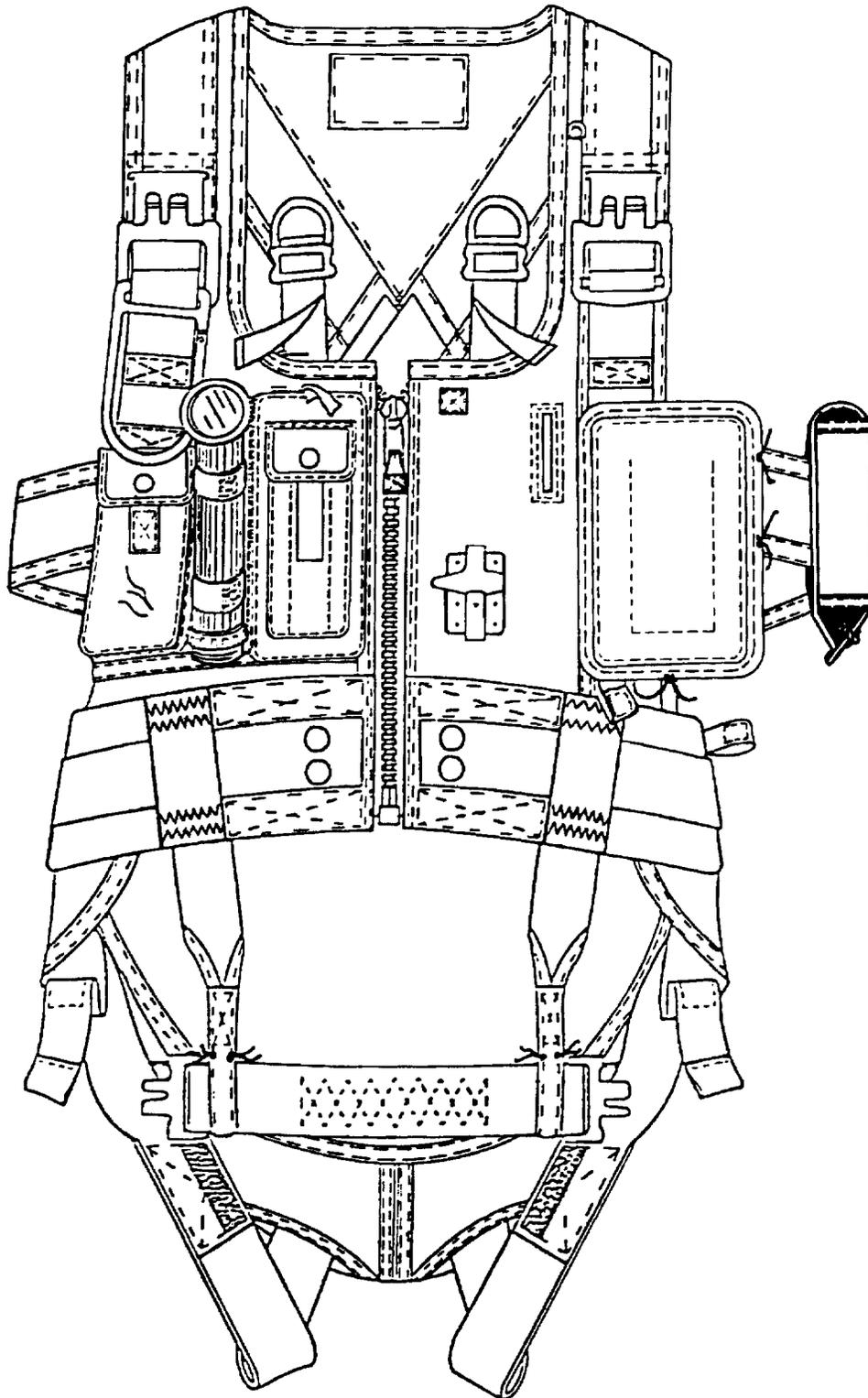


Figure 5. PCU-39/P, 829AS100-37 Parachute Restraint Harness Assembly  
(With Stowage Pockets, Equipment, LPU, OBOGS)



**Figure 6. PCU-50/P, 829AS100-26 Parachute Restraint Harness Assembly  
(With Storage Pockets, Equipment, LPU and Diluter Regulator)**

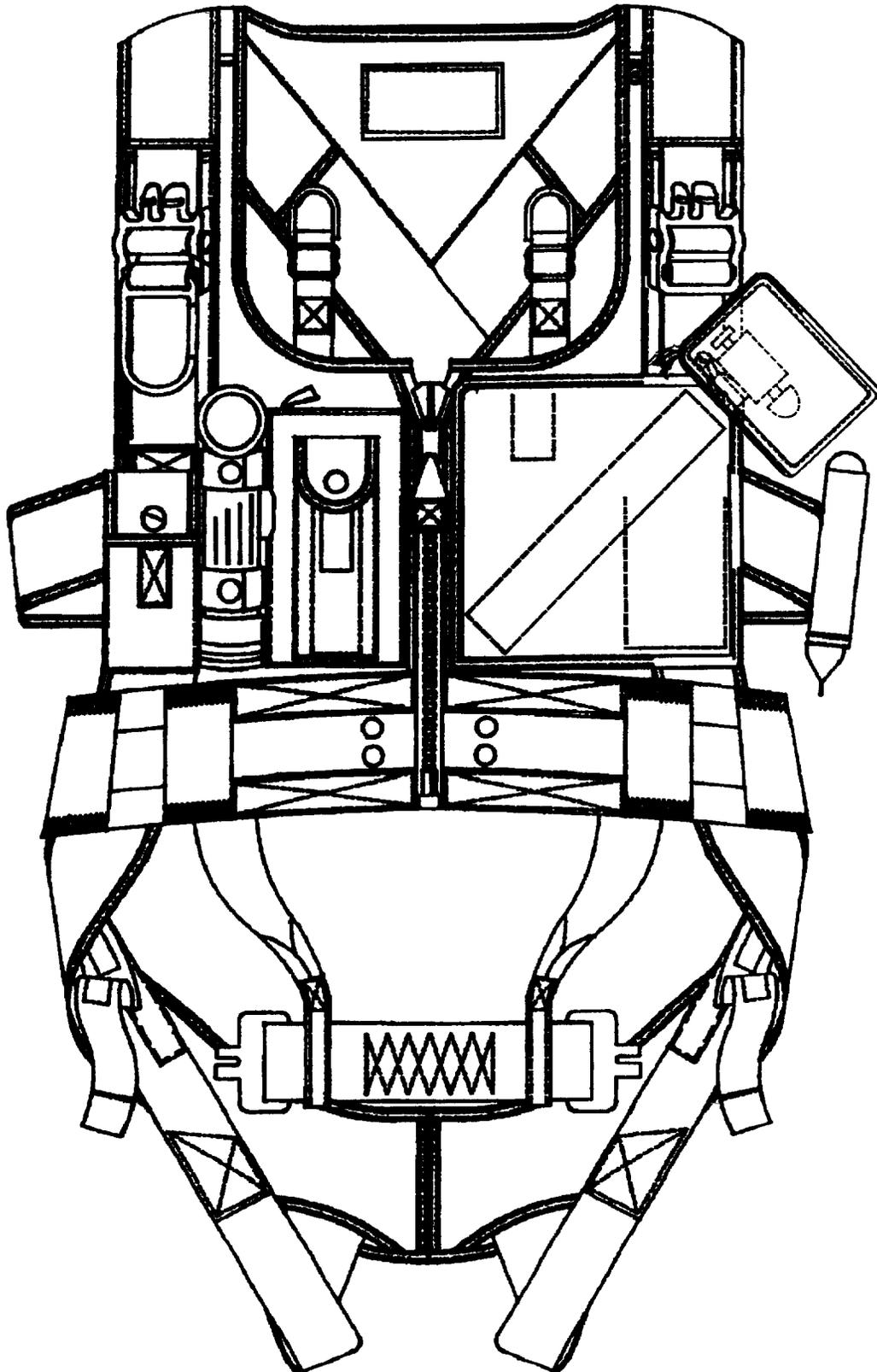
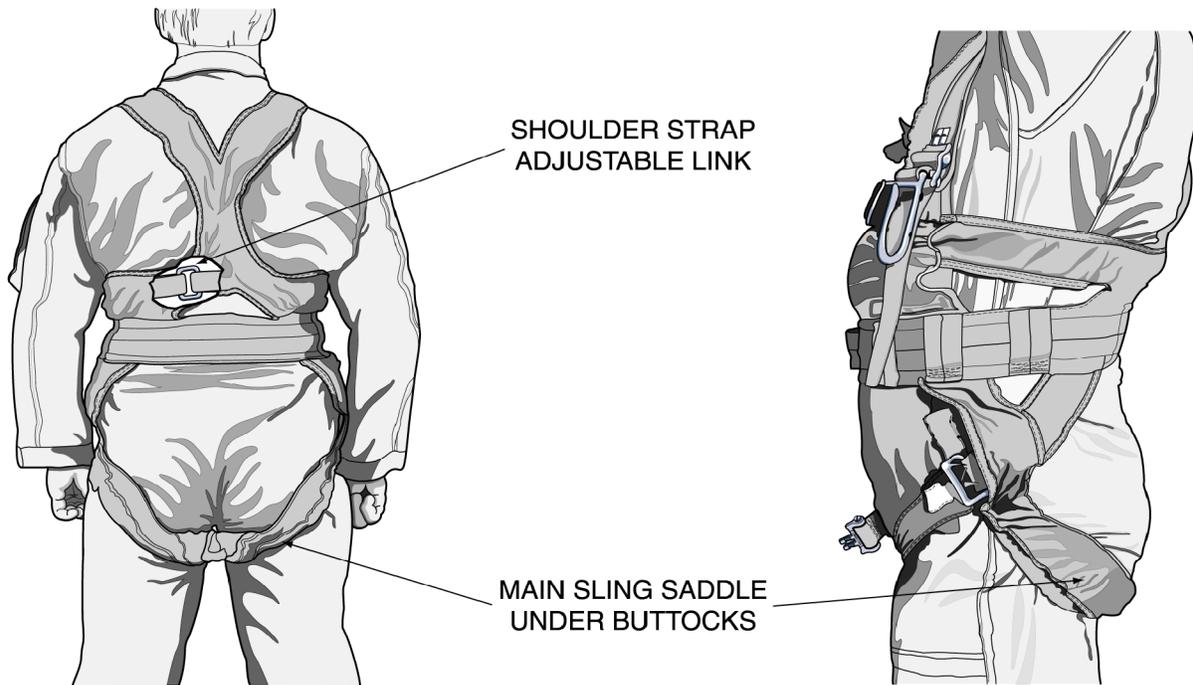
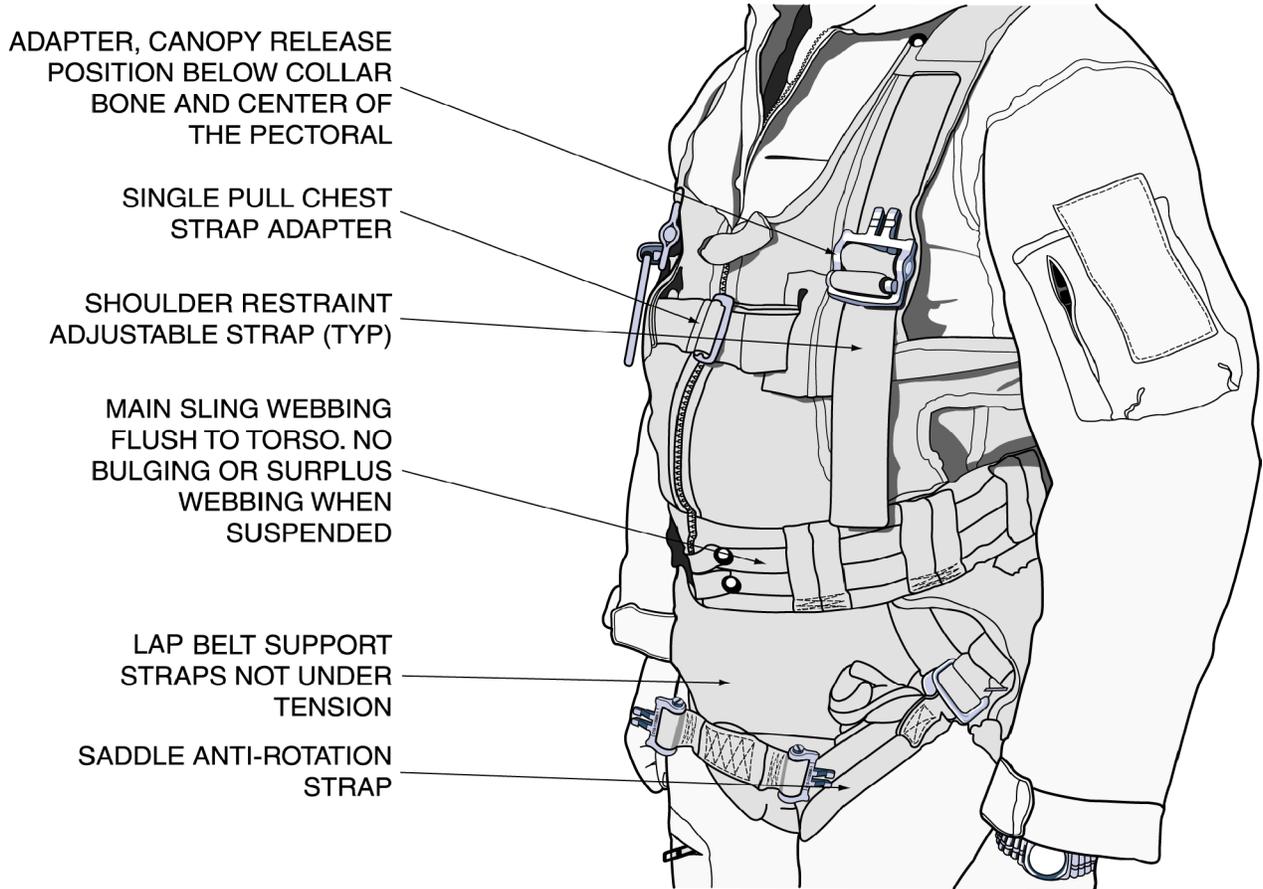


Figure 7. PCU-55/P, 829AS100-28 Parachute Restraint Harness Assembly  
(With Helicopter Emergency Egress Device (HEED) Pocket)



**Figure 8. PCU-33/P Restraint Harness Sizing and Fitting**

(a) Canopy Release Adapter. The ideal location of the adapter is in the cavity/hollow below the collarbone when the harness is properly fitted/adjusted and the aircrew is standing or sitting. The adapter may be adjusted lower to accomplish proper seat restraint. However, ideal location of each individual may vary from beneath the collar bone to the full down position, depending on individual body build.

(b) Main Sling Webbing. The main sling webbing is that portion of the main sling located between the rear leg strap and the chest strap. The main sling webbing should be as close as possible to the torso under suspended condition with no bulging or surplus webbing evident.

(c) Chest Strap. The chest strap should cross the torso at breast level when the aircrew is standing and should not be below the "center of mass" of the breast of the female aircrew. However, "best restraint" should be the deciding factor, such that (positive tension is achieved from the inertial reel) when retracted. The reversible adapter shall be about centered on the chest. If the adapter is off center to the right after final adjustment of the chest strap, the adapter may be relocated. Hook and pile tape must also be added to the chest strap after final fit.

(d) Shoulder Strap Adjustment Link. Inspect the adjustment links and ensure that they are positioned at the same height and are equally spaced from the center of the back.

(e) Lap Belt Support Straps. One end of each strap is attached to the main sling webbing inside the harness near the chest strap channels. The other end of each strap has a loop. The respective ends of the lap belt go thru the respective loops and the loops are tacked 1/8-in. above the lap belt in four places. The purpose of the support straps is to carry the opening shock loads of the survival kit.

(f) Main Sling Saddle. The main sling saddle is that portion of the main sling, located below the leg strap channels, which goes under the buttocks (preferable below the gluteal fold). The main sling saddle supports the weight of the body and absorbs the opening shock loads.

(g) Saddle Anti-Rotation Straps. The saddle anti-rotation straps are adjustable straps, one on each leg strap, just below the attachment point of the lap belt strap. Two sleeve subassemblies with reversible adapters are located above the point where each leg strap passes through the lower channel of the main sling. The adjustable straps are routed through their respective reversible adapters to provide a tightening

adjustment, with the free end of each strap being retained by hook and pile fasteners. The hook and pile fasteners are attached to the saddle anti-rotation straps per WP 008 03. The saddle anti-rotation straps reduce harness misalignment and improve the harnesses overall fit on the aircrew. During parachute development, the main sling of the harness will remain vertical to the upper torso of the aircrew, allowing the main sling saddle to remain under the buttocks. Parachute canopy opening shock loads will then be transmitted throughout the saddle and main sling with little or no upper torso rotation or shift. Also the canopy release fittings will remain lower, reducing the likelihood of striking the head. After the aircrew has donned and adjusted the harness in a standing position, the straps are pulled snug, not tight. The hook and pile fasteners are mated together while in this position. Do not retighten when seated.

(2) The next assessment of a properly fitted harness is determine that optimum seat restraint is afforded. The following is required:

(a) Lap Belt. With aircrew seated in an ejection seat, lap belt fittings shall be connected and lap belt adjusted until snug. There shall be no slack in lap belt.

(b) Shoulder Harness. The canopy release shall be connected. With aircrew seated shoulders back in the ejection seat and shoulder harness retracted, there should be no slack in the shoulder harness restraint. If slack exists, adjust harness canopy release adapters in a downward direction until slack is removed. If adapters have been adjusted to the full down position and there is still slack in the shoulder harness, the aircrew may have an improperly sized harness or may need a custom harness. If proper retention cannot be achieved, reevaluation of the aircrew's anthropometric compatibility with assigned aircraft maybe necessary.

#### **NOTE**

Personnel whose harnesses do not meet the above fit criteria should be further evaluated in PCU-33/P parachute restraint harnesses of other sizes until a best fit is achieved. Aircrew unable to be fitted with a stock harness may be considered candidates for a custom-fit harness.

(3) The final assessment of a properly fitted harness is made with the aircrew suspended so the harness bears the full weight of the aircrew. Two riser assemblies with 16-in. cross-connector straps and canopy release assemblies are required to suspend the aircrew. The aircrew should wear his/her own flight helmet, don and properly adjust the harness including snugging the cinch straps in the same manner as when preparing for a flight.

(a) Attach the harness to the riser assemblies. Prior to suspending the aircrew, observe the location of the canopy release assemblies.

(b) Suspend the aircrew above the deck and simulate mild opening shock by having the aircrew pull him/herself up by the risers to about 12 to 15-in. dropping back into the harness to induce settling while observing the change (rise) in location of the canopy release assemblies. If the harness is properly sized, fitted and adjusted, with full body weight of the aircrew supported by the main sling saddle, the change (rise) of the canopy release assemblies will be minimal and equal on both sides. Final position of canopy release should not be higher than the aircrew's jaw bone nor indicate a loose fit of the harness. A major change (rise) may indicate that the body weight is not supported by the main sling saddle, the harness is not the proper size, or the harness has been improperly adjusted.

(c) Inspect the chest strap, main sling webbing, shoulder strap adjustment links and main sling saddle for proper position. Closely observe the aircrew's weight distribution in the harness. When properly positioned the main sling saddle supports the body weight much like sitting in a swing. Weight stress is carried from the main sling saddle up thru the main sling webbing to the canopy releases and riser assemblies. When the harness fit is best, there will be minimal tension on the lap belt support straps or cinch straps. Observe that the aircrew's body has not shifted out of the main sling saddle, allowing the body weight to be supported by the leg, shoulder, chest, cinch, or support straps.

#### **7. CUSTOM-FIT (CF) PROCUREMENT PROCEDURES FOR AIRCREW.**

a. The local Aviation Physiologist or Aviation Medical Safety Officer, with aid of a locally assigned Aircrew Survival Equipmentman, will verify need for each custom-fit harness candidate. If these personnel are not on board, direct liaison with Naval Air Warfare Center Weapons Division (NAVAIRWARCENWPNDIV) is authorized.

b. Complete the custom-fit PCU-33/P Harness Data Sheet (Figure 9). Ensure that the data sheet is exactly completed and that all entries are legible. Any unacceptable ratings in Paragraph 6 shall be elaborated on in the comments section. Send a copy of the data sheet to:

Commander  
Code 461000D  
NAVAIRWARCENWPNDIV  
1900 N Knox Road Stop 6206  
China Lake, CA 93555-6106

#### **NOTE**

The Custom-Fit PCU-33/P Harness Data Sheet (Figure 9) may be locally reproduced.

c. Send a naval message to NAVAIRWARCENWPNDIV China Lake, CA. //461000D// Info: COMNAVAIR-SYSCOM Patuxent River, MD.//PMA202// Give the candidates Name, Rank/Rate, Social Security Number and Branch of Service. State the candidate has been verified as a custom fit harness candidate by Aviation Survival Training Center (ASTC) or Aviation Medical Safety Officer (AMSO). Provide a point of contact to arrange the custom fit scheduling.

d. Send Custom Fit PCU-33/P Harness Data Sheet and photographs depicting unacceptable abnormalities to NAVAIRWARCENWPNDIV. This should be done well in advance of candidates arrival.

e. Following receipt of the data sheet, date record (NAVMED 6410/9) and data verification message, the individual or the point of contact will be notified by NAVAIRWARCENWPNDIV and scheduled for PCU-33/P custom-fitting.

f. The individual's command will be responsible for providing travel orders to NAVAIRWARCENWPNDIV for custom-fitting. Five working days at NAVAIRWARCENWPNDIV will be required to complete the harness. As transportation is limited, a commercial rental car should be authorized.

#### **8. AIRCREW SYSTEM RECORDS.**

a. Refer to OPNAVINST 4790.2 (series) for filling out of the Aircrew Personal Equipment Record (OPNAV 4790/159) and Aircrew Systems Record (OPNAV 4790/138).

#### **9. ORDERING AND REPORTING INFORMATION.**

a. When ordering a new integrated parachute harness, order part number 829AS142-XXX (By Size). The harness is then configured for the specific aircraft/mission and reported into the 3M system as 829AS100-XX in the removed and installed blocks of the VIDS/MAF. The top assembly configuration part number (829AS100-XX) shall be reported when inspection/maintenance is performed throughout the service life of the harness.

CUSTOM-FIT PCU-33/P PARACHUTE RESTRAINT HARNESS DATA SHEET

NAME \_\_\_\_\_ SSN \_\_\_\_\_ DATE \_\_\_\_\_

GRADE/RATE \_\_\_\_\_ COMMAND \_\_\_\_\_ SEX \_\_\_\_\_

AVIATION STATUS \_\_\_\_\_ (Aviator, NFO, Enlisted Aircrew, Civilian, Parachutist, Flight Surgeon, Aviation Physiologist/Psychologist)

1. HEIGHT \_\_\_\_\_ INCHES

2. WEIGHT \_\_\_\_\_ POUNDS

3. PCU-33/P HARNESS EVALUATION

Comments

MAIN SLING WEBBING (acceptable/unacceptable) \_\_\_\_\_

MAIN SLING SADDLE (acceptable/unacceptable) \_\_\_\_\_

LAP RESTRAINT (acceptable/unacceptable) \_\_\_\_\_

SHOULDER RESTRAINT (acceptable/unacceptable) \_\_\_\_\_

CHEST STRAP (acceptable/unacceptable) \_\_\_\_\_

SIGNATURES \_\_\_\_\_  
ASTC/AMSO \_\_\_\_\_ PR \_\_\_\_\_

Information contact

Address to: Commander  
Code 461000D  
NAVAIRWARCENWPNDIV  
1900 N Knox Road Stop 6206  
China Lake, CA 93555-6106

Print or type names \_\_\_\_\_  
ASTC/AMSO \_\_\_\_\_ PR \_\_\_\_\_

DSN number \_\_\_\_\_  
ASTC/AMSO \_\_\_\_\_ PR \_\_\_\_\_

and EXTENSION \_\_\_\_\_  
ASTC/AMSO \_\_\_\_\_ PR \_\_\_\_\_

COMMENTS: \_\_\_\_\_

Figure 9. Custom-Fit PCU-33/P Harness Data Sheet

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**ORGANIZATIONAL MAINTENANCE**

**INSPECTION AND REPAIR PROCEDURES**

**PCU-33/P SERIES PARACHUTE RESTRAINT HARNESS ASSEMBLY**

**PART NO. 829AS100**

**List of Effective Work Package Pages**

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Aircrew Personal Protective Equipment (A/P22P-18(V))	NAVAIR 13-1-6.7-4
Introduction	WP 002 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 623	14 Feb 96	Riser Restraint Keeper (RAMEC P-08-95)	1 Jul 96	31 Dec 2003

**1. INTRODUCTION.**

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

3. When performing repairs detailed in this WP, do per 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 it's source for immediate use only. Ensure that material identification ticket remains with the source material at all times.

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

**4. HOOK AND PILE FASTENER TAPE ON CHEST STRAP REPLACEMENT.**

Materials Required

Specification or Part Number	Nomenclature
MIL-F-21840	Fastener Tape, Hook, 1 1/2-in. Wide, Type II, Class 1
MIL-F-21840	Fastener Tape, Pile, 1 1/2-in. Wide, Class 1
V-T-295	Thread, Nylon, Size E, Type I or II, Class A

a. Properly fit harness to aircrew.

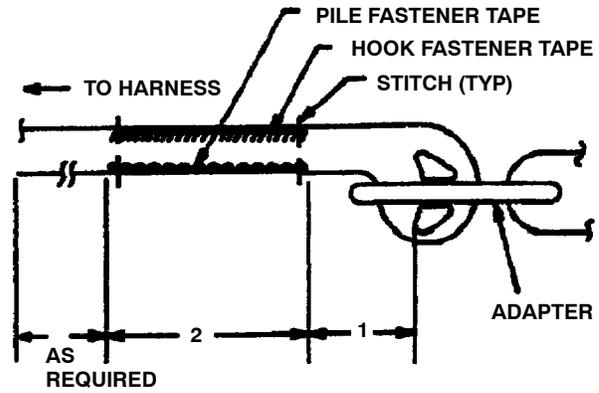
b. Mark chest strap webbing 1-in. from friction bar on both the free end and portion attached to harness (Figure 1).

**NOTE**

Placement of the hook and pile fastener tape may be reversed (aircrew option).

c. Attach a 2-in. strip of hook fastener tape on outer surface of chest strap and a 2-in. strip of pile fastener tape on inner surface of free end. Machine stitch around edges of hook and pile fastener tape. Backstitch a minimum of 1/2-in. Leave a minimum of 10-in. of

webbing from chest strap friction bar after fitting to aircrew. Trim and sear. Avoid forming sharp edges while hot knifing and searing (Figure 1). (QA)



6.2-5563

**Figure 1. Addition of Hook and Pile Fastener Tape to Chest Strap**

d. When donning, aircrew shall align hook and pile tape patches and press together firmly.

**5. CANOPY RELEASE ADAPTER REPLACEMENT.**

Materials Required

Specification or Part Number	Nomenclature
990065-1 -or- 015-710001-1	Adjuster Assembly, Strap
F-900 Torque Seal (Color Optional)	Sealing Compound
122-10935-3	Setscrew

**NOTE**

Setscrew is a one time use only part.

a. Remove setscrew and retention pin. Discard setscrew.

b. Remove adapter from harness main sling webbing.

c. Turn friction slide bar at an angle within the frame to allow removal from adapter. Crowding of adjustment strap webbing to one side is necessary to allow enough clearance for friction slide bar to be removed.

d. Remove adapter from adjustment strap. Gated D-Ring will weave thru adapter without difficulty. Removal of stitched end boxstitch is not necessary unless gated D-Ring is also being replaced.

**WARNING**

Harness webbing must be properly routed thru canopy release adapter (Figure 2).

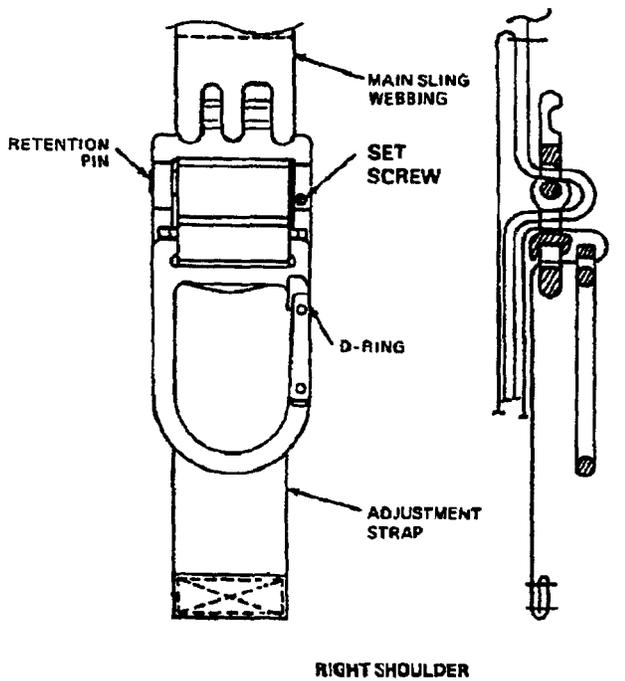


Figure 2. Replacement of Canopy Release Adapter

e. With retention pin and friction slide bar removed, place new canopy release adapter on harness with notch facing outward.

f. Form a loop in adjustment strap and place loop thru adapter from back to front.

**WARNING**

Insure friction slide bar is correctly reinstalled; word stamped FRONT will face outboard (same direction as notches).

g. Place friction slide bar thru loop of adjustment strap (word FRONT forward) and turn to an angle to allow reinsertion into adapter.

h. Form loop in main sling harness webbing, using two forward layers. Place loops thru adapter above adjustment strap loop (Figure 2).

i. Install retention pin and new setscrew.

j. Apply torque seal to screwhead. (QA)

**6. LAPBELT QUICK RELEASE ADAPTER REPLACEMENT.**

Support Equipment Required

Part Number	Nomenclature
990070-1	Adapter Assembly, Lapbelt
-or-	
1979AS838-1	
-or-	
015-11366-1	

Materials Required

Specification or Part Number	Nomenclature
MIL-S-22473	Sealing Compound, Grade H

**CAUTION**

Do not pinch webbing with tools when removing or installing lap belt adapters.

a. Remove two securing screws.

b. Remove adapter from lapbelt.

c. Slide pin from lapbelt webbing loop.

d. Install replacement slide pin in webbing loop of lapbelt.

e. Align replacement adapter, with notched side of prongs inboard toward wearer, on slide pin.

f. Apply sealing compound to threads of two shoulder screws. Install screws thru holes in release adapter.

g. Thread securing screws into slide pin.

h. Tighten securing screws.

**7. SNAP FASTENER ON FLOTATION ATTACHMENT PANEL REPLACEMENT.**

Materials Required

Specification or Part Number	Nomenclature
PIA-T-5038	Tape, Textile Reinforcing Nylon, Type IV, 1-in., Sage Green, Class 1 or 1A
V-T-295	Thread, Nylon, Size E, Type I or II, Class A
MS27983-1	Snap, Fastener, Button
MS27983-2N	Socket, Snap Fastener
MS27983-3	Stud, Snap Fastener
MS27983-4	Snap, Fastener, Eyelet

a. Remove snap fastener, using care not to damage webbing.

b. If any attachment point is damaged, sew a piece of reinforcement tape over damaged area using a box-X stitch pattern. Backstitch 1/2-in.

c. Punch new hole, if required; mate button and socket or stud and eyelet together, as required. Orient button dots closest to the securing belt free ends.

d. Install new fastener. Ensure that fastener is securely mated and that release direction is toward slide fastener.

**8. INBOARD OXYGEN MASK STORAGE BAG ATTACHMENT SNAP FASTENER PLACEMENT (AIRCREW OPTION).**

Materials Required

Specification or Part Number	Nomenclature
MS27980-7B	Stud, Snap Fastener
MS27980-8B	Snap, Fastener, Eyelet
PIA-T-5038	Tape, Textile, Reinforcing Nylon, Type IV, 1-in., Sage Green, Class 1 or 1A

a. Remove old fastener, using care not to damage garment.

b. If attachment point is damaged, sew a piece of reinforcement tape to underside of damaged area, using a box-X stitch pattern. Backstitch 1/2-in.

c. Punch new hole, if required. Mate eyelet, tape, and stud.

d. Install new fastener. Ensure that fastener is securely mated.

**9. OUTBOARD OXYGEN MASK STORAGE BAG ATTACHMENT SNAP FASTENER PLACEMENT (AIRCREW OPTION).**

Materials Required

Specification or Part Number	Nomenclature
MS27980-7B	Stud, Snap Fastener
MS27980-8B	Snap, Fastener, Eyelet
PIA-T-5038	Tape, Textile Reinforcing Nylon, Type IV, 1-in., Class 1 or 1 A

a. Punch a 3/32-in. new hole, 1/2-in. plus or minus 1/8-in., from outboard edge of garment material, above top stitching of webbing channel and 5/8-in. plus or minus 1/8-in. from edge of harness binding tape.

b. Install new snap fastener. Ensure that snap fastener is securely mated.

c. Carefully remove inboard located snap fastener in accordance with Paragraph 8.

**10. EYELET AND HOOK REPLACEMENT.**

Support Equipment Required

Part Number	Nomenclature
GGG-S-00278	Shears, Straight
—	Needle, Sewing

Materials Required

Specification or Part Number	Nomenclature
60A113C28-1	Eye
60A113C28-2	Hook
V-T-295	Thread, Nylon, Size 3, Type I or II, Class A
V-T-295	Thread, Nylon, Size E, Type I or II, Class A

**NOTE**

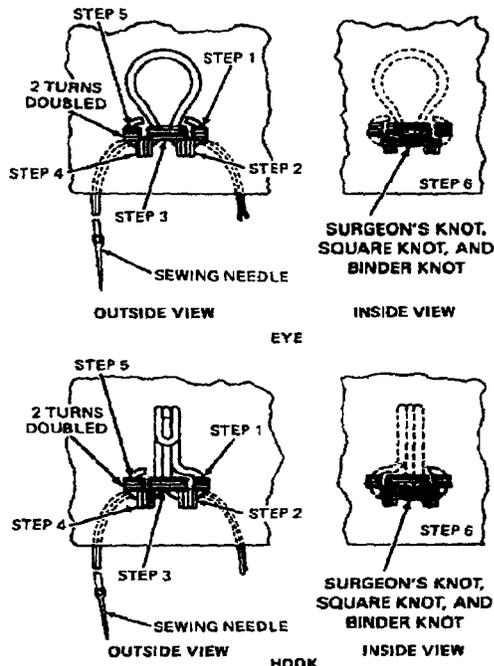
Tie off all tackings with a surgeon's knot topped with a square knot, followed with a binder knot per WP 002 00. Trim off excess leaving 1/2-in.

Hook and eye may be reversed for left hand installation. Removal of hook and eye is at aircrew's discretion.

**NOTE**

Optional to machine stitch with size E thread, using nine single stitches per grouping in lieu of two turns doubled.

- a. Carefully remove damaged eyelet and hook.
- b. Attach new eyelet or hook as required in same location as removed eyelet or hook. Sew in place with thread, waxed and doubled; tie off. (Figure 3).



6.2-5591

Figure 3. Replacement of Eyelet and Hook

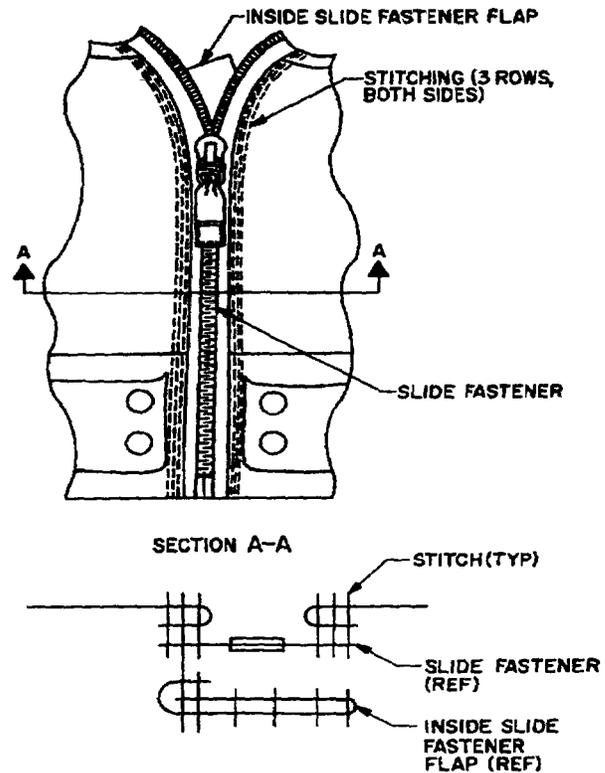
- c. Ensure that eyelet or hook is properly aligned.

**11. SLIDE FASTENER REPLACEMENT.**

Materials Required

Specification or Part Number	Nomenclature
V-F-106	Slide Fastener, Type IV, Style #8, Size MH, Brass with Black Chemical Finish, Sage Green Tape Available from: Lenzip Manufacturing 1900 W. Kinzie St. Chicago, IL 60622-6243 Style #1031
V-T-295	Thread, Nylon, Size E, Type I or II, Class A

- a. Remove entrance slide fastener.
- b. Remove two hooks and eyelets at entrance.
- c. Remove damaged slide fastener and protective flap to at least 1-in. below retention system. Retain protective flap for reuse.
- d. Attach replacement slide fastener as shown using size E thread. Slide fastener shall not run over edges of fabric panels (Figure 4).



6.2-5592

Figure 4. Replacement of Slide Fastener

**12. SLIDER PULL THONG REPLACEMENT.**

Materials Required

Specification or Part Number	Nomenclature
PIA-T-5038	Tape, Nylon, Type III, Class 1 or 1A, 3/4-in. Wide
V-T-295	Thread, Nylon, Size E, Type I or II, Class A

- a. Remove and discard worn pull thong.
- b. Cut a 4 3/4-in. length of nylon tape. Sear both ends.

c. Weave new pull thong thru eye in slider pull tab. Place sides together with ends even and stitch together at end using a 3/4-in. long box stitch pattern. (QA)

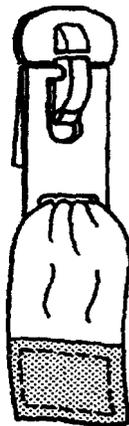
d. Add fastener tape per Paragraph 13.

**13. PILE FASTENER TAPE ON HARNESS PULL THONG REPLACEMENT.**

Materials Required

Specification or Part Number	Nomenclature
MIL-F-21840	Fastener Tape, Pile, Class 1
V-T-295	Thread, Nylon, Size E, Type I or II, Class A

a. Sew a 3/4-in. length of pile fastener tape to nylon tape using a 3/4-in. long box stitch (Figure 5).



6.2-5593

Figure 5. Replacement of Slider Pull Thong

**14. SLIDER PULL THONG ON SURVIVAL EQUIPMENT POCKETS REPLACEMENT.**

Materials Required

Specification or Part Number	Nomenclature
PIA-T-5038	Tape, Nylon, Type III, Class 1 or 1A 3/4-in. Wide
V-T-295	Thread, Nylon, Size E, Type I or II, Class A

a. Cut a 4-in. length of nylon tape. Sear ends to be cut on a 45-degree bias to tape selvage edge. Remove and discard worn pull thong.

b. Insert new pull thong thru eye in slider pull tab. Place sides together with ends even and secure in place with 2 to 3 rows of 1/2-in. stitch pattern using size E thread.

**15. HOOK FASTENER TAPE ON LEFT SIDE OF HARNESS FOR SECURING PULL THONG REPLACEMENT.**

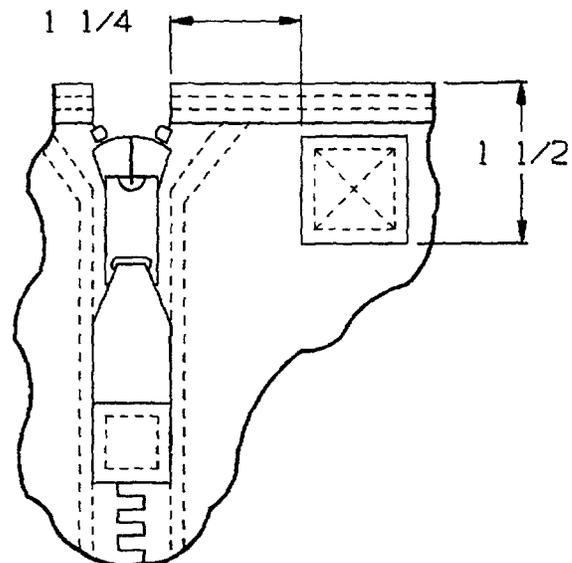
Materials Required

Specification or Part Number	Nomenclature
MIL-F-21840	Fastener Tape, Hook, Type II, Class 1
V-T-295	Thread, Nylon, Size E, Type I or II, Class A

a. Remove old hook tape carefully.

b. Cut a 1x1-in. piece of hook fastener tape. Sew hook fastener tape on left side of harness 1 1/2-in. from edge of harness zipper and bottom portion of hook fastener tape from top edge of harness material.

c. Sew hook fastener tape with size E thread in a box-X stitch pattern (Figure 6).



6.2-7081

Figure 6. Hook Tape Replacement on Harness

**16. REPAIR OF HARNESS CLOTH.**

Materials Required

Specification or Part Number	Nomenclature
MIL-C-508	Cloth, Oxford, Nylon, Sage Green
V-T-295	Thread, Nylon, Size E, Type I or II, Class A

**WARNING**

Do not stitch thru harness webbing.

- a. Cut a patch sufficiently large to cover damage and overlap 1-in. on all sides.
- b. Sear edges of patch and damaged area.
- c. Fold patch under 1/4-in. on all sides and stitch in place, using size E thread, 1/8-in. from fold in patch. Backstitch 1/2-in. minimum.
- d. Turn suit inside out and stitch 1/8-in. from edge of damage. Backstitch 1/2-in. minimum.

**17. TACKING FOR LAPBELT SUPPORT STRAPS REPLACEMENT.**

Material Required

Specification or Part Number	Nomenclature
A-A-52080-B-2	Tape, Lacing and Tying Finish B, Size 2, Type I, Black
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 damaged tacking from lapbelt support strap.
- b. Hand tack support strap loop together with one turn size 6 thread or lacing tape, doubled and waxed. Tack

webbing as snug as possible to lapbelt to prevent movement, do not tack thru lapbelt. Tie off. Trim end to 1/2-in. (Figure 7).

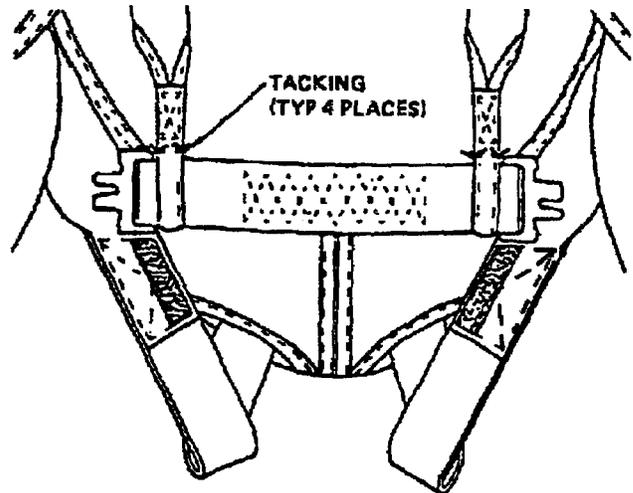


Figure 7. Lapbelt Support Strap Tacking 6.2-5594

**18. SADDLE ANTI-ROTATION STRAP HOOK AND PILE FASTENER REPLACEMENT.**

Materials Required

Specification or Part Number	Nomenclature
MIL-F-21840	Fastener Tape, Hook, 1-in. Wide, Type II, Class 1
MIL-F-21840	Fastener Tape, Pile, 1-in. Wide, Class 1
V-T-295	Thread, Nylon, Size E, Type I or II, Class A

- a. Mark existing placement of tape, before removing old tape from upper adjustment strap. Carefully remove old fastener tape from cinch strap.
- b. Cut a 4-in. length of hook and pile fastener tape.
- c. Lay hook fastener tape lengthwise over inside portion of 4-in. trapezoidal box-X stitch pattern.
- d. Sew hook fastener tape over inside portion of trapezoidal box-X stitch pattern. Cut top narrow end of hook fastener tape to match angled end of each trapezoidal box-X stitch.
- e. Sew pile fastener tape within stitch pattern marks.

**19. MOUNTING BRACKET REPLACEMENT FOR ON BOARD OXYGEN GENERATING SYSTEM (OBOGS).**

Materials Required

Specification or Part Number	Nomenclature
829AS165-2	Kit Bracket Assembly, Oxygen Regulator
829AS159-2	Bracket Assembly Oxygen Regulator (Component of 829AS165-2)
829AS163-1	Oxygen Regulator Mounting Plate (Component of 829AS165-2)
MS20427F4-9	Rivet, Solid
829AS152-13	Oxygen Regulator and Hose Retention Pocket
MMM-A-121	Adhesive
MS27983-1	Snap, Fastener, Button
MS27983-2N	Socket, Snap Fastener
MIL-F-21840	Fastener Tape, Hook, 2-in. Wide, Type II, Class 1
V-T-295	Thread, Nylon, Size E, Type I or II, Class A
PIA-W-4088	Webbing, Nylon, Type IX, Class 1, 1A or 2

a. If require, remove the OBOGS bracket assembly from the harness assembly.



Avoid damaging harness material when removing the rivets.

b. Hot knife one piece of webbing 7-in. long, and sear both ends. Avoid forming sharp edges while hot knifing and searing.

c. Fold both ends, top and bottom, about 1/2-in. and stitch 1/4-in. from folded edges. Backstitch 1/2-in. using size E thread (Figure 8).

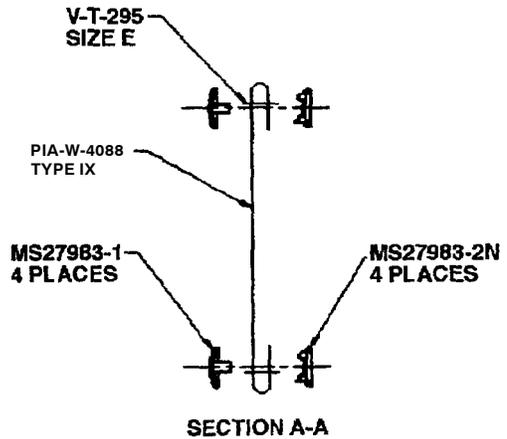


Figure 8. Fold Both Ends

6.2-5512

d. Position the OBOGS bracket centered lengthwise on one side of the 7-in. piece of webbing and the mounting plate on the back side (Figure 9).

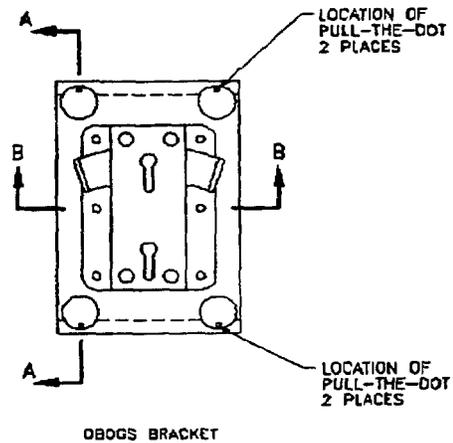


Figure 9. OBOGS Bracket

6.2-5512C

e. Rivet the bracket, webbing and plate together (Figure 10).

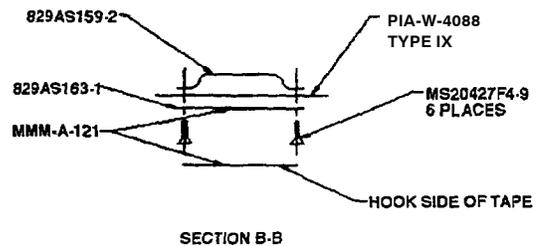


Figure 10. Rivet Bracket, Webbing, and Plate Together

6.2-5512A

f. Use template to center the four snap fasteners location (Figure 11).

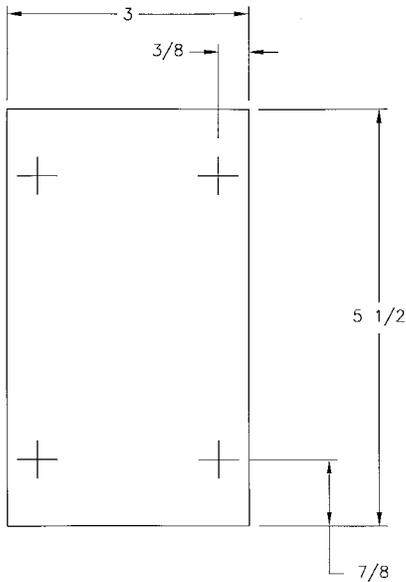


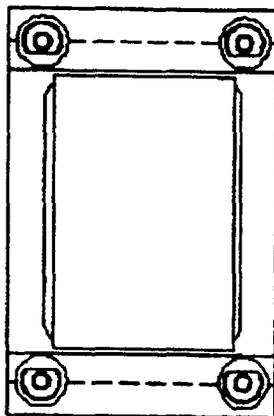
Figure 11. Template

6.2-5512D

**NOTE**

The pull-the-dots on the buttons shall be located per Figure 9.

g. Cut a 3-in. length of 2-in. wide hook fastener tape. Apply a thin layer of MMM-A-121 adhesive to the back side of the hook fastener tape and the mounting plate, between the six rivets. After applying the adhesive, allow it to become tacky. Center the 2-in. width of the hook fastener tape to the 2 1/4-in. width of the mounting (back) plate (Figure 12).



BACK VIEW

Figure 12. Back View

6.2-5512B

h. Make proper entries on Aircrew Personal Equipment Record (OPNAV 4790/159). (QA)

**20. REMOVABLE MINI REGULATOR REPLACEMENT.**

Materials Required

Specification or Part Number	Nomenclature
829AS165-2	Kit Bracket Assembly, Oxygen Regulator
829AS159-2	Bracket Assembly Oxygen Regulator (Component of 829AS165-2)
829AS163-1	Oxygen Regulator Mounting Plate (Component of 829AS165-2)
MS20427F4-9	Rivet, Solid
829AS152-13	Oxygen Regulator and Hose Retention Pocket
MMM-A-121	Adhesive
MS27983-1	Snap, Fastener, Button
MS27983-2N	Socket, Snap Fastener
MIL-F-21840	Fastener Tape, Hook, 2-in. Wide, Type II, Class 1
V-T-295	Thread, Nylon, Size E, Type I or II, Class A
PIA-W-4088	Webbing, Nylon, Type IX, Class 1, 1A or 2

a. Remove the buttons and sockets from the mini regulator pocket. Avoid damage to the pocket.

b. Remove the hook fastener tape from the mini regulator pocket. Avoid damage to the pocket.

c. Cut a 4 1/2-in. length of 2-in. wide hook fastener tape and position lengthwise on one side of the webbing. Stitch the hook fastener tape to the webbing, using a box-X stitch, 1/8-in. from edge, using size E thread.

d. Hot knife one piece of webbing 4 1/2-in. sear both ends. Avoid forming sharp edges.

e. Use template to center the four snap fasteners and install snap fasteners (Figure 11).

**NOTE**

The pull-the-dots on the buttons shall be located per Figure 9.

f. Position the webbing, centered vertically on the outer back side of the mini regulator pocket, stitch webbing to the pocket, using about 1 1/4 x 4 1/4-in. box-X stitch, with size E thread (Figure 13).

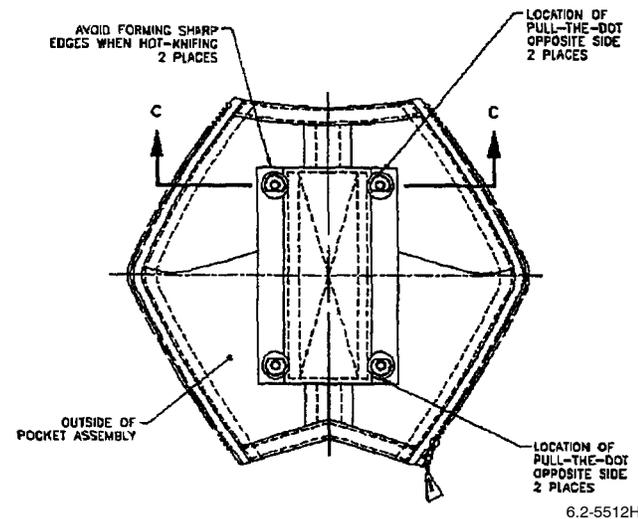
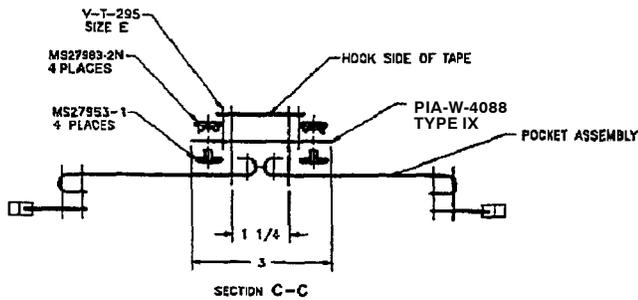


Figure 13. Positioning of Webbing

**21. REMOVEABLE OBOGS AND MINI REGULATOR PILE TAPE FASTENER ATTACHMENT.**

Materials Required

Specification or Part Number	Nomenclature
MS27983-3	Stud, Snap Fastener
MS27983-4	Snap, Fastener, Eyelet
MIL-F-21840	Fastener Tape, Pile 2-in. Wide, Type II, Class 1
PIA-W-4088	Webbing, Nylon Type IX, Class 1, 1A and 2

**NOTE**

Ensure the addition of backing, webbing material is accomplished prior to proceeding.

a. Cut 2 pieces of 2-in. wide pile tape fastener 4 1/2-in long. Overlap the two lengths until a 3-in. width is obtained and sew together, using size E thread, back stitch 1/2-in.

b. Position the pile tape fastener, vertically on the harness outside left chest panel. The specified vertical position shall be directed by the aircrew. Stitch pile tape fastener to the harness panel, using size E thread, sew 1/8-in. from edge, back stitch 1/2-in.

c. Use template to center the four snap fasteners location in Figure 11.

**NOTE**

When combined with the removable OBOGS bracket and the removable mini regulator, all four pull-the-dot snap fasteners must be fully engaged.

d. Make proper entries on Aircrew Personal Equipment Record (OPNAV 4790/159). (QA)

**22. FABRICATION OF GARMENT EXTENDER PANEL.**

Materials Required

Specification or Part Number	Nomenclature
MIL-F-21840	Fastener Tape, Hook, 2-in. Wide, Type II, Class 1
MIL-F-21840	Fastener Tape, Pile, 2-in. Wide, Type II, Class 1
PIA-T-5038	Tape, Binding 3/4-in. Wide, Type III, Class 1 or 1A
V-T-295	Thread, Nylon, Size E, Type I or II, Class A
V-F-106	Slide Fastener, Type IV, Style #8, Size MH, Brass with Black Chemical Finish, Sage Green Tape Available from: Lenzip Manufacturing 1900 W. Kinzie St. Chicago, IL 60622-6243 Style #1031
PIA-W-4088	Webbing, Nylon, Type IV, Class 1 or 1A  -or-
PIA-T-5038	Webbing, Nylon, Type VIII, Class 1 or 1A

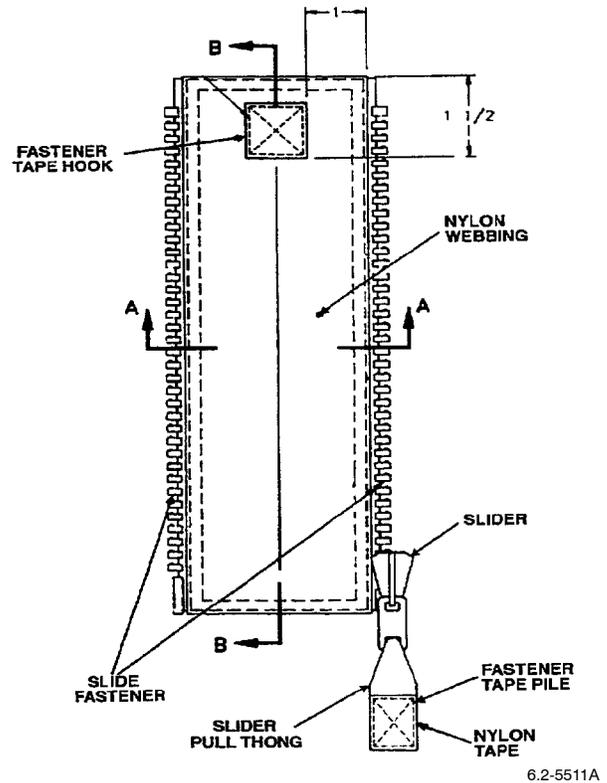


Figure 14. Center Zipper

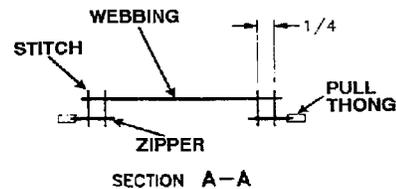


Figure 15. Stitch to Panel

a. Measure webbing and match the length of existing slide fastener (1 23/32-in. webbing or 3-in. webbing), and add 3/4-in. for 3/8-in. turn under at each end.

b. Existing slider may be placed as necessary (on right or left hand side) to match existing slide fastener.

c. Sear exposed ends of nylon webbing. Avoid forming sharp edges while hot knifing and searing.

d. Permissible to use 1 23/32-in. webbing in place of 3-in. webbing. To make the garment extender panel, 2 or 3 pieces of 1 23/32-in. webbing may be sewn together using E thread, two rows, back stitch 1/2-in.

e. Center zipper, full length of panel and stitch to panel (Figures 14, 15, and 16).

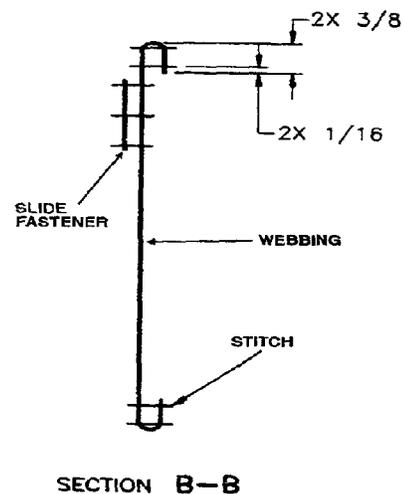


Figure 16. Alignment of Zipper

f. Cut a 7/8 x 7/8-in. piece of hook tape. Sew hook tape on panel 1-in. from edge of harness zipper and bottom edge of hook tape 1 1/2-in. from top of panel (Figure 14).

g. Sew hook tape with size E thread in a box-X stitch pattern (Figure 14).

h. Cut a 3/4 x 4 3/4-in. length nylon tape. Sear both ends.

i. Weave new pull thong thru eye in slider pull tab. Place sides together with ends even and stitch together at end using 3/4-in. long box-X stitch pattern including a 3/4-in. length of pile tape (Figure 15).

j. Install garment extender (Figure 17).

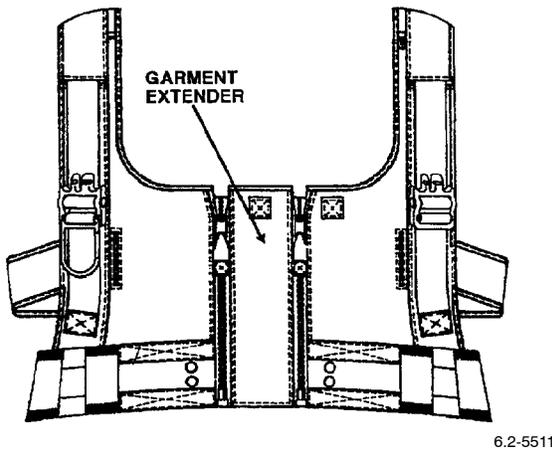


Figure 17. Garment Extender

**23. ATTACHMENT OF SURVIVAL ITEMS TO STOWAGE POCKETS.**

Material Required

Specification or Part Number	Nomenclature
MIL-C-5040	Cord, Nylon, Type I or IA
A-A-131	Rubber Band
MIL-C-23070	Cloth, Laminated
1791A10	Tape, Duct
A-A-1799	Bag, Plastic (2)
--	Aluminum, 0.090-in. thick ± 0.010-in., Any Grade

a. Attach survival items to stowage pockets (Figure 18).

**NOTE**

Fake securing lines along individual survival items (excluding bandolier cord) and secure with light weight rubber band.

b. To attach Smoke and Illumination Marine Signal, cut 80-in. length of nylon cord sear ends. Tie an overhand knot in one end. Wrap end of cord two turns around one end of signal flare and tie with surgeon's knot. Turns of cord shall overlap with all knots positioned snugly against each other. Route cord to opposite end signal flare and tie in same manner as above. Cord between ties shall be drawn tight. Secure free end cord to grommet in personnel distress signal kit pocket, with a bowline knot and an overhand knot on free end.

c. To attach MK-79 signal kit, cut a 12-in. length of nylon cord and sear ends. Tie an overhand knot in one end and then a bowline knot to hole provided in one end of bandolier and then tie other free end of nylon cord to grommet in personnel distress signal kit pocket with a bowline knot followed by an overhand knot. Cut a 48-in. length of nylon cord and sear ends. Tie an overhand knot in one end, then pass thru hole in bandolier and tie off with a bowline knot. Pass other end of nylon cord thru end of personnel distress signal kit's pen gun, tie an overhand knot in end, then tie a bowline knot.

d. Secure remaining survival items, by cutting a 48-in. length of nylon cord. Tie an overhand knot in one end, then a bowline knot to survival items and then secure to grommet in pockets with a bowline followed by an overhand knot. (QA)

e. Attach items in the HEED survival items pocket as in previous paragraphs except for the HEED bottle. Secure one end of bottle with a 24-in. length of Type I nylon cord using a surgeon's knot followed by a square knot and a bowline knot. Secure the other end to a snap hook using surgeon's knot followed by a square knot and a bowline knot. Then secure snap hook to the D-Ring on the outside of the HEED survival items pocket.

f. Cut a 48-in. length of MIL-C-5040, Type I, nylon cord with strands removed or MIL-C-5040, Type IA (Coreless), nylon cord and sear ends of cord.

g. Secure one end of the nylon cord to the radio/knife pocket grommet forming a 2-in. loop through the grommet and tie off using an overhand knot in one end, then tie a bowline knot.

h. Secure the other end of the nylon cord to the AN/PRC-112 series radio webbing of "V" ring using a 2-in. loop around webbing or "V" ring and tie off using an overhand knot in one end, then tie a bowline knot.

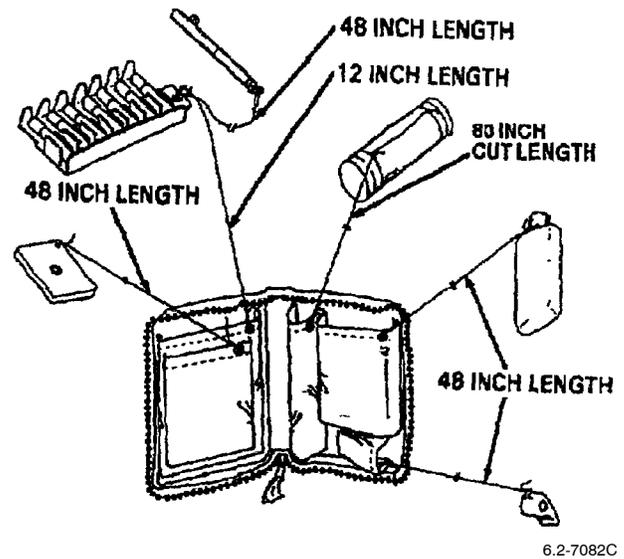
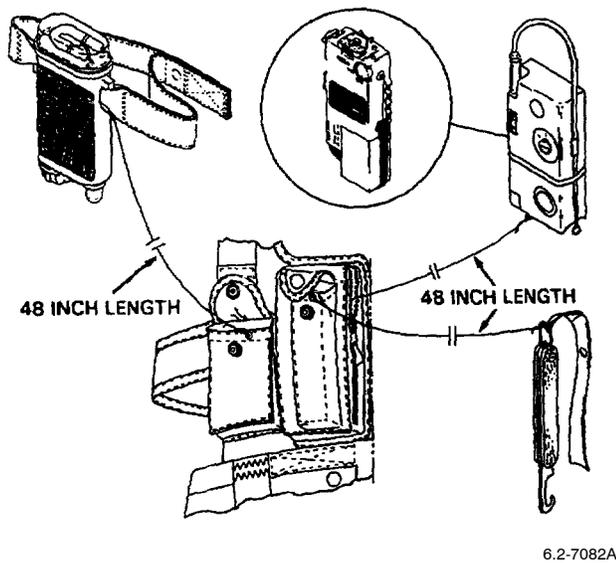


Figure 18. Attachment of Survival Items to Stowage Pockets

i. Place AN/PRC-112 series Radio in a 12-in. x 12-in. zip-lock plastic bag.

**NOTE**

For AN/PRC-112B, see Paragraph 24.

j. Remove as much trapped air as possible from the ziplock bag and tape over the closed ziplock closure using a 2-in. length of duct tape.

**NOTE**

The Type I or IA nylon cord can exit the bag at any location on the seal line. Location of the exit point is not critical.

A bagged radio with excessive trapped air will be difficult to stow into radio/knife pocket. If difficulty is encountered during stowage continue to press radio into pocket until sufficient air escapes to permit radio/knife pocket zipper closing.

k. Place the bagged radio into a second ziplock bag and seal closure using duct tape as in step j above.

l. Cut a 7 x 14-in. piece of laminated cloth and wrap around the bagged AN/PRC-112 series radio and secure with a rubber band.

m. Stow radio in radio/knife pocket. (QA)

n. Close zipper in radio/knife pocket. (QA)

**NOTE**

AN/PRC-112 series radios and batteries are currently undergoing rework/redesign to eliminate water leakage.

Bagging of the radio will not make it waterproof only water resistant.

Aircrew should not remove the radio from the ziplock bag until after they are in the raft.

**24. BACKING PLATE FOR AN/PRC-112B.**

a. Cut a 1-in. x 2 3/8-in. +1/8-in. -0-in. plate from a sheet of any grade aluminum 0.090-in. thick ±0.010 in.

b. Radius the corners and deburr all edges.

c. Cut 2 lengths, both 2 3/8-in. x 3/4-in. of duct tape, and center lengthwise along the outboard edge of the 2 3/8-in. side of the plate, 1 on each side of the 2 3/8-in. sides and fold.

d. Cut 1 length of duct tape 6 1/2-in. long x 1-in. wide and fold one end back on itself, 1-in., to create pull tab.

e. Place the length of tape made in step d on a table with the adhesive side facing up and folded end to your right. Measure in from the right 2 inches and place the plate made in steps a through d on the adhesive to the left at the 2 inch measurement (you will have adhesive areas of tape on both sides of the plate).

**NOTE**

Do not cover the antenna with the tape.

f. With the AN/PRC-112B radio buttons facing up and the word "talk" closest to you and to the right, place plate made in steps a through e over the buttons with the folded edge of the tape on the right side of the radio just below the push to talk button. Fold and press the tape on to the right side of the radio body.

g. Fold and press the left side of the plate tape on to the left side of the radio body.

h. Cut a 48-in. length of MIL-C-5040, Type I, nylon cord with strands removed or MIL-C-5040, Type IA (Coreless), nylon cord and sear ends of cord.

i. Secure one end of the nylon cord to the radio/knife pocket grommet forming a 2-in. loop through the grommet and tie off using an overhand knot in one end, then tie a bowline knot.

j. Secure the other end of the nylon cord to the AN/PRC-112B radio webbing of "V" ring using a 2-in. loop around webbing or "V" ring and tie off using an overhand knot in one end, then tie a bowline knot.

k. Place AN/PRC-112B radio in a 12-in. x 12-in. ziplock plastic bag.

l. Remove as much trapped air as possible from the ziplock bag and tape over the closed ziplock closure using a 2-in. length of duct tape.

**NOTE**

The Type I or IA nylon cord can exit the bag at any location on the seal line. Location of the exit point is not critical.

A bagged radio with excessive trapped air will be difficult to stow into radio/knife pocket. If difficulty is encountered during stowage continue to press radio into pocket until sufficient air escapes to permit radio/knife pocket zipper closing.

m. Place the bagged radio into a second ziplock bag and seal closure using duct tape as in step l above.

n. Cut a 7 x 14-in. piece of laminated cloth and wrap around the bagged AN/PRC-112B radio and secure with a rubber band.

o. Stow radio in radio/knife pocket. (QA)

p. Close zipper in radio/knife pocket. (QA)

**NOTE**

AN/PRC-112B radios and batteries are currently undergoing rework/redesign to eliminate water leakage.

Bagging of the radio will not make it waterproof only water resistant.

Aircrew should not remove the radio from the ziplock bag until after they are in the raft.

**25. HARNESSES INSPECTION.**

**26. GENERAL.** The harnesses shall be inspected upon initial issue and at intervals coinciding with inspection of personal protective equipment.

**27. PCU-33/P PARACHUTE RESTRAINT HARNESS ASSEMBLY 90-DAY INSPECTION.**

a. The 90 day inspection shall include a service life check and a parachute restraint harness inspection.

b. Make proper entries in the remarks section on Aircrew Systems Record (OPNAV 4790/138). (QA)

**28. AIRCREW RESTRAINT HARNESS 360-DAY INSPECTION.**

a. The 360 day inspection shall include a service life check, a parachute harness inspection, and a suspended aircrew fit check of the restraint harness assembly.

b. Make proper entries in the remarks section on Aircrew Systems Record (OPNAV 4790/138). (QA)

**29. PARACHUTE RESTRAINT HARNESS SUSPENDED FIT CHECK.**

a. Suspend the aircrew above the deck and simulate mild opening shock by having the aircrew pull him/herself up by the risers to about 12 to 15-in. dropping back into the harness to induce settling while observing the change (rise) in location of the canopy release assemblies. If the harness is properly sized, fitted and adjusted, with full body weight of the aircrew supported by the main sling saddle, the change (rise) of the canopy release assemblies will be minimal and equal on both sides. Final position of the canopy release should not be higher than the aircrew's jaw bone nor indicate a loose fit of the harness. A major change (rise) may indicate that the body weight is not supported by the main sling saddle, the harness is not the proper size, or the harness has been improperly adjusted.

**30. SERVICE LIFE CHECK.****NOTE**

Service life shall begin when harness is first placed in service. When assembly reaches its service life limit, it shall be removed from service and forwarded to supply for disposition. When an inservice harness lacks start of service date, service life shall expire 12 years from date manufacture. When harness assembly lacks legible date of manufacture or date placed in service and a service/total life check cannot be verified by the Aircrew Systems Record (OPNAV 4790/138), the harness assembly shall be considered non-RFI and removed from service.

a. The service/total life of PCU-33/P parachute restraint harness is 12 years from date it was placed in service or 15 years from date of manufacture, whichever occurs first.

**NOTE**

When harness is removed from service, all parachute and lapbelt adapter hardware shall be removed and screened, if still serviceable retained for future use.

b. Check markings for completeness, legibility and agreement with assembly records.

c. Compare configuration of restraint harness assembly to that presented in WP 008 04 Illustrated Parts Breakdown and Record of Technical Directives.

**31. PARACHUTE RESTRAINT HARNESS INSPECTION.**

a. Shoulder canopy release adapter for corrosion, distortion, presence of slide bar, sharp edges, routing of webbing and security of pin and setscrew, and presence of torque seal.

b. Riser restraint keeper for proper installation, security and attachment.

c. Gated D-Ring at right shoulder for corrosion, distortion, cracks, sharp edges and proper installation (gate inboard).

d. Box-X stitching on end of right shoulder strap (must be doubled rolled and machine stitched. Hand tacking is not acceptable).

e. Chest strap friction adapter(s) for corrosion, distortion, cracks, presence of slide bar, sharp edges and security of attachment.

f. Chest strap for proper installation, security and attachment of hook and pile tape.

g. Pull thong for proper installation, security and attachment of hook and pile tape.

h. Harness links at rear inside of suit for corrosion, distortion, cracks, sharp edges, proper routing and condition of harness webbing.

i. Slide fastener for corrosion, missing teeth, presence of slider, security of attachment, pull thongs and ease of operation.

j. Oxygen Regulator Mounting Bracket and Plate for corrosion, security, attachment of rivets, distortion, cracks, sharp edges and proper installation.

k. Removable OBOGS/Bracket/Mini Regulator mount for corrosion, security, attachment of rivets and snap fasteners, distortion, cracks, sharp edges and proper installation.

l. Survival Items Stowage Pockets for corrosion on slide fasteners, security of attachment, tackings, pull thongs for ease of operation.

m. Survival Items inspect per NAVAIR 13-1-6.5.

n. Life preserver retention system for cuts, rips, frayed or weakened webbing, security of stitching and presence and condition of snap fasteners.

o. Lapbelt support strap loop tackings for security. Tackings (4 places) shall be 1/8-in. above lapbelt.

p. Lapbelt quick-release adapter for corrosion, distortion, sharp edges and security of attachment.

q. Hooks and eyelets for damage and security of attachment (If installed).

r. Saddle anti-rotation straps for proper installation, security and proper placement of hook and pile tape and tackings.

s. Saddle anti-rotation adapter tabs for cuts, tears, fraying, deterioration, contamination and security of stitching and tackings.

t. Pockets, attachment of survival items.

u. Mask storage bag for cuts, tears, contamination and condition of snap fastener (If installed).

v. (If required) Check for proper installation, condition and security of LPU D-Ring attachment tabs.

w. Fabric panels for cuts, tears, fraying, deterioration, contamination and security of stitching.

x. Webbing for cuts, tears, fraying, contamination, deterioration and security of stitching.

**32. 90-DAY INSPECTION OF HELICOPTER EMERGENCY EGRESS DEVICE (HEED) SRU-36/P.**

a. Inspect per NAVAIR 13-1-6.7-4.

**33. RISER RESTRAINT KEEPER INSTALLATION (AIRCREW OPTION).**

Materials Required

Specification or Part Number	Nomenclature
PIA-W-4088	Webbing, Nylon, 2 ft., Type VIII
MIL-F-21840	Fastener, Tape, Hook, 2-in. Wide, Type II, Class 1
MIL-F-21840	Fastener, Tape, Pile, 2-in. Wide, Type II, Class 1
V-T-295	Thread, Nylon, Size E, Type I or II, Class A

a. Sear two pieces of webbing, 11-in. long. Avoid forming sharp edges after searing the ends of the webbing.

b. Cut two pieces of hook fastener tape and two pieces of pile fastener tape 1-in. long.

c. Position one piece of hook and pile fastener tape (faced up) on opposite ends of each 11-in. webbing.

**NOTE**

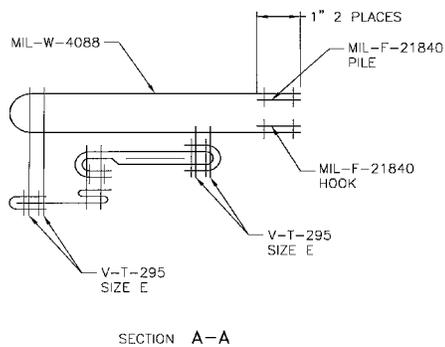
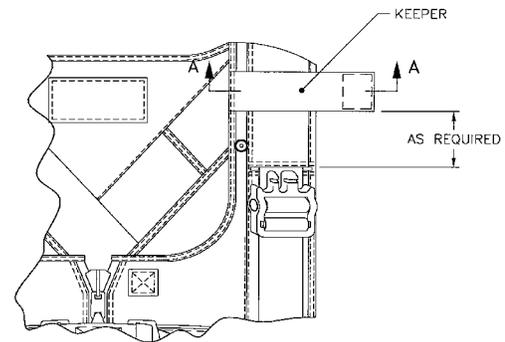
The 1-in. cut length of hook and pile fastener tape shall be positioned on the webbing width.

d. Machine stitch around edge of hook and pile fastener tapes with a box stitch.

e. Fold the keepers in half to match the hook and pile fastener tapes together.

f. Custom fit the restraint riser keepers to the aircrew members harness assembly as follows:

(1) Insure that the keepers are installed in two places, sewn to the harness garment vertical binding tape and positioned above the canopy release adapter (Figure 19).



6.2-5019C

**Figure 19. Riser Restraint Keeper**



Avoid stitching across the harness webbing or garment channel.

(2) The opening ends of the left and right riser restraint keepers shall be outboard.

g. After the aircrew connects the PHSRU, he then places the left and right risers between the applicable keeper and fastens the hook and pile fastener tapes.

h. Make proper entries on Aircrew Systems Record (OPNAV 4790/138). (QA)

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**ORGANIZATIONAL MAINTENANCE**

**ORIGINAL ISSUE RIGGING PROCEDURES**

**PCU-33/P SERIES PARACHUTE RESTRAINT HARNESS ASSEMBLY**

**PART NO. 829AS100**

**List of Effective Work Package Pages**

<u>Page No.</u>	<u>Chg. No.</u>						
1 thru 22	8						

**Reference Material**

Parachute Loft Requirements/Administration .....	WP 003 00
Support Equipment .....	WP 005 00

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**Record of Applicable Technical Directives**

<u>Type/No.</u>	<u>Date</u>	<u>Title and ECP No.</u>	<u>Date Inc.</u>	<u>Rescission Date</u>
ACC 623	14 Feb 96	Riser Restraint Keeper (RAMEC P-08-95)	1 Jul 96	31 Dec 2003
ACC 633 Rev A	13 Sep 00	Replacement of LPU-23/P Floata- tion Device and LPU-33/P LPFC with LPU-36/P on PCU-33/P (Series) and PCU-56/P (Series) Integrated Parachute Restraint Harnesses (96A30) (ECP-16387)	1 Jan 01	30 Jun 2008

**1. GENERAL.**

2. This work package (WP) provides rigging procedures for the original issue of the PCU-33/P Parachute Restraint Harness Assembly.

3. Quality Assurance (QA) points have been included in the rigging 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.

4. All stitching shall use size E thread.

**5. PRELIMINARY PROCEDURES.**

6. To prepare the parachute restraint harness assembly for original issue rigging, do as follows:

Support Equipment Required

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

Materials Required

Specification or Part Number	Nomenclature
1979AS838-1 -or- 015-11366-1	Adapter Assembly, Lapbelt
990065-1 -or- 015-710001-1	Adjuster Assembly, Strap
A-A-52080-B-2	Tape, Lacing and Tying Finish B, Size 2, Type I, Black
MIL-C-12369	Cloth, Ballistic Class I
MIL-C-7219	Cloth, Nylon Duck, Type III, Class 3
MIL-C-5040	Cord, Nylon, Type I or IA
MS51925-4	Dee-Ring

Specification or Part Number	Nomenclature
MIL-F-21840	Fastener Tape, Hook, 1-in. Wide, Type II, Class 1
MIL-F-21840	Fastener Tape, Hook, 1 1/2-in. Wide, Type II, Class 1
MIL-F-21840	Fastener Tape, Pile, 1-in. Wide, Class 1
MIL-F-21840	Fastener Tape, Pile, 1 1/2-in. Wide, Class 1
MS27983-1	Fastener, Button
MS27983-2N	Fastener, Socket
MS27983-3	Fastener, Stud
MS27983-4	Fastener, Eyelet
MIL-I-6903	Ink, Marking, Light Blue
TT-I-1795	Ink, Marking, Black
F-900 Torque Seal (Color Optional)	Sealing Compound
A-A-131	Rubber Band
122-10935-3	Setscrew
MIL-A-46106	RTV 102/732
M43770/12	Snap Hook
PIA-T-5038	Tape, Nylon, Type III, Class 1 or 1A
V-T-295	Thread, Nylon, Size E, Type I or II, Class A
V-T-295	Thread, Nylon, Size FF, Type I or II, Class A
V-T-295	Thread, Nylon, Size 6, Type I or II, Class A
MIL-W-4088	Webbing, Nylon, Type IV, 3-in. Wide, Class 1, 1A or 2
MIL-W-5664	Webbing, Textile, Elastic, Type I, Class 1 or 1A

**7. APPLICATION OF MARKINGS.**

8. When a harness assembly is placed in service, the month/year of opening manufacturer's individual shipping container shall be stenciled on harness lapbelt and label as follows:

- a. When using a stamp pad, moisten pad with ink. Pad must be evenly coated and free of clots.
- b. Make a test impression to determine correctness of marking and inking.
- c. Mark date placed in service (month/year) on center of lapbelt strap outer surface using 1/2-in letters and on label in 1/4-in. letters.
- d. Verify correctness of all markings. (QA)
- e. Allow markings to dry for 20 to 30 min.
- f. Record in remarks section of Aircrew Systems Record (OPNAV 4790/138), date of manufacture, date placed in service, the top assembly part number of the configured assembly and size by part number.

**9. RIGGING.**

**10. ATTACHMENT OF CANOPY RELEASE ADAPTER.**

**WARNING**

Harness webbing must be properly routed thru release adapter.

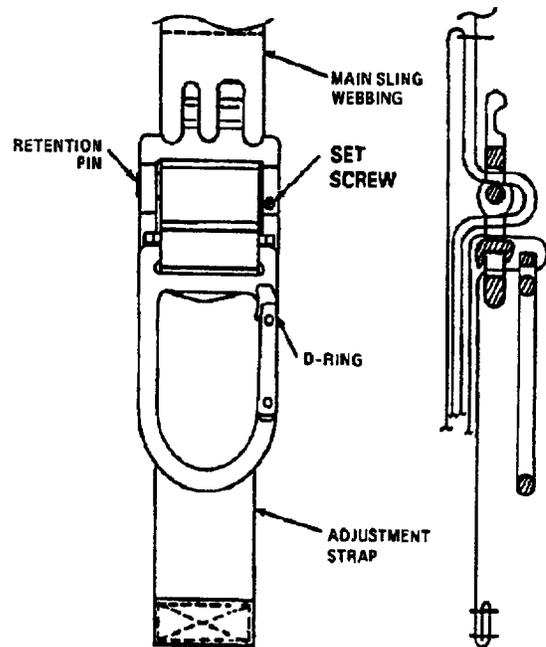
- a. Place canopy release adapter on harness with notch facing outward.
- b. Form a loop in adjustment strap and place loop thru adapter from back to front.

**WARNING**

Insure friction slide bar is correctly installed, the word stamped FRONT will face outboard (same direction as notches).

- c. Place friction slide bar thru loop of adjustment strap (word FRONT forward) and turn to an angle to allow insertion into adapter.

- d. Form loop in main sling harness webbing, using two forward layers. Place loops thru adapter above adjustment strap loop (Figure 1).



RIGHT SHOULDER

6.2-5590

**Figure 1. Attachment of Canopy Release Adapter**

**NOTE**

Setscrew is a one time use item (if a new set-screw is not available reuse of a setscrew shall require application of sealing compound MIL-S-22473 Grade A to threads).

- e. Install retention pin and setscrew.
- f. Apply torque seal to screwhead. (QA)

**11. GATED D-RING INSTALLATION.**

**Materials Required**

Specification or Part Number	Nomenclature
823AS100-1	D-Ring with Gate
V-T-295	Thread, Nylon, Size E, Type I or II, Class A

- a. Install gated D-Ring (gate inboard) and reeve back thru adapter (Figure 1).
- b. Leave 8-in. of webbing from bottom of canopy release adapter to end of webbing, cut and sear end.

Avoid forming sharp edges while hot knifing and searing. Fold free end of webbing and box-X stitch with size E thread, backstitch 1/2-in. Folded stitched webbing must face outward (Figure 1). (QA)

**12. ATTACHMENT OF LAPBELT ADAPTER.**

**CAUTION**

Do not pinch webbing with tools when removing or installing lapbelt adapters.

- a. Install slide pin in webbing loop of lapbelt.
- b. Align replacement adapter with notched side of prongs inboard toward wearer, on slide pin.
- c. Apply sealing compound to threads of the two shoulder screws. Install screws thru holes in release adapter.
- d. Thread securing screws into slide pin.
- e. Tighten securing screws. (QA)

**13. ATTACHMENT OF SURVIVAL VEST TAB AND DEE-RING.**

Materials Required

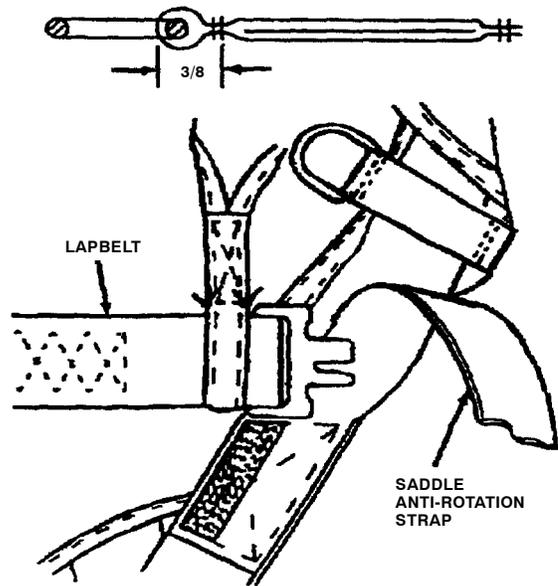
Specification or Part Number	Nomenclature
V-T-295	Thread, Nylon, Size E, Type I or II, Class A
MS51925-4	Dee-Ring (2)
PIA-T-5038	Tape, Nylon, Type IV, Class 1 or 1A, 1-in. Wide, 6 1/4-in. Long

a. Cut a length of nylon tape 6 1/4-in. and sear ends of webbing. Avoid forming sharp edges while hot knifing and searing.

b. Reeve nylon webbing thru Dee-Ring and fold in half. Sew tape together with double row of stitching 3/8-in. from Dee-Ring. Back stitch 1/4-in. (Figure 2).

**NOTE**

The Dee-Ring and tab should be located above the lapbelt.



6.2-5595

**Figure 2. Attachment of Tab with Dee-Ring to Harness**

c. Place Dee-Ring and tab around harness groin strap webbing and sew ends together 1/8-in. from end with a double row of stitching. Backstitch 1/4-in. Ensure that stitching does not pass thru harness webbing (Figure 2). (QA)

**14. ATTACHMENT OF SURVIVAL STOWAGE POCKETS.**

Materials Required

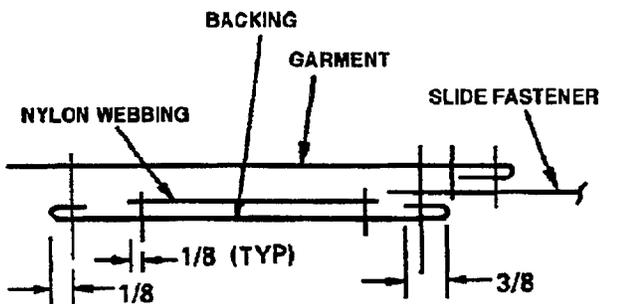
Specification or Part Number	Nomenclature
V-T-295	Thread, Nylon, Size E, Type I or II, Class A
MIL-W-4088	Webbing, Nylon, Type III, Class 1, 1A or 2, 3-in. wide
MIL-C-7219	Cloth, Nylon Duck, Type III, Class 3
MIL-C-12369	Cloth, Ballistic, Class I
829AS146-1	Pockets, Radio and Knife
829AS145-1	Pocket, Strobe Light
829AS147-20	Pocket, Survival Item Stowage
814AS805-1	Pocket, HEED Survival Item Stowage

**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.

Survival item pockets are authorized on all size harnesses. A local determination of acceptability must be made on the smaller size (including custom made) harnesses. Additionally, small stature aircrew who have difficulty with the placement of the chest strap, should use a survival vest vice pockets.

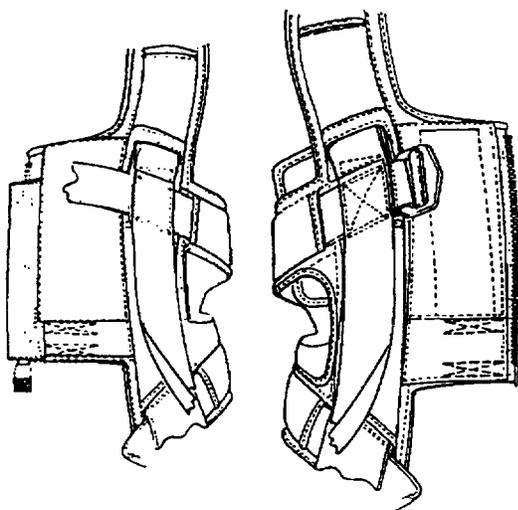
a. On left panel, center webbing, full length of panel and stitch to panel before stitching to the harness (Figure 3).



6.2-7085A

**Figure 3. Cross Section of Backing Panel**

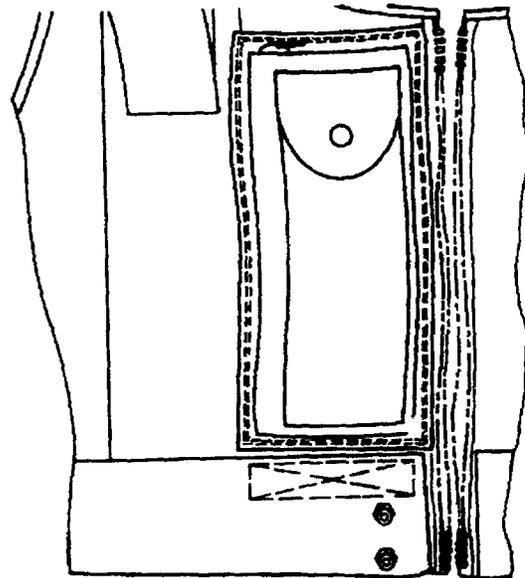
b. Add backing material to inside surface of harness left and right front panels. Fold the backing material 3/8-in. on edges of left and right panels and stitch to garment 1/8-in. from edge (Figure 4).



**Figure 4. Addition of Backing Material**

6.2-7085

c. Install radio/knife pocket on right side of harness, align bottom of pocket with harness securing webbing assembly for LPU and along slide fastener fold line (Figure 5). (QA)



6.2-7086

**Figure 5. Attachment of Radio/Knife Pocket**

**WARNING**

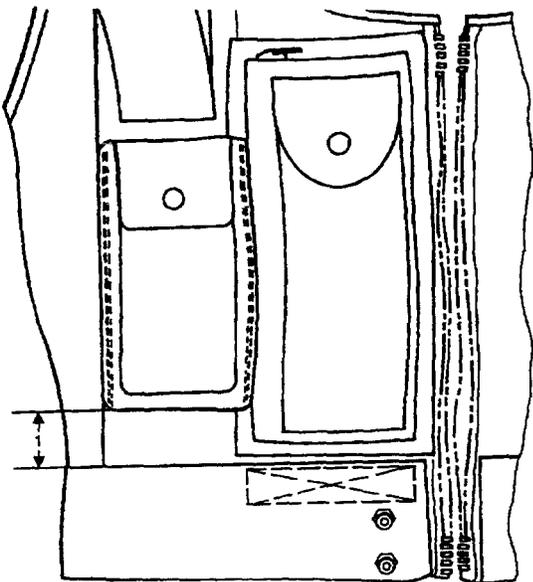
Do not stitch thru harness shoulder straps or thru fabric channels that encase the straps. Do not stitch thru the chest strap.

d. Sew a double row of stitching around pocket 1/8-in. from edge. Do not stitch into channel area.

**NOTE**

Bound edges of strobe light pocket and radio/knife pocket may overlap on small size harnesses.

e. Install strobe light pocket, align pocket binding tape with channel fold line, align bottom of strobe light pocket 1-in. above edge of webbing. Overlap pocket binding tape on top of radio/knife pocket binding tape and double stitch 1/8-in. from edge (Figure 6). (QA)



6.2-7087

Figure 6. Attachment of Strobe Light Pocket

**NOTE**

Do not stitch over webbing channel.

f. Cut two pieces tape 4 1/2-in. also two pieces hook and pile tape. Sew one piece hook tape to nylon tape in a box stitch 1/8-in. from edge, turn nylon tape over and sew pile tape on opposite end in same manner.

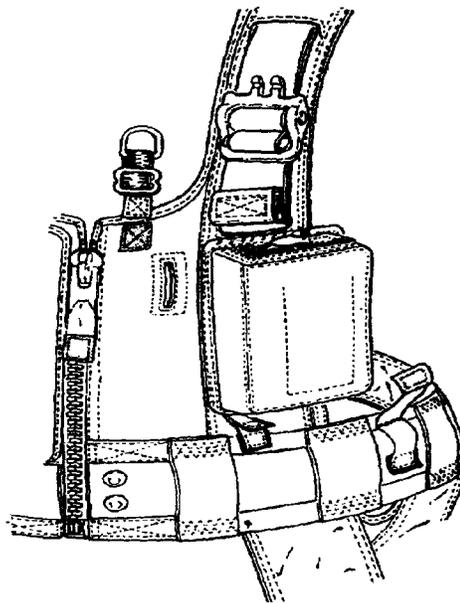
g. Position oxygen hose securing tab to bottom right edge survival items stowage pocket and bar tack. Position second oxygen hose securing tab to life preserver securing belt 1/4-in. from top and centered between second and third loops on left side.

h. (OBOGS) Position of oxygen securing tab(s) to life preserver securing belt 1/4-in. from top and located in a position for each aircrew's preference. To keep the oxygen hose from blocking access to the left aircraft console.

**NOTE**

Additional tabs may be added as required to obtain a comfortable routing of oxygen hose

i. Attach survival items stowage pocket to harness, align pocket edge 4 1/4-in. from edge front panel material (medium size harness and smaller align on seam). Pocket needs to be 4 1/4-in. for OBOGS and Diluter Demand. Sew a double row stitches 1/8-in. from edge of pocket, sew pocket on webbing channel fold line (Figure 7). (QA)



6.2-7088

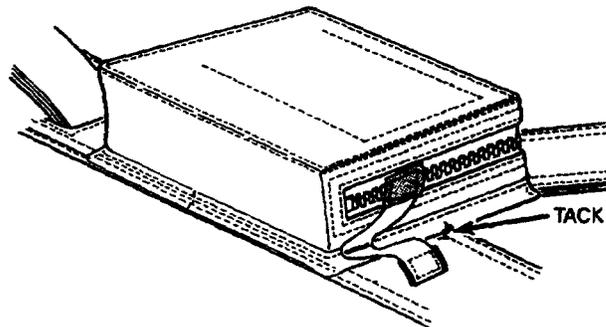
Figure 7. Attachment of Survival Items Stowage Pocket

**WARNING**

Do not stitch thru harness webbing, or over webbing channel.

j. Tack survival pocket to main sling, to right of oxygen securing tab with size 6 thread, doubled and waxed; tie off (Figure 8). (QA)

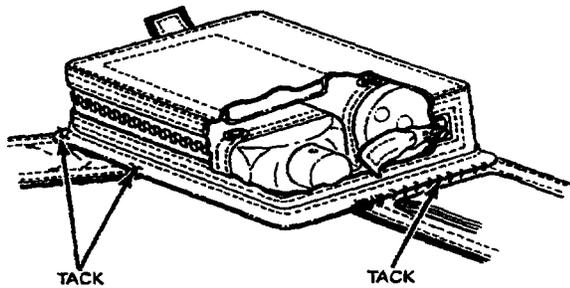
k. Hand tack pocket to left side of harness with two turns of size 6 thread, single and waxed; tie off. (QA)



6.2-7090

Figure 8. Tacking of Survival Items Stowage Pocket to Main Sling

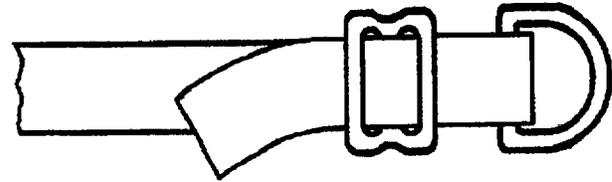
l. Hand stitch pocket over webbing channel with size 6 thread doubled and waxed. Start stitch with two overhand knots followed by a whip stitch and secure with two overhand knots (Figure 9). (QA)



6.2-7089

Figure 9. Hand Stitch Pocket Over Webbing

d. To attach the slide loop and Dee-Ring. Pass the end of webbing thru the slide loop, around the Dee-Ring and back thru the slide loop (Figure 11).



6.2-5590A

Figure 11. Attachment of Slide Loop and Dee-Ring

15. ATTACHMENT OF LPU STRAPS.

Materials Required

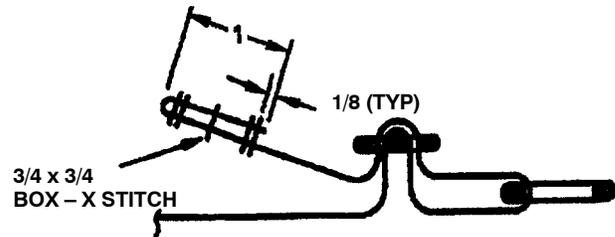
Specification or Part Number	Nomenclature
MS51940-3S	Loop, Slide (2)
MS51925-4	Dee-Ring (2)
PIA-T-5038	Tape, Nylon, Type IV, Class 1 or 1A, 1-in. Wide, 18-in. Long

a. Cut two lengths of nylon webbing 1-in wide and 9-in. long, and sear ends of webbing. Avoid forming sharp edges while hot knifing and searing.

b. Sew one length of webbing on the left panel back side, above the zipper stop 1 1/4-in. from top of panel and 1 1/4-in. from edge of zipper, with a box-X stitch 3/4 x 3/4-in. (Figure 10).

c. Sew the other length of webbing on right panel back side, above zipper stop 1 1/4-in. from top of panel and 1 1/4-in. from edge of zipper, with a box-X stitch 3/4 x 3/4-in. (Figure 10).

e. Adjust to the aircrew for proper fit. Cut excess webbing; fold over 1-in. and box-X stitch 3/4 x 3/4-in. (Figure 12).



6.2-5590B

Figure 12. Adjust to Aircrew

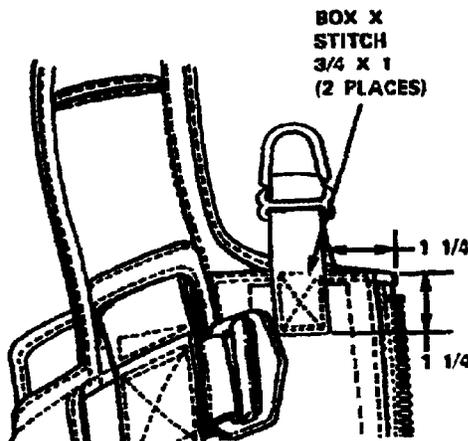


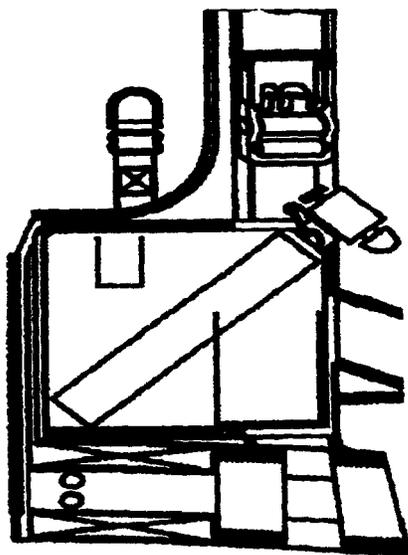
Figure 10. Attachment of LPU Straps

16. ATTACHMENT OF HEED SURVIVAL STOWAGE POCKET.

Materials Required

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

a. Align the pocket with the outer edge of channel and 2 7/8-in. from bottom of floatation belt. Attach pocket with a double row of stitching along channel (do not stitch thru channel) from the bottom of the pocket up to the slot where the main sling webbing exits the garment (Figure 13).



6.2-7089C

Figure 13. Attachment of HEED Pocket

b. On the inside (towards slider), attach the pocket to the garment with a double row of stitching and around the top and bottom of the pocket up to the main sling webbing (Figure 13).

c. Make proper entries on Aircrew Systems Record (OPNAV 4790/138). (QA)

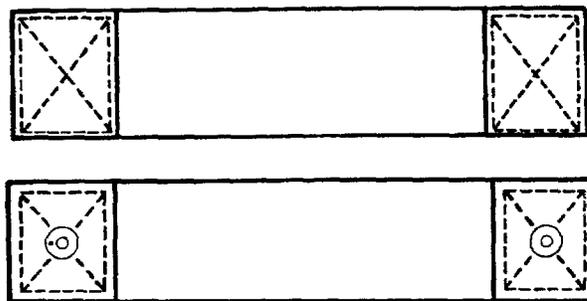
**17. ATTACHMENT OF RETENTION LOOPS FOR GOOSENECK FLASHLIGHT.**

Materials Required

Specification or Part Number	Nomenclature
MIL-W-5664	Webbing, Textile, Elastic, Type I, Class 2
PIA-T-5038	Tape, Nylon, Type III, Class 1 or 1A
MIL-W-4088	Webbing, Nylon, Type I, Class 1, 1A or 2
MS27983-1	Snap, Fastener, Button
MS27983-2N	Socket, Snap Fastener
MS27983-3	Stud, Snap Fastener
MS27983-4	Snap, Fastener, Eyelet
V-T-295	Thread, Nylon, Size E, Type I or II, Class A

a. Cut two pieces of elastic webbing 9 1/2-in.

b. On each piece of webbing, fold back 1 1/4-in. on each end and stitch this doubled over end using a 1-in. box X-stitch. Stitches should be within 1/8-in. of webbing (Figure 14).



6.2-7091

Figure 14. Retention Strap and Installation of Snaps

c. At intersection of diagonal stitch on box X stitch of each piece webbing, install cap/socket on fold and stud/post on opposite fold. Ensure these are installed so they snap around the gooseneck flashlight (Figure 14). (QA)

d. Mount flashlight on right side of harness between strobe light and radio/knife pocket. Mounting will be accomplished to ensure base of flashlight is flush with bottom of radio/knife pocket. Mount so stud/eyelet is on same side as strobe light pocket.

e. Find center of first piece of elastic webbing. Place top of one piece of elastic webbing 2 1/4-in. below top of radio/knife pocket upper edge binding. Ensure stud/post is facing strobe light.

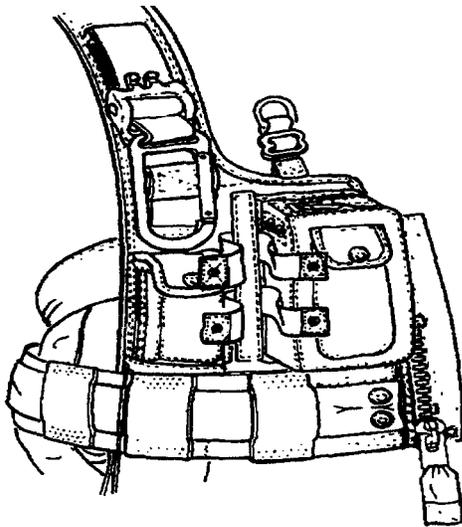
f. Stitch center of elastic webbing with four continuous rows of vertical stitches about 1/16-in. apart, directly over radio/knife pocket edge. Stitch no closer than 1/8-in. from edge of webbing.



Do not stitch thru harness webbing straps.

g. Find center of second piece of webbing. Place top of second piece of webbing 1 3/4-in. below the bottom of the first piece.

h. Cut a piece of tape 10 1/2-in. long and turn under 1-in. and align tape with top binding tape of radio/knife pocket, sew around edge of tape. Bottom end of tape turned under 1/2-in. in aligning of flashlight retention straps, sew 1/8-in. around edge of tape, backstitch 1/2-in. (Figure 15). (QA)



6.2-7092

Figure 15. Installation of Flashlight Holder

i. Top elastic webbing should surround flashlight between gooseneck and top of light switch. Bottom elastic webbing should surround flashlight above upper lip of battery access cover. (QA)

**18. ATTACHMENT OF HOOK AND PILE FASTENER TAPE TO CHEST STRAP.**

Materials Required

Specification or Part Number	Nomenclature
MIL-F-21840	Fastener Tape, Hook, 1 1/2-in. Wide, Type II, Class 1
MIL-F-21840	Fastener Tape, Pile, 1 1/2-in. Wide, Class 1
V-T-295	Thread, Nylon, Size E, Type I or II, Class A

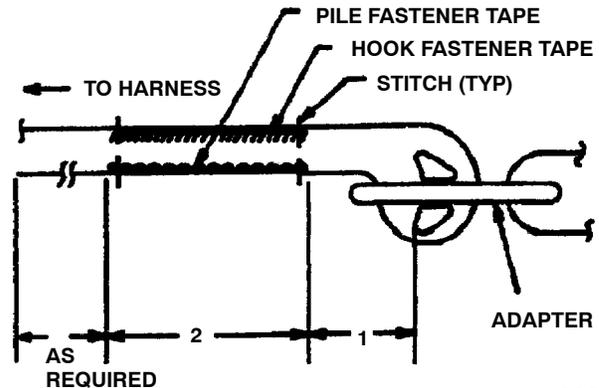
- a. Properly fit harness to aircrew.
- b. Mark chest strap webbing 1-in. from friction bar on both free end and portion attached to harness. (QA)

**NOTE**

Placement of the hook and pile fastener tape may be reversed (aircrew option).

c. Attach a 2-in. strip of hook fastener tape on outer surface of chest strap and a 2-in. strip of pile fastener tape on inner surface of free end. Machine stitch around edges of hook and pile fastener tape. Backstitch a minimum of 1/2-in. Leave a minimum of 10-in. of webbing from chest strap friction bar after fitting to aircrew. Trim and sear. Avoid forming sharp edges while hot knifing and searing (Figure 16). (QA)

d. When donning, aircrew shall align hook and pile tape patches and press together firmly.



6.2-5563

Figure 16. Attachment of Hook and Pile Tape to Chest Strap

**19. ATTACHMENT OF HOOK AND PILE FASTENER TAPE TO ANTI-ROTATION STRAPS.**

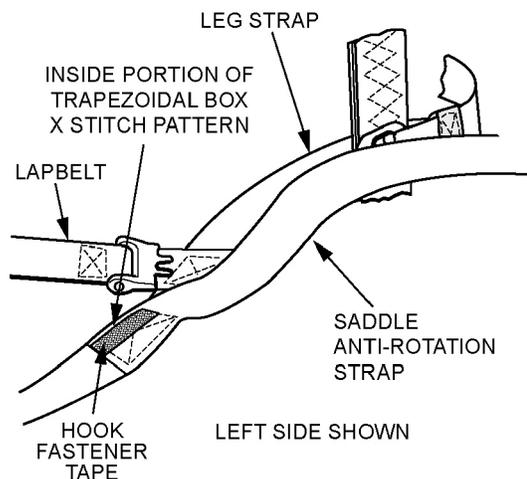
**NOTE**

Production harness will be supplied with 1-in. or 5/8-in. wide hook and pile fastener tape.

Placement of the hook and pile fastener tape may be reversed (aircrew option).

a. Properly size and fit parachute restraint harness to aircrew.

b. Lay each hook tape lengthwise over inside portion of each 4-in. Trapezoidal box-X stitch pattern that attaches anti-rotation adjustment straps to left and right leg straps. Cut top narrow end of each hook tape to match angled end of each trapezoidal box-X stitch pattern. Sew each hook tape over inside portion of each trapezoidal box-X stitch pattern (Figure 17).



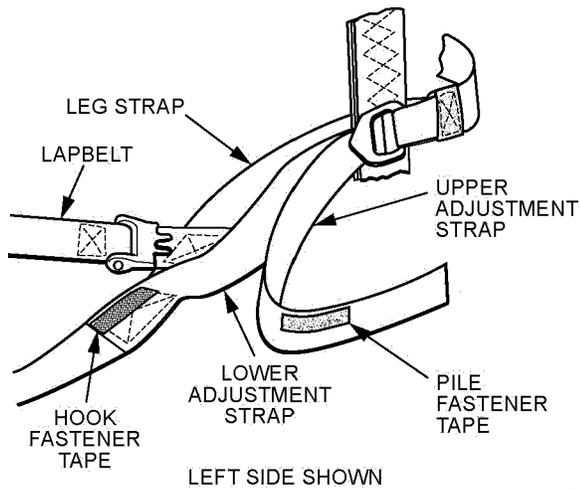
6.2-7093

Figure 17. Lay Each Hook Tape Lengthwise

c. Route free ends of adjustment straps through their respective reversible adapter.

d. Aircrew shall don harness, adjust chest strap and anti-rotation adjustment straps to a snug but not tight position. Lay free ends of upper portions of adjustment straps flat over lower parts of adjustment straps. On bottom side of each upper adjustment strap mark location of hook fastener tape.

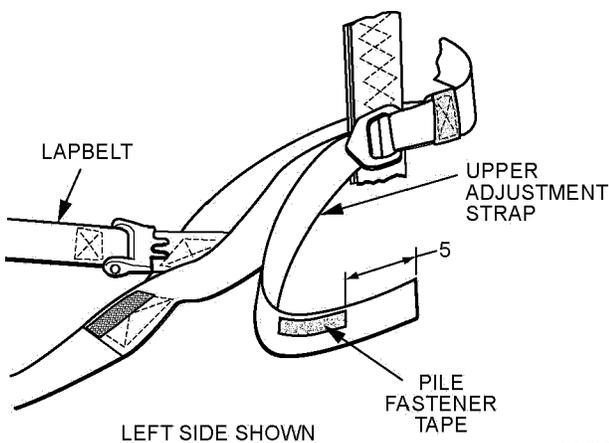
e. Sew pile tape within stitch pattern marks made on upper adjustment straps (Figure 18).



6.2-7094

**Figure 18. Sew Pile Tape to Adjustment Straps**

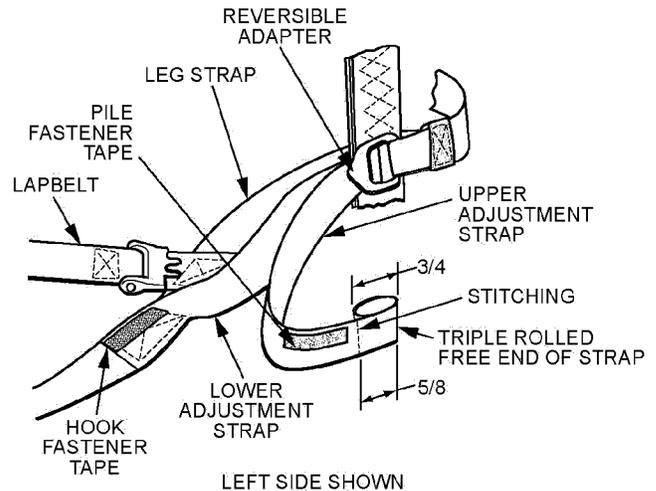
f. Measure 5-in. from ends of pile tapes toward free ends of adjustment straps and mark. Use a hot knife to sear away excess strap at 5-in. marks (Figure 19).



6.2-7095

**Figure 19. Measure 5-in. From Ends of Pile Tape**

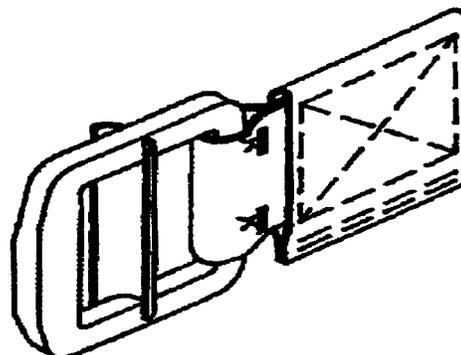
g. Triple roll 3/4-in. of free end of each adjustment strap to side opposite that of pile tapes and sew together with single row of stitchings 5/8-in. from rolled end (Figure 20).



6.2-7096

**Figure 20. Triple Roll 3/4-in. of Free End**

h. Tack reversible adapter on sleeve side through webbing and as close as possible to hardware. Tack with one turn size FF thread double and waxed; tie off (Figure 21).



6.2-7096A

**Figure 21. Tack Reversible Adapter**

i. When donning harness, aircrew shall tighten adjustment straps to a snug position and shall then align hook and pile fastener tapes, pressing firmly together.

**20. ATTACHMENT OF SURVIVAL ITEMS TO STOWAGE POCKETS.**

Materials Required

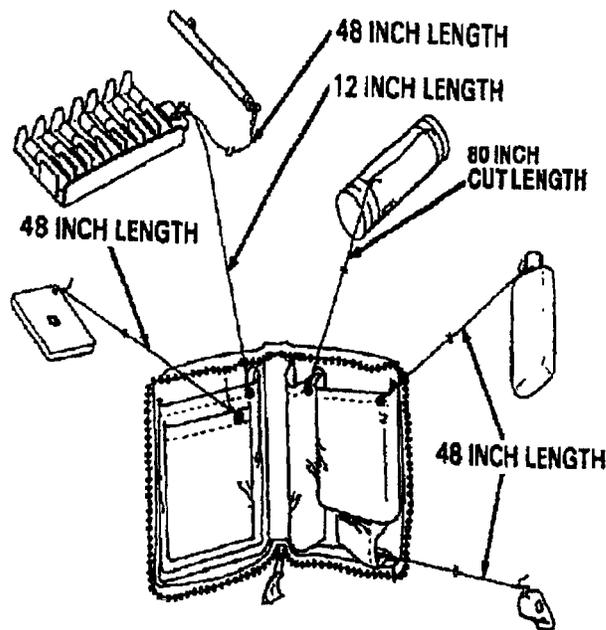
MIL-C-23070	Cloth, Laminated
MIL-C-5040	Cord, Nylon, Type I or IA (Coreless)
1791K10	Tape, Duct
A-A-1799	Bag, Plastic
—	Aluminum 0.090-in. thick ±0.010-in. Any Grade

**NOTE**

Use fake securing lines along individual survival items (excluding bandolier cord) and secure with light weight rubber band.

a. Attach a Smoke and Illumination Marine Signal (flare), cut 80-in. length of nylon cord and sear ends. Tie an overhand knot in one end. Wrap end of cord two turns around one end of signal flare and tie a surgeon's knot. Turns of cord shall overlap all knots positioned snugly against each other. Route cord to apposite end of signal flare and tie in same manner as above. Cord between ties shall be tight. Secure free end of cord to grommet in distress flare pocket, with bowline knot and a overhand knot on free end (Figure 22).

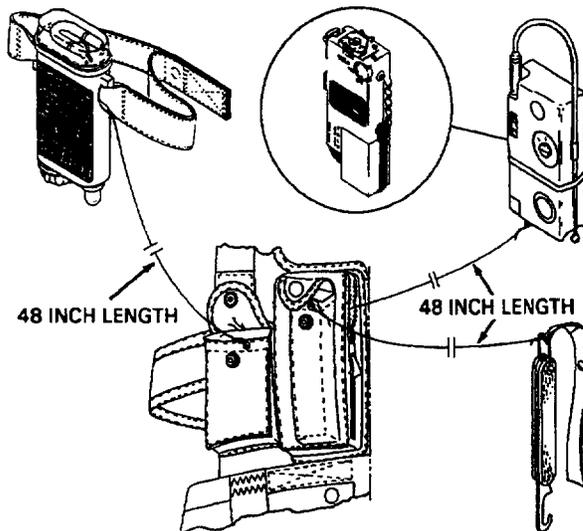
b. To attach MK-79 bandolier signal kit, cut a 12-in. length of nylon cord and sear ends. Tie overhand knot in one end and then pass end thru hole provided in bandolier and tie a bowline knot. Tie an overhand knot in other end and pass nylon cord thru grommet in signal kit pocket, then tie off with a bowline knot (Figure 22).



6.2-7082C

**Figure 22. Attachment of Smoke and Illumination Signal and MK-79 Signal Kit**

c. Cut a 48-in. length of nylon cord and sear ends. Tie an overhand knot in both ends, pass one end thru hole in bandolier and secure with a bowline knot. Pass other end of nylon cord thru end of pen gun and secure with a bowline knot (Figures 22 and 23).



6.2-7082A

**Figure 23. Secure Remaining Survival Items**

d. Secure remaining survival items with a 48-in. length of nylon cord, sear ends and tie and overhand knot in ends followed by a bowline knot. (QA)

**NOTE**

If AN/PRC-112 (V) or AN/PRC-112B survival radios are used install and stow as follows.

e. AN/PRC-112 (V) radios do not require this packing plate.

f. Cut a 1-in. by 2 3/8-in. plus 1/8-in. minus 0-in. plate from a sheet of any grade aluminum 0.090-in. thick plus or minus 0.010-in.

g. Radius the corners and deburr all edges.

h. Cut two lengths of duct tape, both 2 3/8-in. by 3/4-in, and center lengthwise along the 2 3/8-in. side of the plate, one on each side of the 2 3/8-in. sides and fold to the tape.

i. Cut one length of duct tape 6 1/2-in. long by 1-in. wide and fold one end back on itself 1-in. to create a pull tab.

j. Place the length of tape made in paragraph i above, on a table with the adhesive side facing up and folded end to your right. Measure in from the right 2-in and place the plate in paragraphs f thru g above, on the adhesive to the left at the 2-in. measurement (you will have adhesive areas of tape on both sides of the plate).

**NOTE**

Do not cover the antenna with the tape.

k. With the AN/PRC-112 series radio buttons facing up and the word "talk" closest to you and to the right, place plate made in paragraphs f thru i above, over the buttons with the folded edge of the tape on the right side of the radio just below the push to talk button. Fold and press tape on to the right side of radio body.

l. Fold and press the left side of the plate tape on to left side of radio body.

m. Cut a 48-in length of nylon cord with strands removed or (coreless) nylon cord and sear ends of cord.

n. Secure one end of the nylon cord to radio/knife pocket grommet forming a 2-in. loop thru grommet. Tie off.

o. Secure other end of nylon cord to AN/PRC-112 radio webbing of "V" ring using a 2-in. loop around webbing or "V" ring. Tie off.

p. Place AN/PRC-112 radio in a 12 x 12-in. ziplock plastic bag.

q. Remove as much trapped air as possible from the ziplock bag and tape over the closed ziplock closure using a 2-in. length of duct tape.

**NOTE**

The Type I or IA nylon cord can exit the bag at any location on the seal line. Location of the exit point is not critical.

A bagged radio with excessive trapped air will be difficult to stow into the radio/knife pocket. If difficulty is encountered during stowage continue to press radio into pocket until sufficient air escapes to permit radio/knife pocket zipper closing.

r. Place the bagged radio into a second ziplock bag and seal closure using duct tape as in paragraph p, above.

s. Cut a 7 x 14-in. piece of laminated cloth and wrap around the bagged AN/PRC-112 radio and secure with a rubber band.

t. Stow radio in radio/knife pocket. (QA)

u. Close zipper in radio/knife pocket. (QA)

**NOTE**

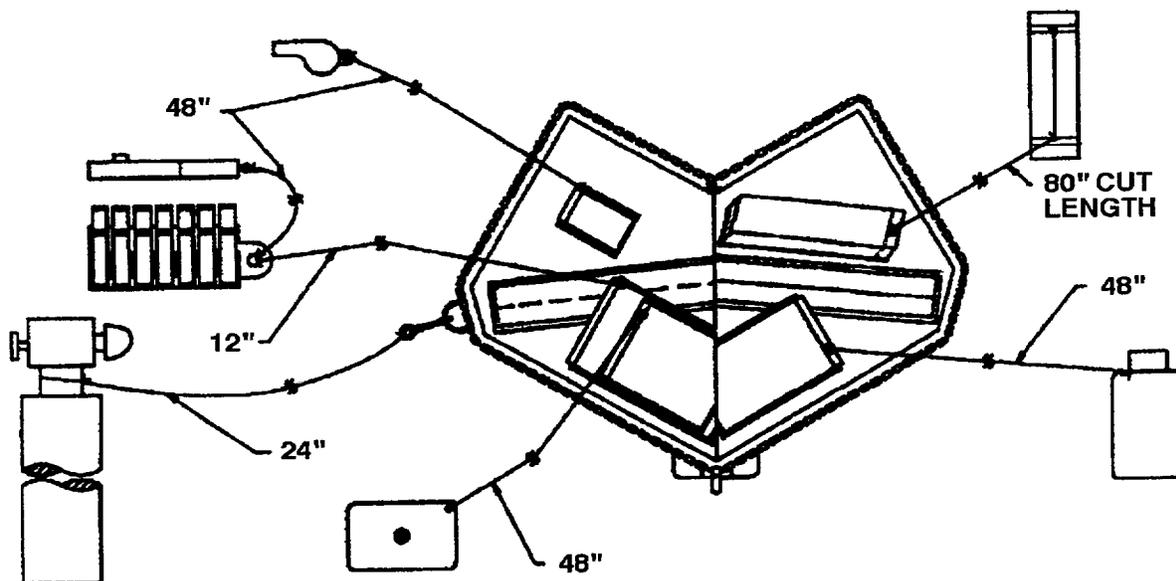
AN/PRC-112 radios and batteries are currently undergoing rework/design to eliminate water leakage.

Bagging of the radio will not make it waterproof only water resistant.

Aircrew should not remove the radio from the ziplock bag until after they are in the life raft.

**21. ATTACHMENT OF SURVIVAL ITEMS IN HEED POCKET.**

a. Cut a 24-in. length of nylon cord and sear ends. Attach one end of line at neck of HEED bottle, and secure with a bowline knot. Attach the other end to the snap hook, with a bowline knot and attach snap hook to Dee-Ring installed on HEED pocket (Figure 24).



6.2-7082B

Figure 24. Attachment of Survival Items in HEED Pocket

b. Install protective cover over HEED bottle, after it is placed into survival item pocket, by placing cover over mouth piece and valve closing hook and pile fastener around neck of HEED pocket.

**NOTE**

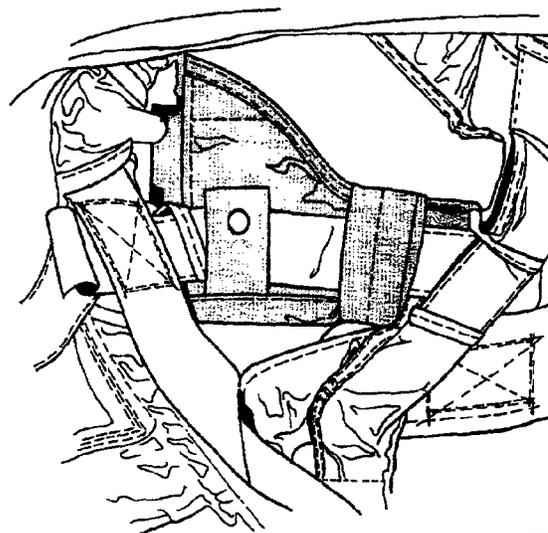
The protective cover for the HEED is to be removed before flight. The cover is intended to protect the HEED when not in use. The beads are on the inside of the pocket to serve as a "Hand-Hold" to enable a ditched aircrew with wet hands who has forgotten to remove the pocket to easily grasp the top of the pocket for quick removal. Stow cover in flightbag.

Do not tether to vest.

Care should be taken not to pull bottle out of pocket. Zippers are to be fully closed around neck of HEED but not enough to restrict HEED from being removed by pulling on the regulator head.

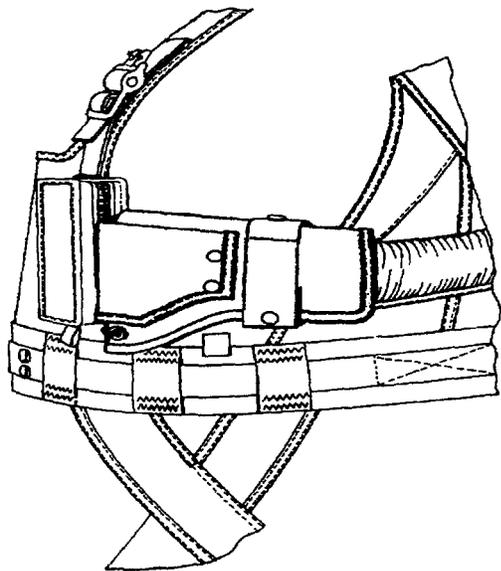
**22. ATTACHMENT OF PARACHUTE RESTRAINT HARNESS HOLSTER (AIRCREW OPTION).**

a. Attach per Figures 25 and 26.



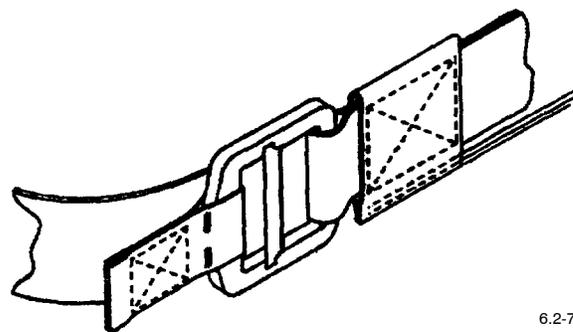
6.2-7310A

Figure 25. Attachment of Harness Holster



6.2-7310B

Figure 26. Attachment of Parachute Restraint Harness Holster



6.2-7095A

Figure 27. Attachment of Anti-Rotation Strap Tab

**23. ATTACHMENT OF ANTI-ROTATION STRAP ADAPTER TAB.**

Materials Required

Specification or Part Number	Nomenclature
MIL-W-4088	Tape, Nylon, Type II, Class 1 or 1A, Sage Green or Yellow
V-T-295	Thread, Nylon, Size E, Type I or II, Class A
V-T-295	Thread, Nylon, Size FF, Type I or II, Class A

a. Cut a length of tape 5-in. long and sear ends.

b. Pass one end of the tape around the friction adapter, turn ends under 1/4-in. and sew with a 1-in. box-X stitch, backstitch 1/2-in. (Figure 27).

c. Tack webbing to center and as close as possible to friction adapter to prevent movement. Hand tack with size FF thread waxed and doubled one turn. Tie off.

**24. ATTACHMENT OF THE LPU-36/37 FLOTATION COLLAR HARDWARE.**

Material Required

Specification or Part Number	Nomenclature
MIL-W-4088	Webbing, Nylon 1 inch wide, Type II, Color Optional, 5 inches
MIL-W-5664	Webbing, Elastic 1 inch wide, Color Optional, 17 inches
MS51925-4	Dee-Ring (8)
PIA-T-5038	Tape, Nylon 1 inch wide, Type III, Color Optional, 50 inches
V-T-295	Thread, Nylon, Size E
V-T-295	Thread, Nylon, Size 3

**NOTE**

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

a. Carefully remove LPU tabs and Dee-Rings (Figure 28).

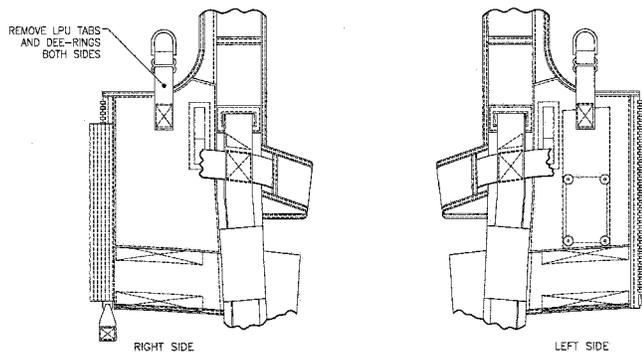


Figure 28. LPU Tab and Dee-Ring Removal

**WARNING**

Do not stitch thru harness webbing.

b. Cut four pieces of 1-in. wide PIA-T-5038, Type III, Nylon Tape, approximately 6 1/2-in. long. Fold each piece of webbing in half and insert two Dee-rings. Place each piece around harness garment and webbing. Stitch to harness garment (4 places) with size E thread (Figures 29).

c. Cut one length of 1-in. wide, MIL-W-4088, Type II, Nylon Webbing, approximately 4 1/2 inches. Sew piece of webbing on backside of harness using size E thread (Figure 30).

d. Cut two pieces of 1-in. wide PIA-T-5038, Type III, Nylon Webbing, 3 1/2-in. long. Measure and mark 1 1/2-in. above webbing channel. Sew webbing (horizontal straps) in place at the 1 1/2-in. mark, folding under 1/4-in. with three rows of size E thread (Figure 31).

**NOTE**

Use of Riser keepers in accordance with WP 008 01 is permissible in lieu of horizontal straps.

e. Cut four pieces of 1-in. wide, MIL-W-5664, Elastic Webbing, 3 1/2-in. long. Fold in half and sew 1/4-in. from the edge (Figure 32).

f. On the right side it may be required to relocate the radio pocket and the Standard Right Angle Two Cell Flashlight (Gooseneck) to a lower position to allow the LPU-36/37 attachment straps to be threaded through the

slots. If necessary, elongate slots in backing material of harness garment (Figure 33).

**NOTE**

On smaller harnesses the chest strap slots on the right side may not be accessible, even after lowering the radio pocket and flashlight holder. If this happens proceed to step g.

g. Sew a 1-in. wide PIA-T-5038, Type III, Nylon Webbing, 1 1/2-in. long on the inside and outside, as near as possible to the existing slot, sew using a box X stitch. Make sure slot is located below bottom of LPU-36/37. Hot knife a 3/4-in. long slot in the center of the webbing, through both pieces of webbing, including garment. The same process shall be done to the left side to maintain even mounting of the LPU-36/37.

**25. ATTACHMENT AND FITTING OF THE LPU-36/37 FLOTATION COLLAR TO AIRCREW.**

Material Required

Specification or Part Number	Nomenclature
V-T-295	Thread, Nylon, Size E
V-T-295	Thread, Nylon, Size 3

**NOTE**

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

**WARNING**

It is important that the LPU-36/37 be properly fitted to each individual aircrew.

**NOTE**

To ensure complete range of motion of the head and neck, all aircrew shall be fitted while wearing their issued helmet.

a. Install elastic keepers on to the LPU-36/37 attachment straps.

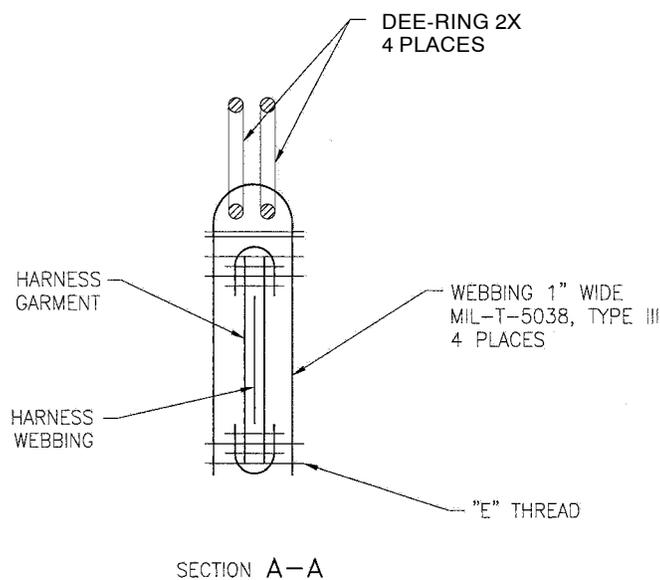
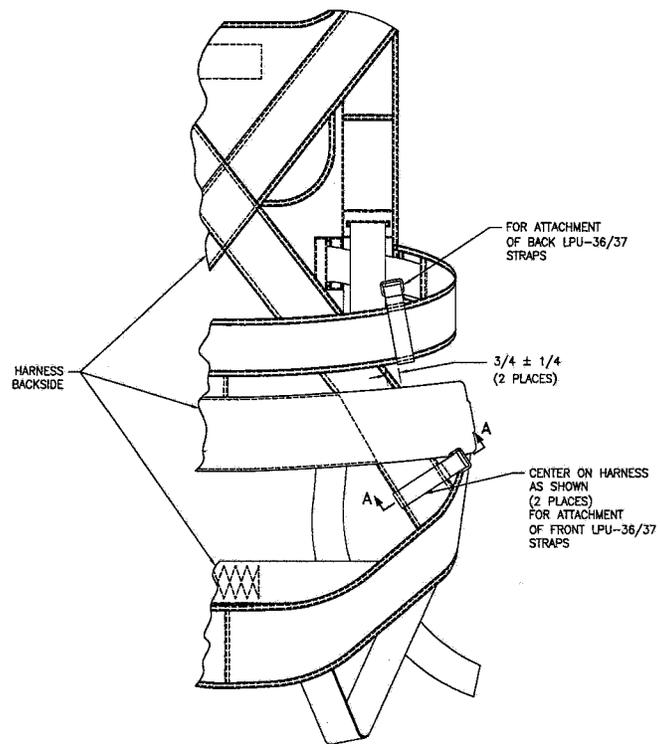


Figure 29. Front and Back Attachment Strap Location

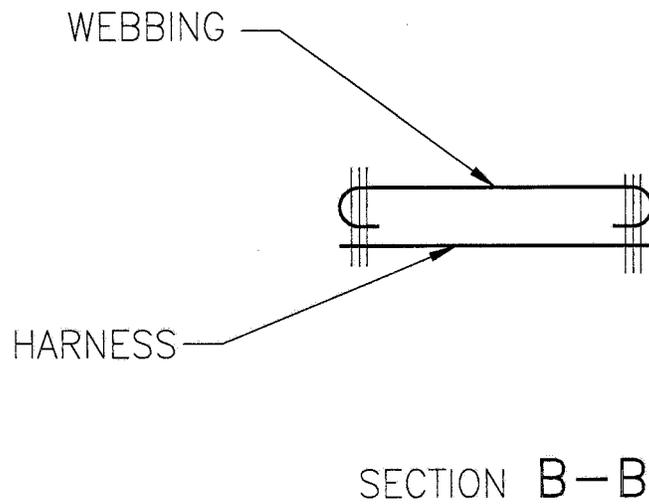
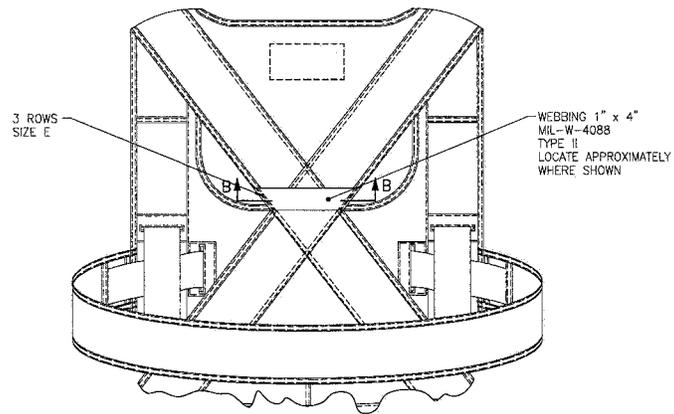


Figure 30. Back Strap Location

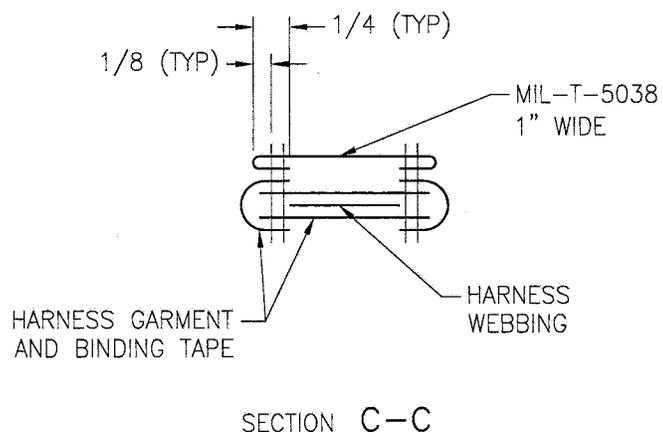
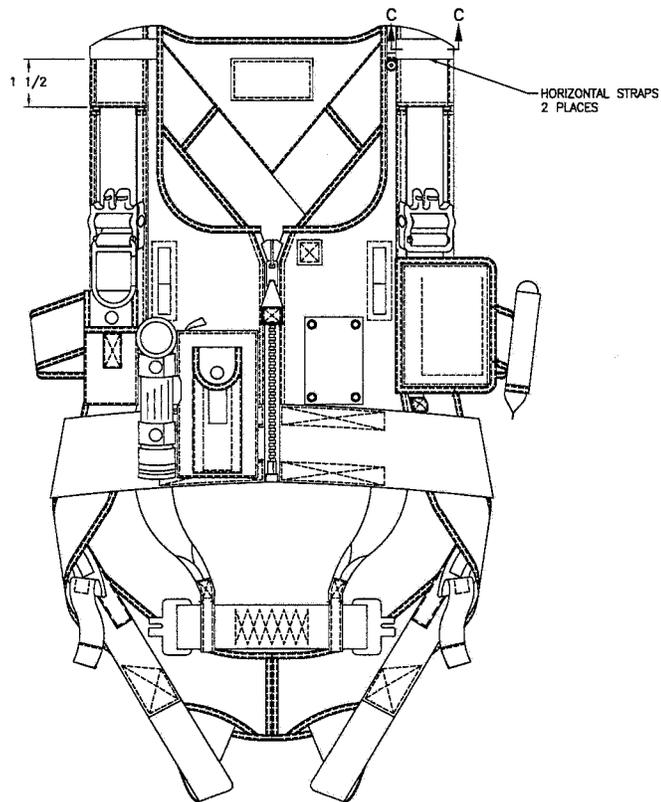


Figure 31. LPU-36/37 Horizontal Strap

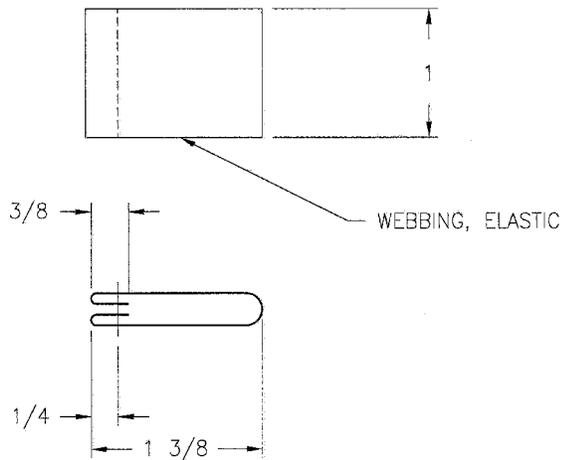


Figure 32. Keepers

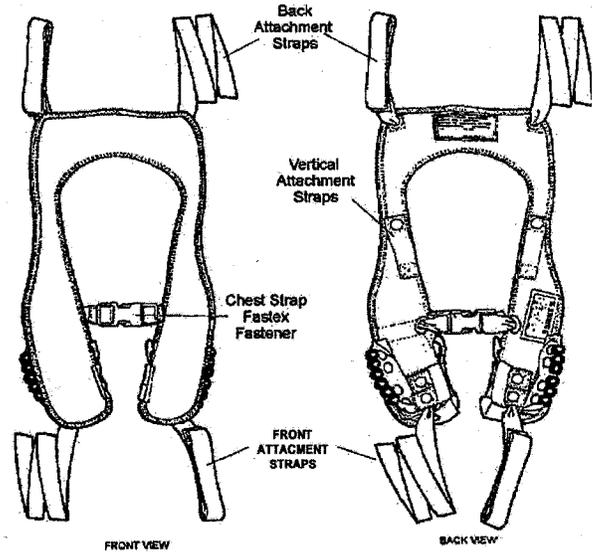


Figure 34. LPU-36/37 Low Profile Flotation Collar

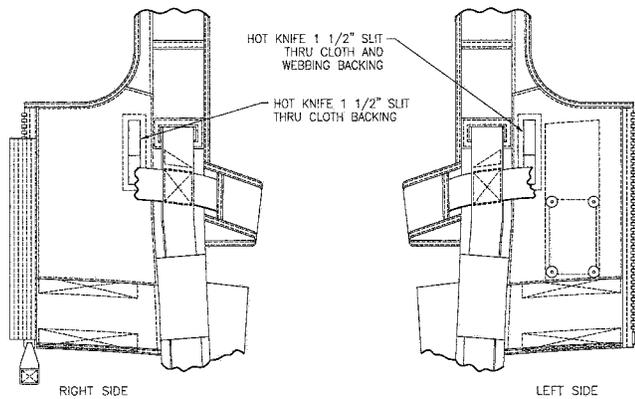


Figure 33. Front Attachment Strap Slots

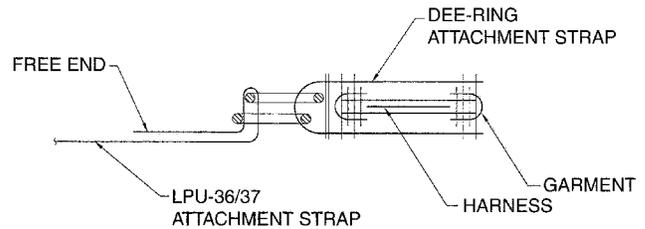


Figure 35. Proper Routing of Attachment Straps

b. Secure the collar vertical straps to the harness horizontal straps or riser keepers (if installed) (Figure 34).

c. With helmet on, place the LPU-36/37 around the aircrew's neck and close the Fastex fastener on the front of the LPU-36/37. With the aircrew holding the front collar lobes in place, fold the back collar lobe over the aircrew's shoulder. The inside of the collar lobe should be close, but not touching, the aircrew's helmet while looking up (checking 12). The aircrew should have complete range of motion at this point. If not, adjust the gap between the back collar and neck.

d. While aircrew continues to hold collar in place, route the back attachment straps through the back guide webbing, crossing the straps and thread them through the Dee-Rings (Figure 35).

e. Pull the free end of the back attachment straps through the Dee-Rings and remove all slack. All slack has been removed if the back portion of the collar remains conformed to the radius of the shoulder and the front portion of the collar has not moved while being held in place. Tie a half hitch in each back attachment strap to prevent slippage. Do not tack at this time.

f. Thread the LPU-36/37 front attachment straps through the harness chest strap slots/extended slots on the garment. Route the LPU-36/37 attachment straps over the harness vertical main sling webbing and insert through outside opening of harness garment. Thread front attachment straps thru Dee-Rings from the inside of harness. Remove all slack from attachment straps and tie a half hitch. If the front collar lobes are lower than the chest strap slots in the garment, it will be necessary to loosen the back attachment straps and pull the back lobe down. All slack is removed when the

LPU-36/37 is not able to move or pull away from the body and complete range of motion is maintained (Figure 36).

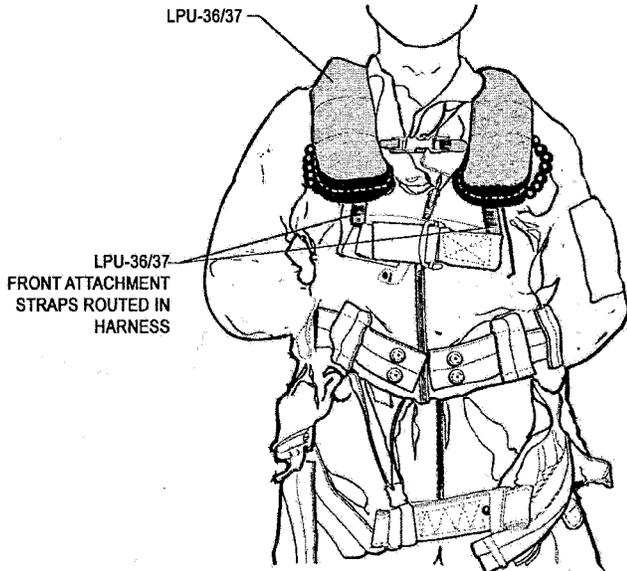


Figure 36. Front Attachment Strap Routing

g. Ensure that half hitches are present on all four attachment straps and remove harness from aircrew. Without disturbing adjustments, tack free end of attachment strap, above half hitch, with two-turns of waxed size 3 cord (Figure 37).

**CAUTION**

Do not trim excess LPU-36/37 attachment straps.

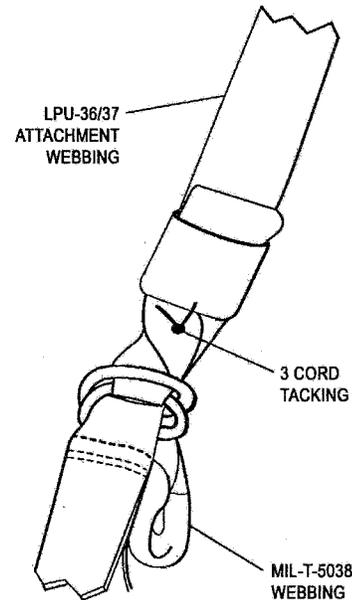


Figure 37. Tack Free End Above Larks Head

h. Secure excess front and back attachment strap webbing by folding and placing them in the elastic keepers.

i. Attachment straps should be re-inspected and adjusted (if necessary) after 5-10 sorties.

**26. SDU-5/E DISTRESS LIGHT LANYARD FABRICATION.**

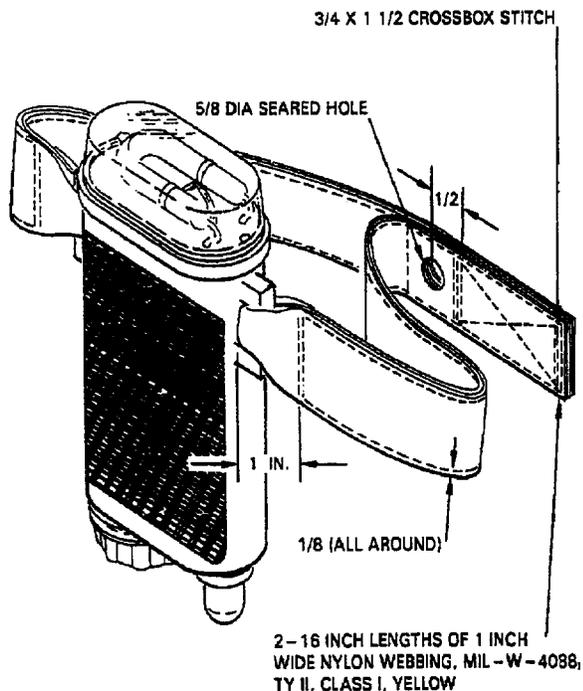
Materials Required

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

a. Cut two lengths of webbing 16-in. and sear ends.

b. Pass one end of webbing thru slot on the distress light. Folding the webbing in half, sew all around 1/8-in. from edge and 1-in. from slot on the distress light. Do the same on the opposite side of light (Figure 38).

c. Join both pieces of webbing together and sew a crossbox stitch  $3/4 \times 1 \ 1/2$ -in. Sear a  $5/8$ -in. diameter hole  $1/2$ -in. from crossbox stitch and box stitch around  $5/8$ -in. diameter seared hole (Figure 38).



6.2-5010

Figure 38. Distress Light Lanyard

**27. POCKET HOOK BLADE AND SNAP BLADE MC-1 KNIFE LANYARD FABRICATION.**

Materials Required

Specification or Part Number

V-T-295

Nomenclature

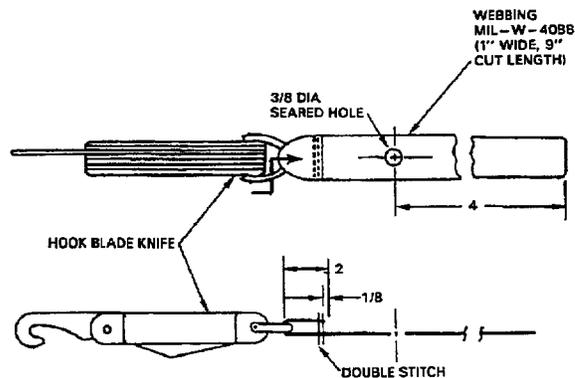
Thread, Nylon  
Size E, Type I or II  
Class A

MIL-W-4088

Webbing, Nylon  
Type II, 1-in. Yellow  
Class 1, 1A or 2

a. Cut and sear a 9-in. length of webbing.

b. Pass one end of webbing thru knife D-Ring, a 2-in. length and double stitch  $1/8$ -in from edge (Figure 39).



6.2-5011

Figure 39. Attachment of Hook Blade Knife Lanyard

c. Sear a  $3/8$ -in. diameter hole in webbing 4-in. from end (Figure 39).

**INTERMEDIATE MAINTENANCE**

**REPAIR PROCEDURES**

**PCU-33/P SERIES PARACHUTE RESTRAINT HARNESS ASSEMBLY**

**PART NO. 829AS100**

**List of Effective Work Package Pages**

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2 thru 4 . . . . .	8	13 . . . . .	8	16 . . . . .	8		

**Reference Material**

Common Repairs . . . . .	WP 004 00
Introduction . . . . .	WP 002 00
Organizational and Intermediate Maintenance, Description and Principles of Operation, PCU-33/P Series Parachute Restraint Harness Assembly . . . . .	WP 008 00
Organizational Maintenance, Repair Procedures, PCU-33/P Series Parachute Restraint Harness Assembly . . . . .	WP 008 01
Parachute Loft Requirements/Administration . . . . .	WP 003 00
Support Equipment . . . . .	WP 005 00

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**Record of Applicable Technical Directives**

<u>Type/No.</u>	<u>Date</u>	<u>Title and ECP No.</u>	<u>Date Inc.</u>	<u>Rescission Date</u>
ACC 623	14 Feb 96	Riser Restraint Keeper (RAMEC P-08-95)	1 Jul 96	31 Dec 2003
ACC 633	14 Sep 98	Replacement of LPU-23/P Floata- tion Device with the Low Profile Floataion Collar (LPFC) On PCU-33/P (Series) and PCU-56/P (Series) Integrated Parachute Restraint Harnesses (96A30) (ECP-16341R1)	1 Jan 00	31 Dec 2006

**DELETED**

**1. INTRODUCTION.**

2. This work package (WP) contains instructions for intermediate level repair to ensure that the harness remains in ready-for-issue (RFI) status.

3. When performing repairs detailed in this WP, do per 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. To ensure conformity, all repair/fabrication work shall be carefully inspected and compared to applicable instructions at the completion of work.

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

**4. HARNESS ASSEMBLY.**

**5. HOOK AND PILE FASTENER TAPE TO CHEST STRAP REPLACEMENT.**

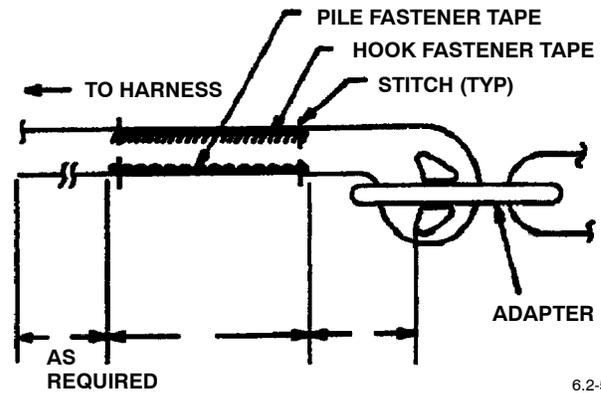
Materials Required

Specification or Part Number	Nomenclature
MIL-F-21840	Fastener Tape, Hook, 1 1/2-in. Wide, Type II, Class 1
MIL-F-21840	Fastener Tape, Pile, 1 1/2-in. Wide, Class 1
V-T-295	Thread, Nylon, Size E, Type I or II, Class A

**NOTE**

Placement of the hook and pile fastener tape may be reversed (aircrew option).

- Properly fit the harness to aircrew.
- Mark chest strap webbing 1-in. from friction bar on both the free end and portion attached to harness (Figure 1).
- Attach a 2-in. strip of hook fastener tape on outer surface of chest strap and a 2-in. strip of pile fastener tape on inner surface of free end. Machine stitch around edges of hook and pile fastener tape. Backstitch a minimum of 1/2-in. Leave a minimum of 10-in. of webbing from chest strap friction bar after fitting aircrew. Trim and sear. Avoid forming sharp edges while hot knifing and searing (Figure 1). (QA)



6.2-5563

**Figure 1. Replacement of Hook and Pile Fastener Tape to Chest Strap**

d. When donning, aircrew shall align hook and pile fastener tape patches and press together firmly.

**6. HOOK AND PILE FASTENER TAPE TO HARNESS ANTI-ROTATION STRAPS REPLACEMENT.**

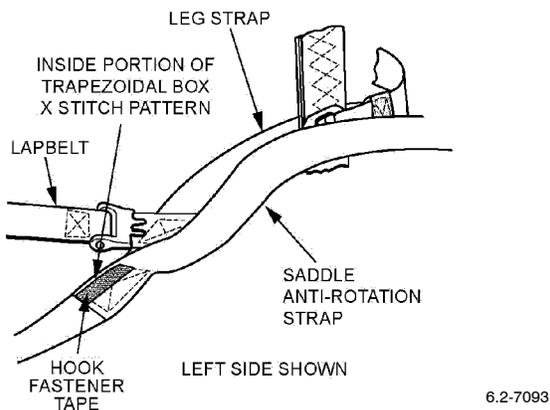
Materials Required

Specification or Part Number	Nomenclature
MIL-F-21840	Fastener Tape, Hook, 1-in. Wide, Type II, Class 1
MIL-F-21840	Fastener Tape, Pile, 1-in Wide, Type II, Class 1
V-T-295	Thread, Nylon, Size E, Type I or II, Class A

**NOTE**

Placement of the hook and pile fastener tape may be reversed (aircrew option).

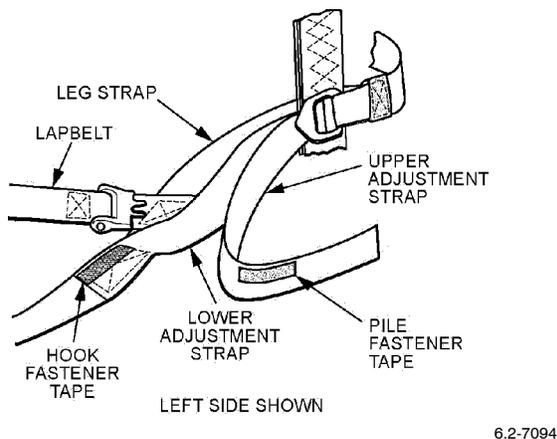
- Carefully remove old hook and pile.
- Lay each hook fastener tape lengthwise over inside portion of each 4-in. Trapezoidal box-X stitch pattern that attaches anti-rotation adjustment straps to left and right leg straps. Cut top narrow end of each hook fastener tape to match angled end of each trapezoidal box-X stitch pattern. Sew hook fastener tape over inside portion of each trapezoidal box-X stitch pattern (Figure 2).
- Route free ends of adjustment straps thru their respective reversible adapter.



**Figure 2. Lay Each Hook Fastener Tape Lengthwise**

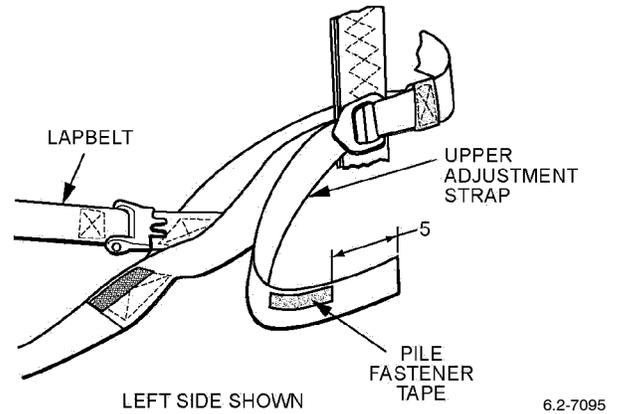
d. The aircrew shall don harness, adjust chest strap and anti-rotation adjustment straps to a snug but not tight position. Lay free ends of upper portions of adjustment straps flat over lower portions of adjustment straps. On bottom side of each upper adjustment strap, mark location of hook tape.

e. Sew each pile fastener tape within stitch pattern marks made on upper adjustment straps (Figure 3).



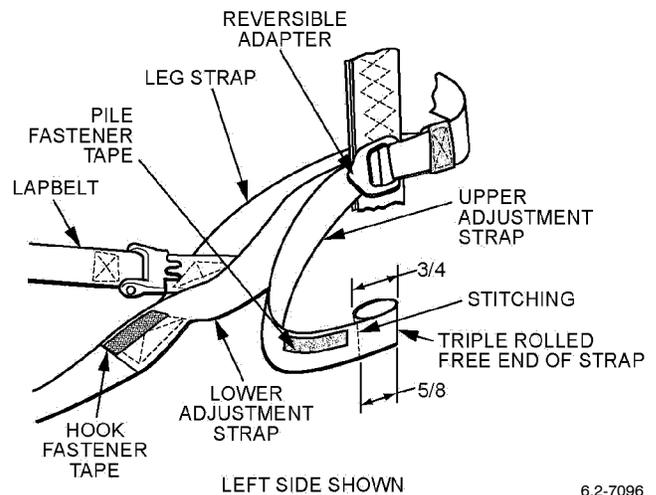
**Figure 3. Sew Pile Fastener Tape to Adjustment Straps**

f. Measure 5-in. from ends of pile fastener tape toward free ends of adjustment straps and mark. Use a hot knife to sear away excess strap at 5-in. marks (Figure 4).



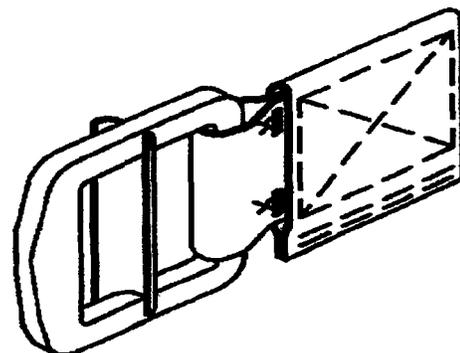
**Figure 4. Measure 5-in. From Ends of Pile Fastener Tape**

g. Triple roll 3/4-in. of free end of each adjustment strap to side opposite that of pile fastener tapes and sew together with single row of stitchings 5/8-in. from rolled end (Figure 5).



**Figure 5. Triple Roll 3/4-in. of Free End**

h. Tack reversible adapter on sleeve side thru webbing and as close as possible to hardware. Tack with one turn of size FF thread doubled and waxed; tie off (Figure 6).



**Figure 6. Tack Reversible Adapter**

i. When donning harness, aircrew shall cinch adjustment straps to a snug position and shall then align hook and pile tapes, pressing firmly together to retain adjustment straps in place.

**7. SADDLE ANTI-ROTATION STRAP REPLACEMENT.**

Support Equipment Required

Hot Knife

Materials Required

V-T-295

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

PIA-W-4088

Webbing, Nylon,  
Type III,  
25 1/2-in.

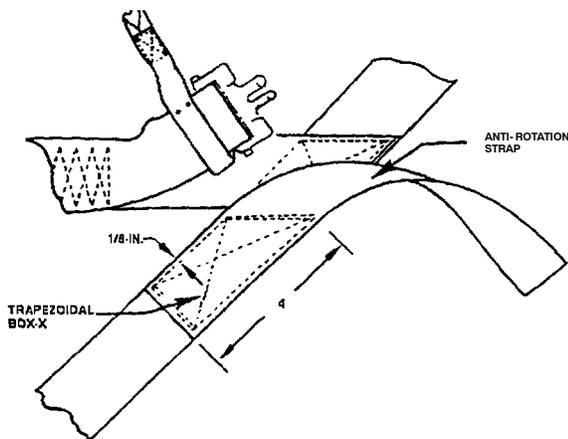


Avoid damaging harness material when removing the old anti-rotation straps.

a. Remove the trapezoidal box-X stitchings from the anti-rotation strap carefully.

b. Using a hot knife cut two lengths of nylon webbing 25 1/2-in. long.

c. From the bottom outboard points where the lap belt attaches to the left and right leg straps, measure down 4-in. toward the saddle and mark (Figure 7).

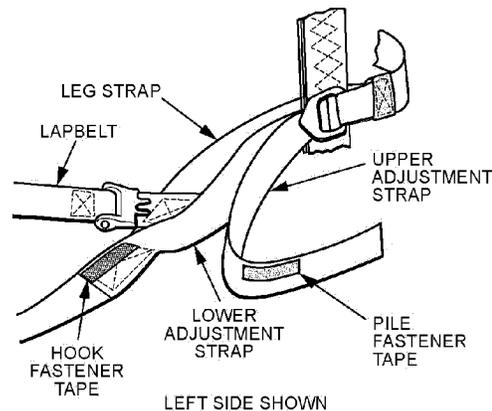


6.2-7096B

**Figure 7. Attachment Point for Left and Right Leg Straps**

d. Position the new left leg strap, seared end of the adjustment strap on the 4-in. mark with the free end of the strap toward the lap belt strap, sew new strap in place, with a trapezoidal box-X stitch pattern. Follow the same procedure for the right leg (Figure 7).

e. Route free end of the anti-rotation strap thru the respective friction adapter (Figure 8).



6.2-7094

**Figure 8. Routing of Anti-Rotation Strap**

f. The aircrew shall don the restraint harness and adjust the chest strap and anti-rotation strap for a snug (but not tight) fit. Position the free ends of the adjustment strap flat over the lower attachment ends of the adjustment straps.

g. Mark on each upper strap the corresponding location of the hook fastener tape attached to the lower strap.

h. For attachment of the hook and pile fastener tape refer to Paragraph 6.

i. Measure 5-in. from ends of the pile fastener tape towards the free ends of the adjustment straps. Use a hot knife to cut any excess adjustment strap webbing at the 5-in. marks.

j. Triple roll 3/4-in. of each free end of the adjustment straps to the inboard side, opposite that of the pile fastener tape and sew together with a single row of stitching 5/8-in. from rolled end. Backstitch both ends of the strap 1/2-in. (Figure 5).

**8. SADDLE ANTI-ROTATION STRAP ADAPTER TAB REPLACEMENT.**

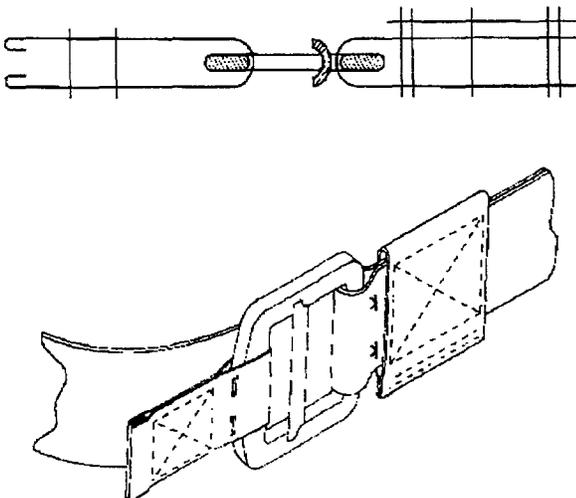
Materials Required

Specification or Part Number	Nomenclature
PIA-W-4088	Webbing, Nylon, Yellow, 1-in. Wide, 5-in. Long, Type II, Class 1, 1A or 2
V-T-295	Thread, Nylon, Size E, Type I or II, Class A
V-T-295	Thread, Nylon, Size FF, Type I or II, Class A

**NOTE**

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

- a. Remove old nylon tape from cinch adapter.
- b. Cut a length of tape 5-in. and sear ends.
- c. Pass end of nylon webbing thru friction adapter, turn ends under 1/4-in. and sew with a 1-in. box-X stitch, 1/8-in. from edge (Figure 9).



6.2-7090

**Figure 9. Tacking of Anti-Rotation Strap Tab to Adapter**

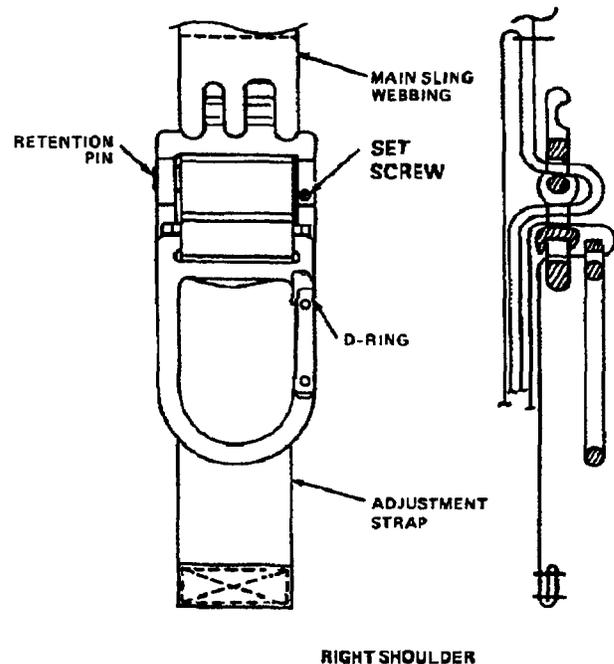
- d. Tack webbing to center and as close as possible to friction adapter to prevent movement. Tack with one turn of size FF thread, doubled and waxed; tie off (Figure 9).

**9. GATED D-RING REPLACEMENT.**

Materials Required

Specification or Part Number	Nomenclature
823AS100-1	D-Ring Assembly, Snaplink, Rescue (Gated D-Ring)
- or -	
1979AS975-1	Ring Assembly, Snaplink, Rescue (Gated D-Ring)
V-T-295	Thread, Nylon, Size E, Type I or II, Class A

- a. Remove stitching at end of main sling webbing, using care not to damage webbing.
- b. Remove webbing main sling webbing from lower portion of damaged gated D-Ring.
- c. Install replacement gated D-Ring (gate inboard) and reeve back thru adapter (Figure 10).
- d. Leave 8-in. of webbing from bottom of canopy release adapter to end of webbing, cut and sear end. Avoid forming sharp edges while hot knifing and searing. Fold free end of webbing and box-X stitch with size E thread, backstitch 1/2-in. Folded stitched webbing must face outward (Figure 10). (QA)



6.2-5590

**Figure 10. Replacement of Gated D-Ring**

**10. CHEST STRAP ADAPTER RELOCATION.**

Materials Required

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

a. Center the chest strap adapter. If off centered to the right, do as follows:

- (1) Properly fit harness to aircrew per WP 008 00.
- (2) Mark desired location for adapter.

(3) Carefully remove existing stitching. From center mark, allow 3-in. and sear off excess webbing. Position adapter in place and machine stitch (Figure 11).

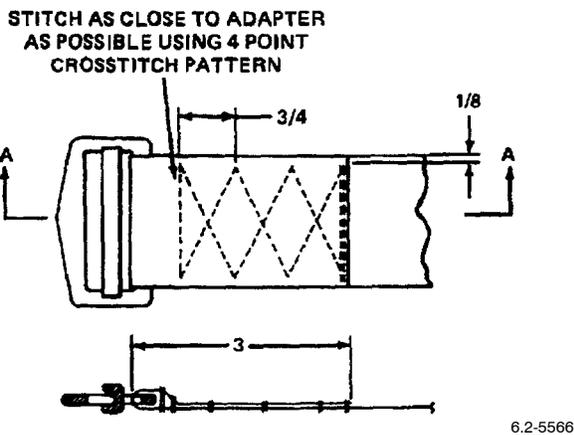


Figure 11. Relocation of Chest Strap Adapter

**11. CHEST STRAP EXTENSION FABRICATION.**

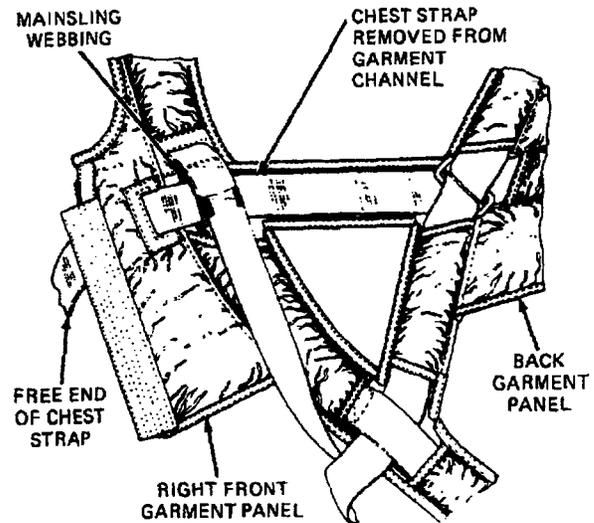
Materials Required

Specification or Part Number	Nomenclature
PIA-W-4088	Webbing, Nylon, Type XXVII, Class I or IA
V-T-295	Thread, Nylon, Size 6, Type I or II, Class A

**NOTE**

This extension is applicable to both the chest strap and the chest strap adapter.

a. Remove free end of chest strap from garment channel located between the right front and back panels. Reroute chest strap so that it passes thru the channel in the mainsling webbing and the slit in front garment panel (Figure 12).

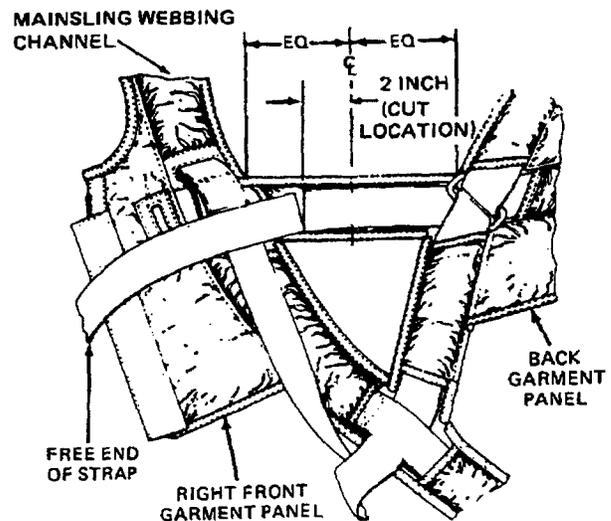


6.2-5567A

Figure 12. Remove Free End of Chest Strap

b. Adjust harness on aircrew and mark center of chest strap between the right front and back garment panels. (QA)

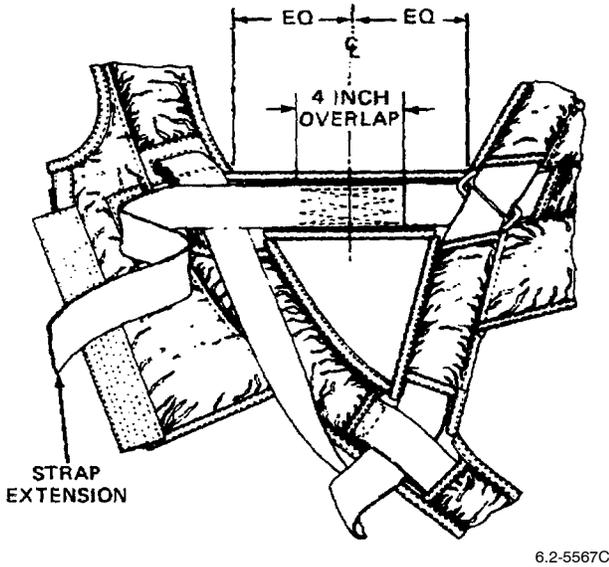
c. After aircrew has removed harness, lay out harness and cut chest strap 2-in. from centerline toward free end of chest strap (Figure 13). (QA)



6.2-5567B

Figure 13. Layout Harness and Cut Chest Strap

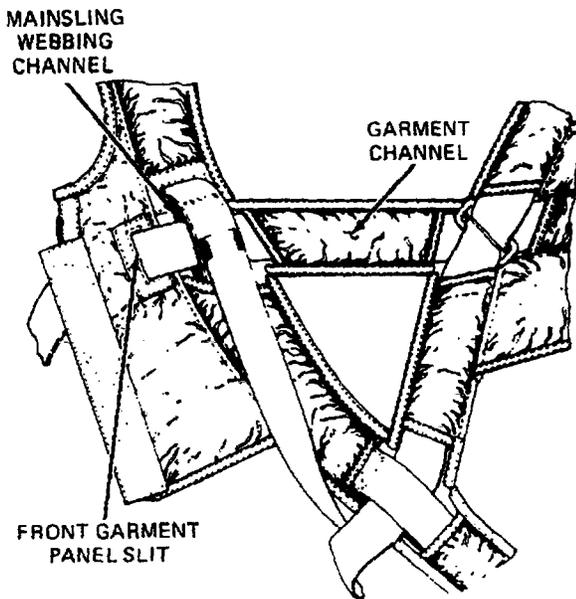
d. Obtain a length of webbing 12-in. longer than the portion of the chest strap previously removed. Sew new webbing to the end of chest strap remaining on harness. Overlap webbing 4-in. stitch in a four-point W-W pattern (Figure 14). (QA)



6.2-5567C

Figure 14. Obtain Length of Webbing 12-in. Longer

e. Insert modified chest strap into same garment channel as removed, thru channel in mainsling and thru slit in front garment panel (Figure 15).



6.2-5567D

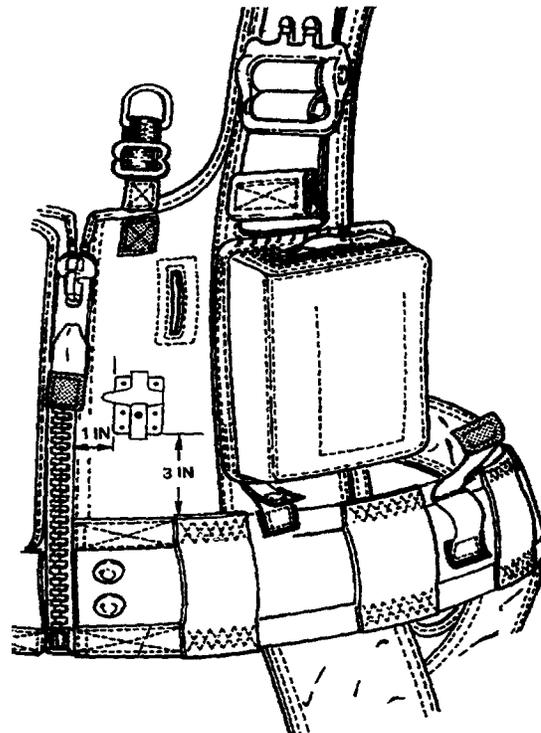
Figure 15. Insert Modified Chest Strap

**12. MOUNTING BRACKET REPLACEMENT FOR DILUTER DEMAND REGULATOR.**

Materials Required

Specification or Part Number	Nomenclature
67A100C30-1	Bracket, Mounting
AN470AD-4-8	Rivets (6)
PIA-W-4088	Webbing, Nylon, Type IV, Class 1 or 1A
MIL-C-12369	-or- Cloth, Ballistic Class I

- Remove rivets from mounting bracket.
- Center mounting bracket 3-in. above harness securing belt and 1-in. away from zipper (Figure 16).
- Install six rivets. (QA)
- Smooth rivet heads flush with backing plate.



0803-14

Figure 16. Replacement of Mounting Bracket

e. Make proper entries on Aircrew Personal Equipment Record (OPNAV 4790/159). (QA)

**13. MOUNTING BRACKET REPLACEMENT FOR ON BOARD OXYGEN GENERATING SYSTEM (OBOGS).**

Materials Required

Specification or Part Number	Nomenclature
829AS165-2	Kit Bracket Assembly, Oxygen Regulator
829AS159-2	Bracket Assembly Oxygen Regulator (Component of 829AS165-2)
829AS163-1	Oxygen Regulator Mounting Plate (Component of 829AS165-2)
MS20427F4-9	Rivet
829AS152-13	Oxygen Regulator and Hose Retention Pocket
MMM-A-121	Adhesive
MS27983-1	Snap, Fastener, Button
MS27983-2N	Socket, Snap Fastener
MIL-F-21840	Fastener Tape, Hook, 2-in. Type II, Class 1
V-T-295	Thread, Nylon, Size E, Type I or II, Class A
PIA-W-4088	Webbing, Nylon, Type IX

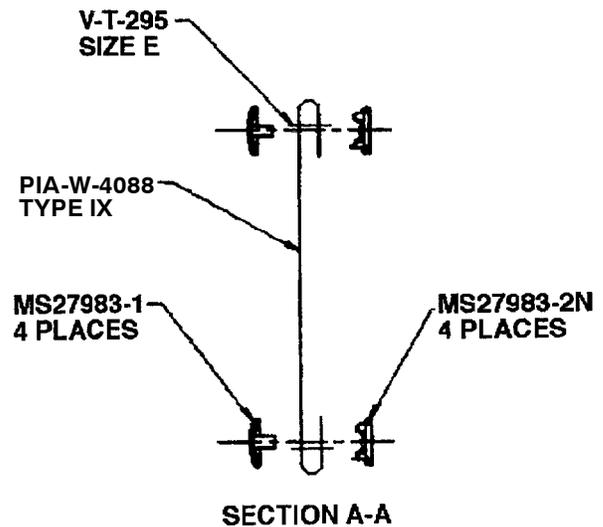
a. If require, remove the OBOGS bracket assembly from the harness assembly.

**CAUTION**

Avoid damaging harness material when removing the rivets.

b. Hot knife one piece of webbing 7-in. long, and sear both ends. Avoid forming sharp edges after hot knifing the ends.

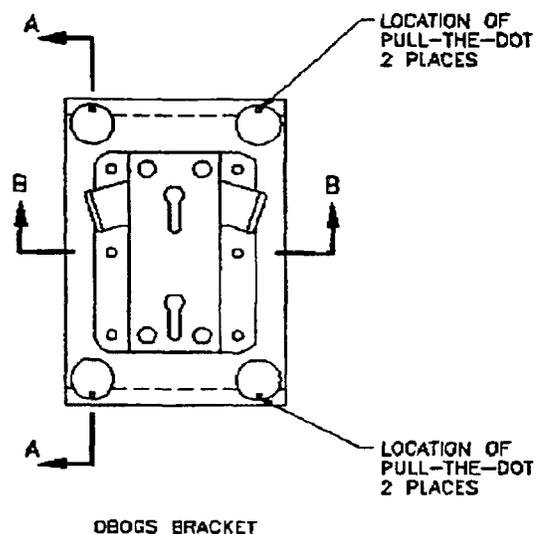
c. Fold both ends, top and bottom, about 1/2-in. and stitch 1/4-in. from folded edges. Backstitch 1/2-in. using size E thread (Figure 17).



6.2-5512

Figure 17. Fold Both Ends

d. Position the OBOGS bracket centered lengthwise on one side of the 7-in. piece of webbing and the mounting plate on the back side (Figure 18).



6.2-5512C

Figure 18. OBOGS Bracket

e. Rivet the Bracket, webbing and plate together. Using rivets (Figure 19).

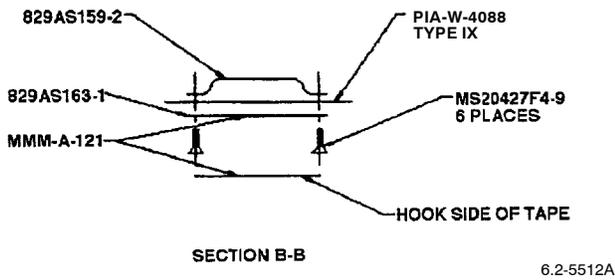


Figure 19. Rivet Backing, Webbing, and Plate Together

f. Use template to center the four snap fasteners and install snap fasteners (Figure 20).

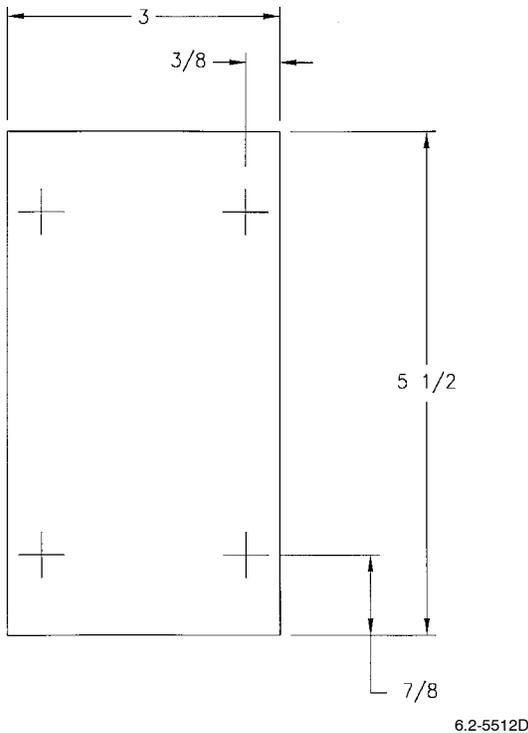
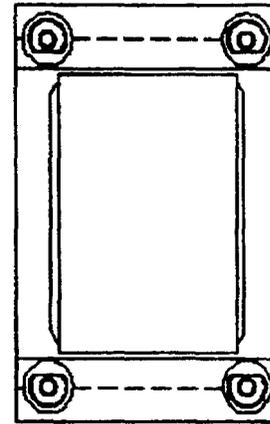


Figure 20. Template

**NOTE**

The pull-the-dots on the buttons shall be located per Figure 18.

g. Cut a 3-in. length of 2-in. wide hook fastener tape. Apply a thin layer of MMM-A-121 adhesive to the back side of the hook fastener tape and the mounting plate, between the six rivets. After applying the adhesive, allow it to become tacky. Center the 2-in. width of the hook fastener tape to the 2 1/4-in. width of the mounting (back) plate (Figure 21).



BACK VIEW

Figure 21. Back View

**14. REMOVABLE MINI REGULATOR REPLACEMENT.**

Materials Required

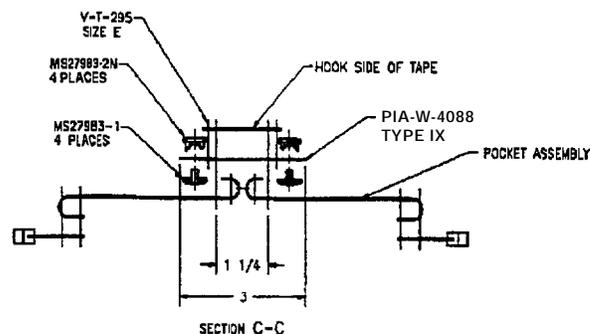
Specification or Part Number	Nomenclature
829AS165-2	Kit Bracket Assembly, Oxygen Regulator
829AS159-2	Bracket Assembly Oxygen Regulator (Component of 829AS165-2)
829AS163-1	Oxygen Regulator Mounting Plate (Component of 829AS165-2)
MS20427F4-9	Rivet, Solid
829AS152-13	Oxygen Regulator and Hose Retention Pocket
MMM-A-121	Adhesive
MS27983-1	Snap, Fastener, Button
MS27983-2N	Socket, Snap Fastener

Specification or Part Number Nomenclature

MIL-F-21840 Fastener Tape, Hook, 2-in. Wide, Type II, Class 1

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

PIA-W-4088 Webbing, Nylon, Type IX, Class 1, 1A or 2



6.2-5512G

a. Remove the buttons and sockets from the mini regulator pocket. Avoid damage to the pocket.

b. Remove the hook fastener tape from the mini regulator pocket, avoid damage to the pocket.

c. Cut a 4 1/2-in. length of 2-in. wide hook fastener tape and position lengthwise on one side of the webbing. Stitch the hook fastener tape to the webbing, using a box-X stitch, 1/8-in. from edge, using size E thread.

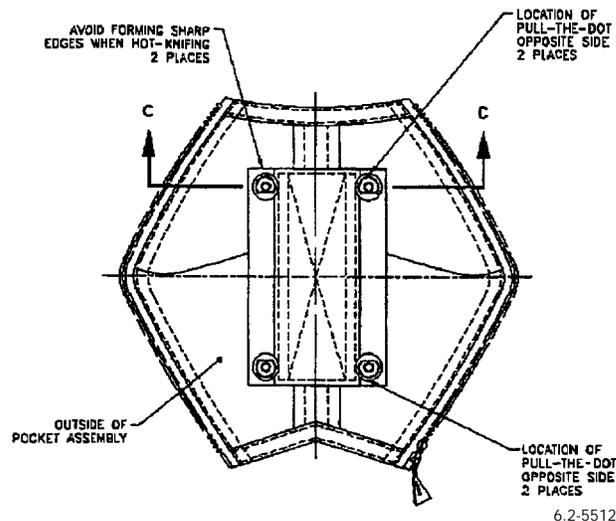
d. Hot knife one piece of webbing 4 1/2-in. sear both ends. Avoid forming sharp edges.

e. Use template to center the four snap fasteners (Figure 20).

**NOTE**

The pull-the dots on the buttons shall be located per Figure 18.

f. Position the webbing, centered vertically on the outer back side of the mini regulator pocket, stitch webbing to the pocket, using about 1 1/4 x 4 1/4-in. box-X stitch, with size E thread (Figure 22).



**Figure 22. Positioning of Webbing**

**15. REMOVEABLE OBOGS AND MINI REGULATOR PILE TAPE FASTENER ATTACHMENT.**

**Materials Required**

Specification or Part Number	Nomenclature
MS27983-3	Stud, Snap Fastener
MS27980-10B	Snap, Fastener, Eyelet
MIL-F-21840	Fastener Tape, Pile, 2-in. Wide, Type II, Class 1
PIA-W-4088	Webbing, Nylon, Type IX, Class 1, 1A or 2

**NOTE**

Ensure the addition of backing, webbing material is accomplished prior to proceeding.

a. Cut 2 pieces of 2-in. wide pile tape fastener 4 1/2-in long. Overlap the two lengths until a 3-in. width is obtained and sew together, using size E thread, back stitch 1/2-in.

b. Position the pile tape fastener, vertically on the harness outside left chest panel. The specified vertical position shall be directed by the aircrew. Stitch pile tape fastener to the harness panel, using size E thread, sew 1/8-in. from edge, back stitch 1/2-in.

c. Use template to center the four snap fasteners location per Figure 20.

**NOTE**

When combined with the removable OBOGS bracket and the removable mini regulator, all four pull-the-dot snap fasteners must be fully engaged.

d. Make proper entries on Aircrew Personal Equipment Record (OPNAV 4790/159). (QA)

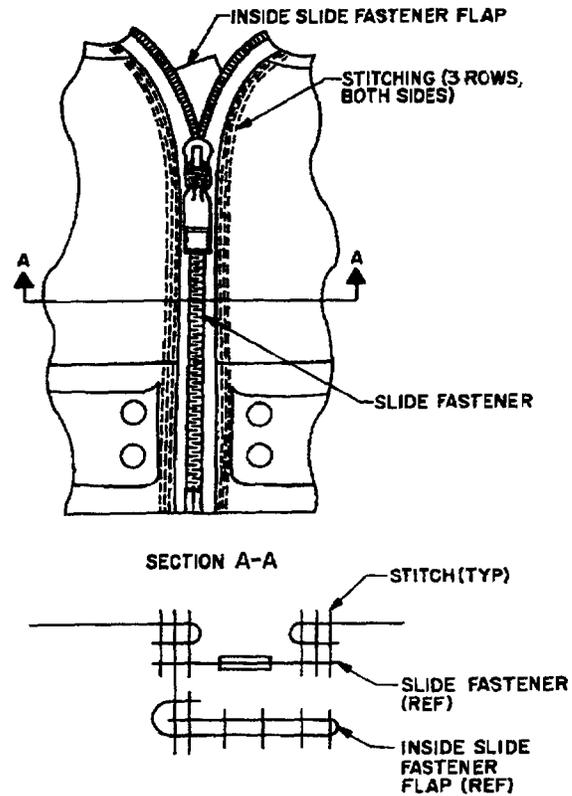
**16. SLIDE FASTENER REPLACEMENT.**

**Materials Required**

Specification or Part Number	Nomenclature
V-F-106	Slide Fastener, Type IV, Style #8, Size MH, Brass with Black Chemical Finish, Sage Green Tape Available from: Lenzip Manufacturing 1900 W. Kinzie St. Chicago, IL 60622-6243 Style #1031
V-T-295	Thread, Nylon, Size E, Type I or II, Class A

- a. Remove entrance slide fastener.
- b. Remove two hooks and eyelets at entrance.
- c. Remove damaged slide fastener and protective flap at least 1-in. below lapbelt retention system. Retain protective flap for reuse.
- d. Attach replacement slide fastener using size E thread. Slide fastener shall not run over edges of fabric panels (Figure 23). (QA)

- e. Resew protective flap back in place.
- f. Replace hooks and eyelets per WP 008 01.



6.2-5592

**Figure 23. Replacement of Slide Fastener**

**17. SLIDER PULL THONG REPLACEMENT.**

**Materials Required**

Specification or Part Number	Nomenclature
PIA-T-5038	Tape, Nylon, Type III, Class 1 or 1A, 3/4-in. Wide
MIL-F-21840	Fastener Tape, Pile, 1-in., Wide Class 1
MIL-F-21840	Fastener Tape, Hook, 1-in. Wide, Type II, Class 1
V-T-295	Thread, Nylon, Size E, Type I or II, Class A

- a. Remove and discard worn pull thong.

- b. Cut 4 3/4-in. length nylon tape. Sear both ends.
- c. Weave new pull thong thru eye in slider pull tab. Place sides together with ends even and stitch together at end using 3/4-in. long box stitch pattern including a 3/4-in. length of 1-in. pile fastener tape (Figure 24).



6.2-5593

Figure 24. Replacement of Slider Pull Thong

**18. REPAIR OF HARNESS CLOTH.**

Materials Required

Specification or Part Number	Nomenclature
MIL-C-508	Cloth, Oxford, Nylon
V-T-295	Thread, Nylon, Size E, Type I or II, Class A

**WARNING**

Do not stitch thru harness webbing.

- a. Cut a patch sufficiently large to cover damage and overlap 1-in. on all sides.
- b. Sear edges of patch and damaged area.
- c. Fold patch under 1/4-in. on all sides and stitch in place, using size E thread 1/8-in. from fold in patch. Backstitch 1/2-in. minimum. (QA)
- d. Turn suit inside out and stitch 1/8-in. from edge of damage. Backstitch 1/2-in. minimum. (QA)

**19. SURVIVAL VEST TAB AND DEE-RING REPLACEMENT.**

Materials Required

Specification or Part Number	Nomenclature
MIL-R-3390	Dee-Ring
PIA-T-5038	Tape, Nylon, Type IV, Class 1 or 1A
V-T-295	Thread, Nylon, Size E, Type I or II, Class A

- a. Cut a 5 1/2-in. length of nylon tape and sear ends.
- b. Reeve nylon tape thru Dee-Ring and fold in half. Sew tape together with double row of stitching 3/8-in. from Dee-Ring. Backstitch each end 1/4-in. and sear ends of tape.

**NOTE**

The Dee-Ring and tab should be located above lapbelt.

- c. Place Dee-Ring and tab around harness groin strap webbing and sew ends together with double row of stitching. Ensure that stitching does not pass thru harness webbing. Backstitch each end 1/4-in. (Figure 25). (QA)

**20. FLASHLIGHT RETENTION STRAPS REPLACEMENT.**

Materials Required

Specification or Part Number	Nomenclature
MIL-W-5664	Webbing, Textile,Elastic, Type I, Class 2, 19-in. long

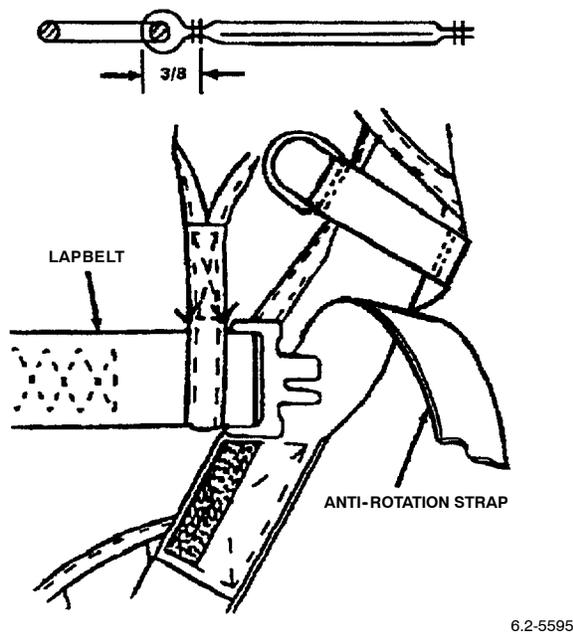
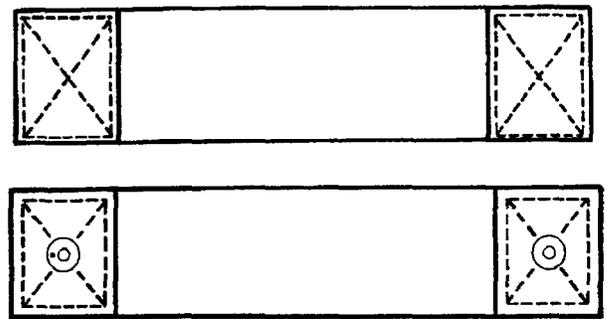


Figure 25. Attachment of Survival Vest Dee-Ring



6.2-7091

Figure 26. Retention Strap and Installation of Snaps

Specification or Part Number	Nomenclature
PIA-T-5038	Tape, Nylon, Type III, Class 1 or 1A
PIA-W-4088	Webbing, Nylon, Type I, Class 1, 1A or 2
MS27983-1	Snap, Fastener, Button
MS27983-2N	Socket, Snap Fastener
MS27983-3	Stud, Snap Fastener
MS27983-4	Snap, Fastener, Eyelet
V-T-295	Thread, Nylon, Size E, Type I or II, Class A

- a. Cut two pieces of elastic webbing 9 1/2-in.
- b. On each piece of webbing, fold back 1 1/4-in. on each end and stitch this doubled over end using 1-in. wide box-X stitch. Stitches should come within 1/8-in. of edge of webbing (Figure 26). (QA)

c. At intersection of diagonal stitch on box-X stitch of each piece of webbing, install a cap/socket on one fold and a stud/post on the opposite fold. Ensure these are installed so they will snap around the gooseneck flashlight (Figure 26).

d. Flashlight will be mounted on the rightside of restraint harness between the strobe light and the radio/knife pocket. Mounting will be accomplished to ensure base of flashlight is flush with the bottom of the radio/knife pocket. Mount so stud/eyelet is on same side as the strobe light pocket.

e. Determine center of first piece of elastic webbing. Place top of one piece of elastic webbing 2 1/4-in. below top of radio/knife pocket upper edge binding. Ensure stud/post is facing the strobe light pocket.

f. Stitch center of elastic webbing with four continuous rows of vertical stitches about 1/16-in apart, directly over radio/knife pocket edge binding. Stitch no closer than 1/8-in. from edge of webbing.

**WARNING**

Do not stitch thru harness webbing straps.

g. Determine center of second piece of elastic webbing. Place top of second piece of elastic webbing 1 3/4-in. below the bottom of the first piece.

h. Cut a piece of tape 10 1/2-in. long and turn under 1-in. and align tape with top binding tape of radio/knife pocket, sew around the edge of the tape. Bottom end of tape is turned under 1/2-in. in aligning of flashlight retention straps, sew 1/8-in. around edge of tape, back-stitch 1/2-in. (Figure 27). (QA)

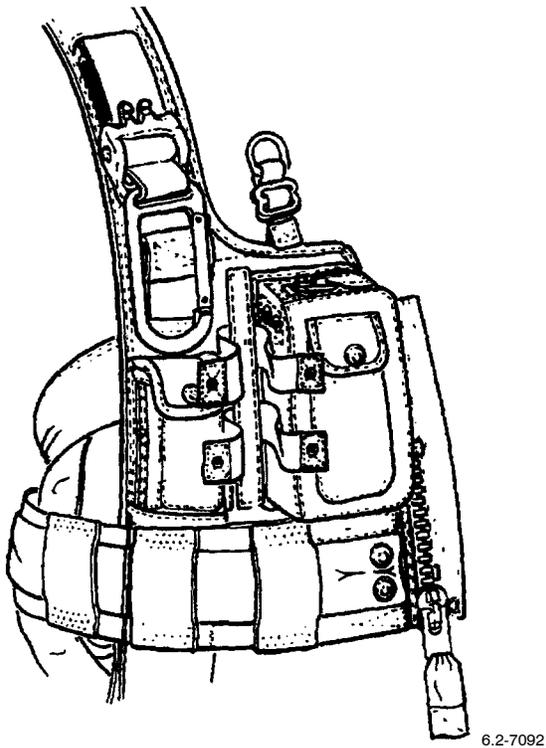


Figure 27. Attachment of Flashlight Holder

i. Top elastic webbing should surround flashlight between gooseneck and top of light switch. Bottom elastic webbing should surround flashlight above upper lip of battery access cover (Figure 27). (QA)

**21. SURVIVAL STOWAGE POCKETS REPLACEMENT.**

Material Required

Specification or Part Number	Nomenclature
V-T-295	Thread, Nylon, Size E, Type I or II, Class A
V-T-295	Thread, Nylon, Size 6, Type I or II, Class A
PIA-T-5038	Tape, Nylon, Type III, Class 1 or 1A
MIL-F-21840	Fastener Tape, Pile, 1-in. Wide, Class 1
MIL-F-21840	Fastener Tape, Hook, 1-in. Wide, Type II, Class 1

**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.

**NOTE**

Survival item pockets are authorized on all size harnesses. A local determination of acceptability must be made on extra small, small short harnesses. Custom made harnesses must use a survival vest. Additionally, small statured aircrew who have difficulty with the placement of the chest strap, must use a survival vest vice pockets.

- a. Inspect backing material for possible replacement.
- b. Install radio/knife pocket on right side of harness, align the bottom of the pocket with harness securing webbing for the LPU and along slide fastener fold line (Figure 28). (QA)

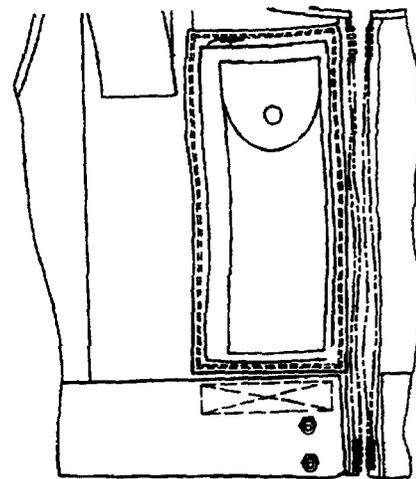


Figure 28. Attachment of Radio/Knife Pocket

**WARNING**

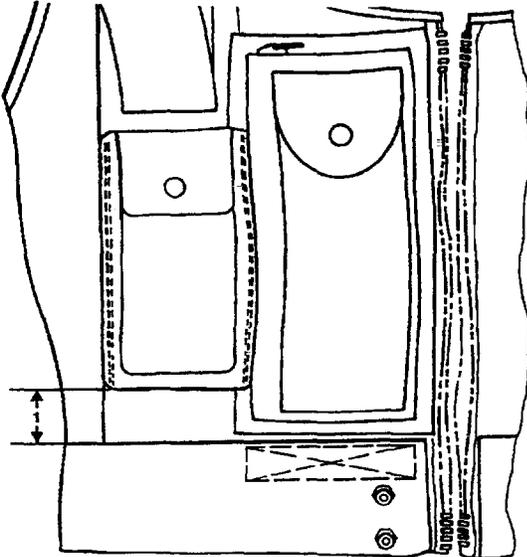
Do not stitch thru harness shoulder straps or thru fabric channels that encase the straps. Do not stitch thru the chest strap.

- c. Sew a double row of stitching around pocket 1/8-in. from edge. Do not stitch into channel area.

**NOTE**

Bound edges of the strobe light pocket and radio/knife pocket may overlap on small size harnesses.

d. Install strobe light pocket, align pocket binding tape with channel fold line, align bottom of strobe light pocket 1-in. above edge of webbing. Overlap pocket binding tape on top of radio/knife pocket binding tape and double stitch 1/8-in. from edge (Figure 29). (QA)



6.2-7087

Figure 29. Attachment of Strobe Light Pocket

**NOTE**

Do not stitch over webbing channel.

e. Cut two pieces tape 4 1/2-in. also two pieces hook and pile tape. Sew one piece hook tape to nylon tape in a box stitch 1/8-in. from edge, turn nylon tape over and sew pile tape on opposite end in same manner.

f. (OBOGS) Position of oxygen securing tab(s) to life preserver securing belt 1/4-in. from top and located in a position for each aircrew's preference. To keep the oxygen hose from obscuring access to the left aircraft console.

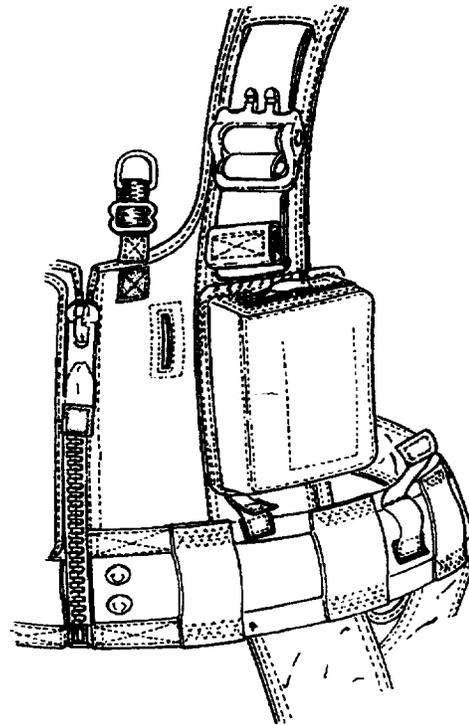
**NOTE**

Additional tabs may be added as required to obtain a comfortable routing of oxygen hose.

g. Attach survival items stowage pocket to harness, align pocket edge 4 1/4-in. from edge front panel material (medium size harness and smaller align on seam). Sew a double row of stitching 1/8-in. from edge of pocket, sew pocket down on webbing channel fold line (Figure 30). (QA)

h. (OBOGS and Diluter Demand) Attach survival items stowage pocket to harness, align pocket edge 4 1/4-in. from edge front panel material (medium size harness and smaller align on seam). Sew a double row

of stitching 1/8-in. from edge of pocket, sew pocket down on webbing channel fold line (Figure 30). (QA)



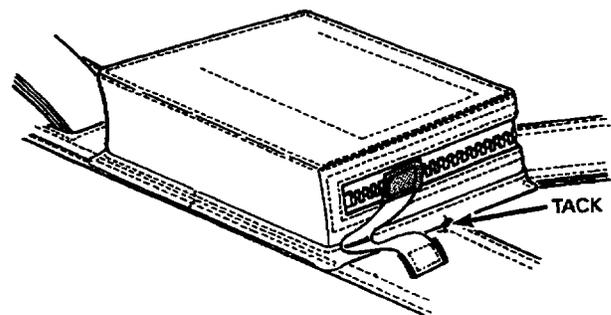
6.2-7088

Figure 30. Attachment of Survival Items Stowage Pocket

**WARNING**

Do not stitch thru harness webbing, or over webbing channel.

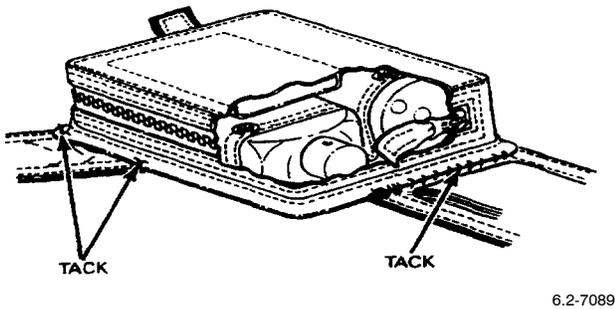
i. Tack survival pocket to main sling, to right of oxygen securing tab with size 6 thread, doubled and waxed; tie off (Figure 31). (QA)



0803-30

Figure 31. Tacking Survival Items Stowage Pocket to Main Sling

j. Hand tack pocket to left side of harness, with two turns of size 6 thread, single and waxed; tie off (Figure 32).



6.2-7089

Figure 32. Hand Stitch Pocket Over Webbing

k. Hand stitch pocket over webbing channel with size 6, thread doubled and waxed. Start stitch with two overhand knots followed by a whip stitch and secure with two overhand knots. (QA)

**22. HEED SURVIVAL STOWAGE POCKET REPLACEMENT.**

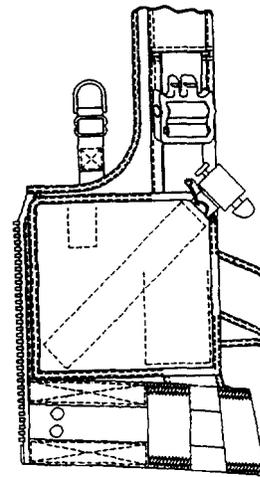
**Material Required**

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

a. Carefully remove old stitching around HEED pocket.

b. Align the pocket with the outer edge of channel and 2 7/8-in. from bottom of floatation belt. Attach pocket with a double row of stitching along channel (do not stitch thru channel) from the bottom of the pocket up to the slot where the main sling webbing exits the garment (Figure 33).

c. On the inside (towards slider), attach the pocket to the garment with a double row of stitching and around the top and bottom of the pocket up to the main sling webbing (Figure 33).



6.2-7089C

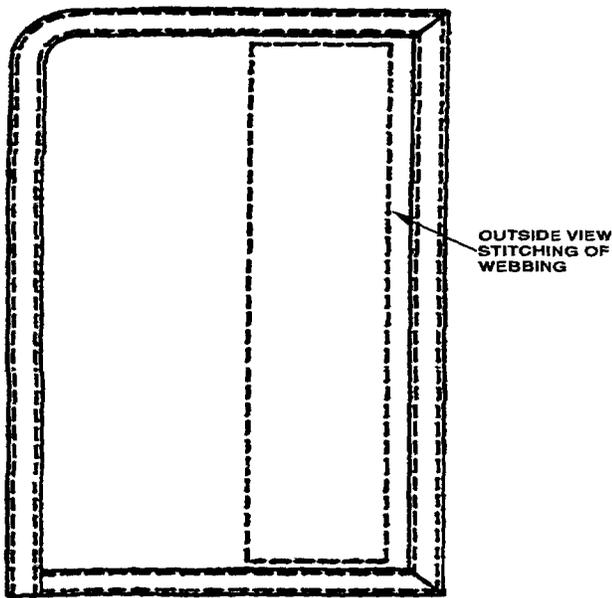
Figure 33. Attachment of HEED Pocket

**23. MODIFICATION AND INSTALLATION OF RADIO/KNIFE POCKET TO STORE THE GPS RECEIVER.**

**Material Required**

Specification or Part Number	Nomenclature
829AS146-1	Pockets, Radio and Knife
PIA-W-4088	Webbing, Nylon, Type VIII, 8-in.
PIA-T-5038	Tape, Nylon, Type III, Class 1 or 1A, 16-in.
MS27980-1B	Snap, Fastener, Button (4)
MS27980-6B	Socket, Snap Fastener (4)
MS27980-7B	Stud, Snap Fastener
MS27980-8B	Snap, Fastener, Eyelet
V-T-295	Thread, Nylon, Size E, Type I or II, Class A
A-A-1799	Bag, Plastic

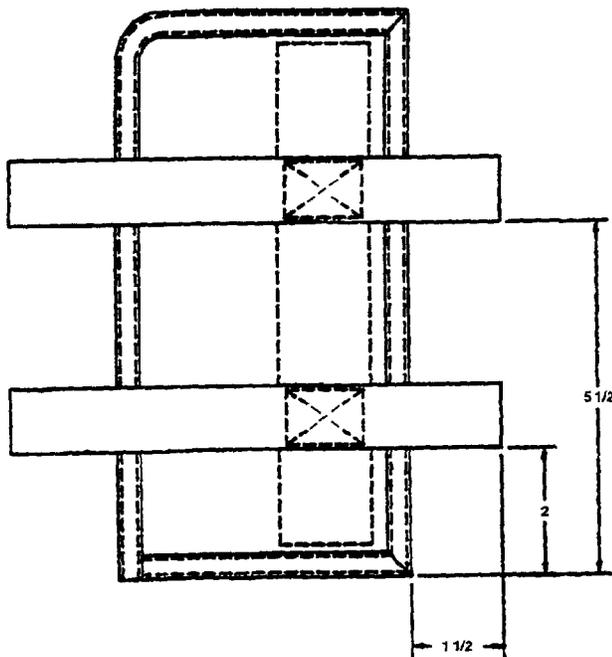
a. Cut one piece of nylon webbing 8-in. long and install on inside bottom of pocket and stitch all around 1/16 to 1/8-in. edge distance (Figure 34).



6.2-8012

Figure 34. Installation of Webbing on Inside Bottom

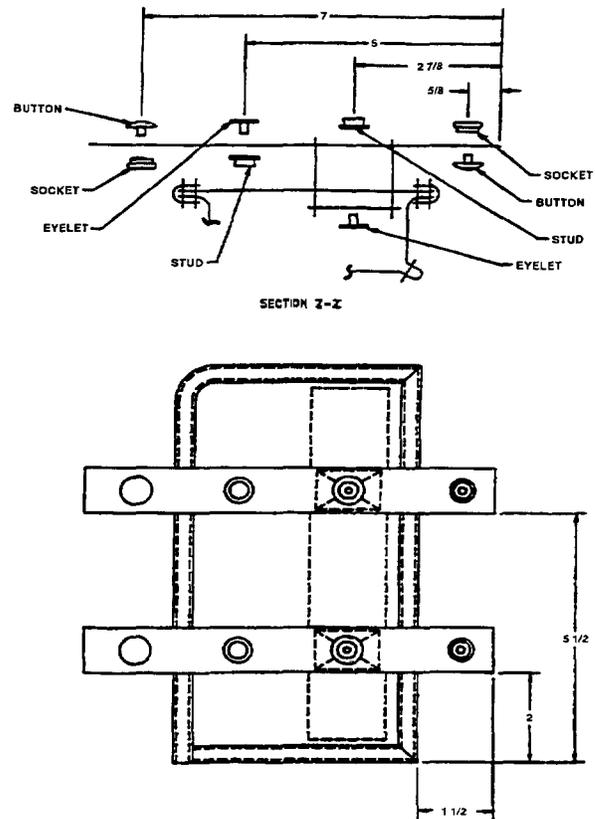
b. Cut two pieces nylon tape 1-in. x 8-in. long and sew using a box-X stitch to attach to outside bottom of pocket. Place nylon as shown in Figure 35.



6.2-8013

Figure 35. Installation of Tape on Outside Bottom

c. Install button, socket, stud, and eyelet fasteners as shown in Figure 36.



6.2-8014

Figure 36. Installation of Snap Fasteners

d. Attach the GPS pocket to the PCU harness as follows:

(1) With the pocket slider facing down and the knife pocket facing forward, install the GPS pocket onto the right hand chest strap channel aft of the strobe light pocket.

(2) Place the long end of the GPS pocket straps around chest strap channel and snap to pocket mounted snap stud (both straps).

(3) Bring short end around and snap to pocket strap snap.

e. Install GPS device as follows:

(1) Ensure GPS is RFI per maintenance instruction.

(2) Place GPS devices in plastic bag and seal.

(3) Install bagged GPS device into pocket.

f. Make proper entries on Aircrew Personal Equipment Record (OPNAV 4790/159).

**ORGANIZATIONAL AND INTERMEDIATE MAINTENANCE**

**ILLUSTRATED PARTS BREAKDOWN**

**PCU-33/P SERIES PARACHUTE RESTRAINT HARNESS ASSEMBLY**

**PART NO. 829AS100**

**List of Effective Work Package Pages**

<u>Page No.</u>	<u>Chg. No.</u>						
1 thru 2	10	4 thru 5	9	7	9	12	9
3	0	6	0	8 thru 11	0	13	0

**Reference Material**

Organizational and Intermediate Maintenance, Description and Principles of Operation,  
PCU-33/P Series Parachute Restraint Harness Assembly ..... WP 008 00

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Usable On Codes .....	2

**List of Figures**

<u>Title</u>	<u>Page</u>
PCU-33/P Parachute Restraint Harness Assembly .....	3

**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 623	14 Feb 96	Riser Restraint Keeper (RAMEC P-08-95)	1 Jul 96	31 Dec 2003

**1. INTRODUCTION.**

a. This Work Package (WP) contains information for ordering and identifying parts for the PCU-33/P Series Parachute Restraint Harness Assembly (Figure 1).

**2. USABLE ON CODES.**

a. The usable on codes in this WP refer to the aircraft application for the PCU-33/P Series Parachute Restraint Harness Assembly.

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

- A, B, - T-2C, S-3, F/A-18, F-14
- D - F-4, E-2, EA-6, TA-4, TAV/AV-8B, T-45
  
- C - T-2C, F/A-18, F-14, F-4, E-2, EA-6, TA-4
  
- E - T-2C, S-3, F/A-18, F-14, F-4, EA-6, TA-4
  
- F - TAV/AV-8B, T-45, F/A-18, F-14
  
- G - S-3
  
- H - E-2

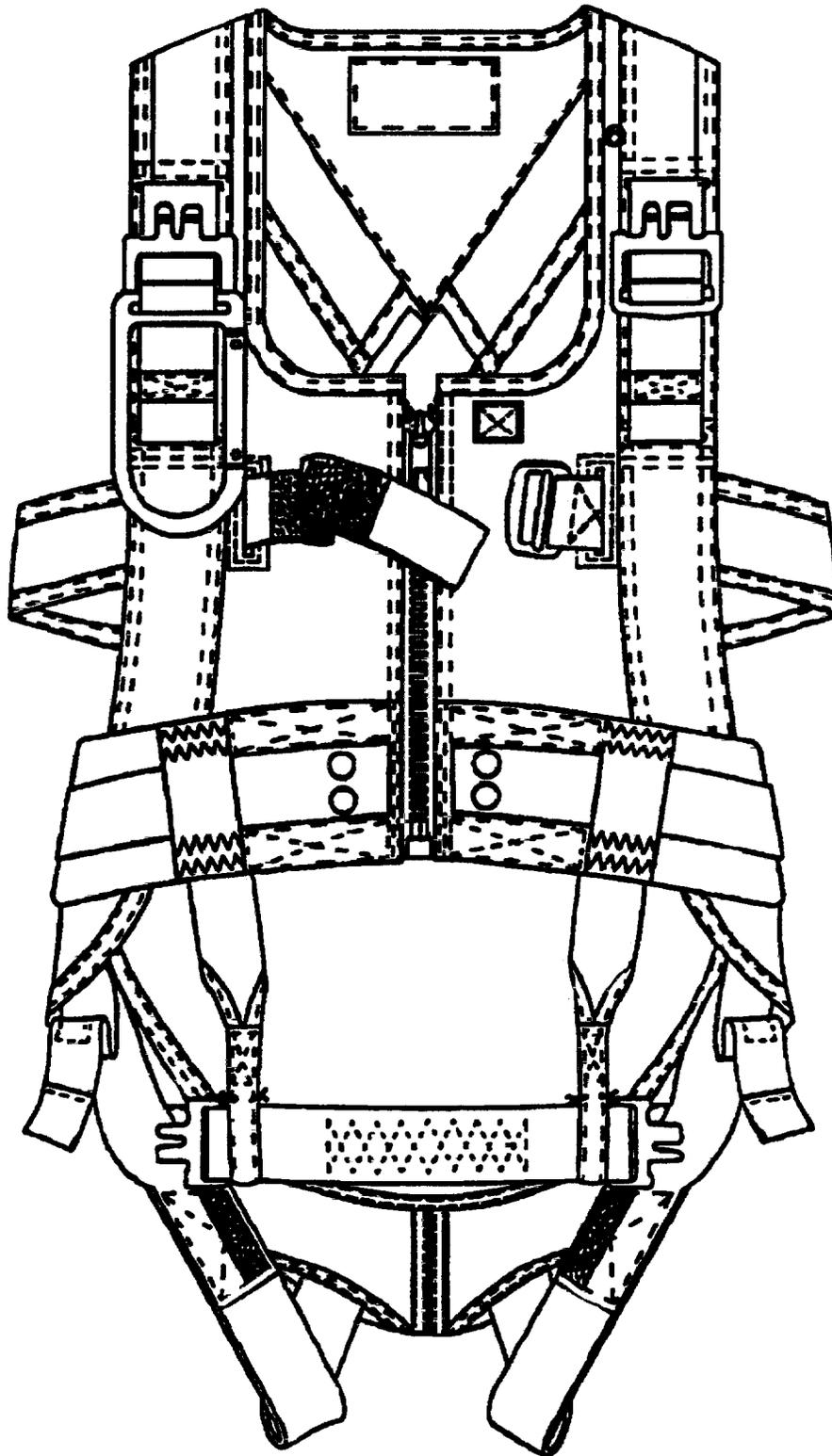


Figure 1. PCU-33/P Parachute Restraint Harness Assembly (Sheet 1 of 11)

INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE	SM&R CODE
	829AS100-7	HARNESS ASSEMBLY, PCU-33/P ..... PARACHUTE RESTRAINT	1	A	AGOGG
	829AS100-10	HARNESS ASSEMBLY, PCU-36/P ..... PARACHUTE RESTRAINT	1	B	AGOGG
	829AS100-38	HARNESS ASSEMBLY, PCU-51/P ..... PARACHUTE RESTRAINT	1	C	AGOGG
	829AS100-39	HARNESS ASSEMBLY, PCU-52/P ..... PARACHUTE RESTRAINT	1	D	AGOGG
	829AS100-36	HARNESS ASSEMBLY, PCU-34/P ..... PARACHUTE RESTRAINT	1	E	AGOGG
	829AS100-37	HARNESS ASSEMBLY, PCU-39/P ..... PARACHUTE RESTRAINT	1	F	AGOGG
	829AS100-26	HARNESS ASSEMBLY, PCU-50/P ..... PARACHUTE RESTRAINT	1	G	AGOGG
	829AS100-28	HARNESS ASSEMBLY, PCU-55/P ..... PARACHUTE RESTRAINT	1	H	AGOGG
1	015-710001-1	. ADAPTER ASSEMBLY, CANOPY RELEASE ...	2	*	PAOGG
	990065-1	. ADJUSTER ASSEMBLY, STRAP .....	2	*	PAOGG
2	122-10935-3	. . SCREW /99449/ .....	1	*	PAOZZ
	50121	. . SCREW /26304/ .....	1	*	PAOZZ
3	1979AS838-1	. ADAPTER ASSEMBLY, LAPBELT .....	2	*	PAOGG
	015-11366-1	. ADAPTER ASSEMBLY, LAPBELT .....	2	*	PAOGG
	990070-1	. ADAPTER ASSEMBLY, LAPBELT .....	2	*	PAOGG
4	1979AS837-1	. . SCREW .....	2	*	PAOZZ
	122-11614-1	. . SCREW .....	2	*	PAOZZ
5	814AS200-1	. HARNESS ASSEMBLY PARACHUTE ..... RESTRAINT, SMALL	1		PCOGG
	829AS142-1SS	. HARNESS ASSEMBLY PARACHUTE ..... RESTRAINT, SMALL SHORT (USE UNTIL EXHAUSTED)	1		PCOGG
	814AS400-1	. HARNESS ASSEMBLY PARACHUTE ..... RESTRAINT, MEDIUM	1		PCOGG
	829AS142-2SR	. HARNESS ASSEMBLY PARACHUTE ..... RESTRAINT, SMALL REGULAR (USE UNTIL EXHAUSTED)	1		PCOGG
	814AS400-1	. HARNESS ASSEMBLY PARACHUTE ..... RESTRAINT, MEDIUM	1		PCOGG
	829AS142-3SL	. HARNESS ASSEMBLY PARACHUTE ..... RESTRAINT, SMALL LONG (USE UNTIL EXHAUSTED)	1		PCOGG
	814AS400-1	. HARNESS ASSEMBLY PARACHUTE ..... RESTRAINT, MEDIUM	1		PCOGG

Figure 1. PCU-33/P Parachute Restraint Harness Assembly (Sheet 2 of 11)

INDEX NO.	PART NUMBER	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE	SM&R CODE
	829AS142-4MS	. HARNESS ASSEMBLY, PARACHUTE RESTRAINT, MEDIUM SHORT (USE UNTIL EXHAUSTED)	1		PCOGG
	814AS400-1	. HARNESS ASSEMBLY PARACHUTE RESTRAINT, MEDIUM	1		PCOGG
	829AS142-5MR	. HARNESS ASSEMBLY PARACHUTE RESTRAINT, MEDIUM REGULAR (USE UNTIL EXHAUSTED)	1		PCOGG
	829AS142-6ML	. HARNESS ASSEMBLY PARACHUTE RESTRAINT, MEDIUM LONG	1		PCOGG
	829AS142-7LS	. HARNESS ASSEMBLY PARACHUTE RESTRAINT, LARGE SHORT	1		PCOGG
	829AS142-8LR	. HARNESS ASSEMBLY PARACHUTE RESTRAINT, LARGE REGULAR	1		PCOGG
	829AS142-9LL	. HARNESS ASSEMBLY PARACHUTE RESTRAINT, LARGE LONG	1		PCOGG
	829AS142-10XS	. HARNESS ASSEMBLY PARACHUTE RESTRAINT, X LARGE SHORT	1		PCOGG
	829AS142-11XR	. HARNESS ASSEMBLY PARACHUTE RESTRAINT, X LARGE REGULAR	1		PCOGG
	829AS142-12XL	. HARNESS ASSEMBLY PARACHUTE RESTRAINT, X LARGE LONG	1		PCOGG
	829AS142-15XXS	. HARNESS ASSEMBLY PARACHUTE RESTRAINT, XX LARGE SHORT	1		PCOGG
	829AS142-16XXR	. HARNESS ASSEMBLY PARACHUTE RESTRAINT, XX LARGE REGULAR	1		PCOGG
	829AS142-17XXL	. HARNESS ASSEMBLY PARACHUTE RESTRAINT, XX LARGE LONG	1		PCOGG
	814AS200-1	. HARNESS ASSEMBLY PARACHUTE RESTRAINT, EXTRA SMALL	1		PCOGG
	829AS142-18XS	. HARNESS ASSEMBLY PARACHUTE RESTRAINT, EXTRA SMALL (USE UNTIL EXHAUSTED)	1		PCOGG
	814AS200-1	. HARNESS ASSEMBLY PARACHUTE RESTRAINT, CUSTOM	1		XBOGG
	829AS142-21	. HARNESS ASSEMBLY PARACHUTE RESTRAINT, CUSTOM (USE UNTIL EXHAUSTED)	1		XBOGG
6	1979AS975-1	. . RING ASSEMBLY, SNAPLINK, RESCUE ...	1		PAOZZ
	823AS100-1	. . D-RING WITH GATE (USE UNTIL EXHAUSTED)	1		PAOZZ
7	MS70101-1	. . ADAPTER, REVERSIBLE	3		PAOZZ
8	MS27983-1	. . BUTTON	9		PAOZZ
9	MS27983-4	. . EYELET	11		PAOZZ
10	MS27983-3	. . STUD	10		PAOZZ
11	MS27983-2N	. . SOCKET	10		PAOZZ
12	MS27980-8B	. . EYELET	1		PAOZZ

Figure 1. PCU-33/P Parachute Restraint Harness Assembly (Sheet 3 of 11)

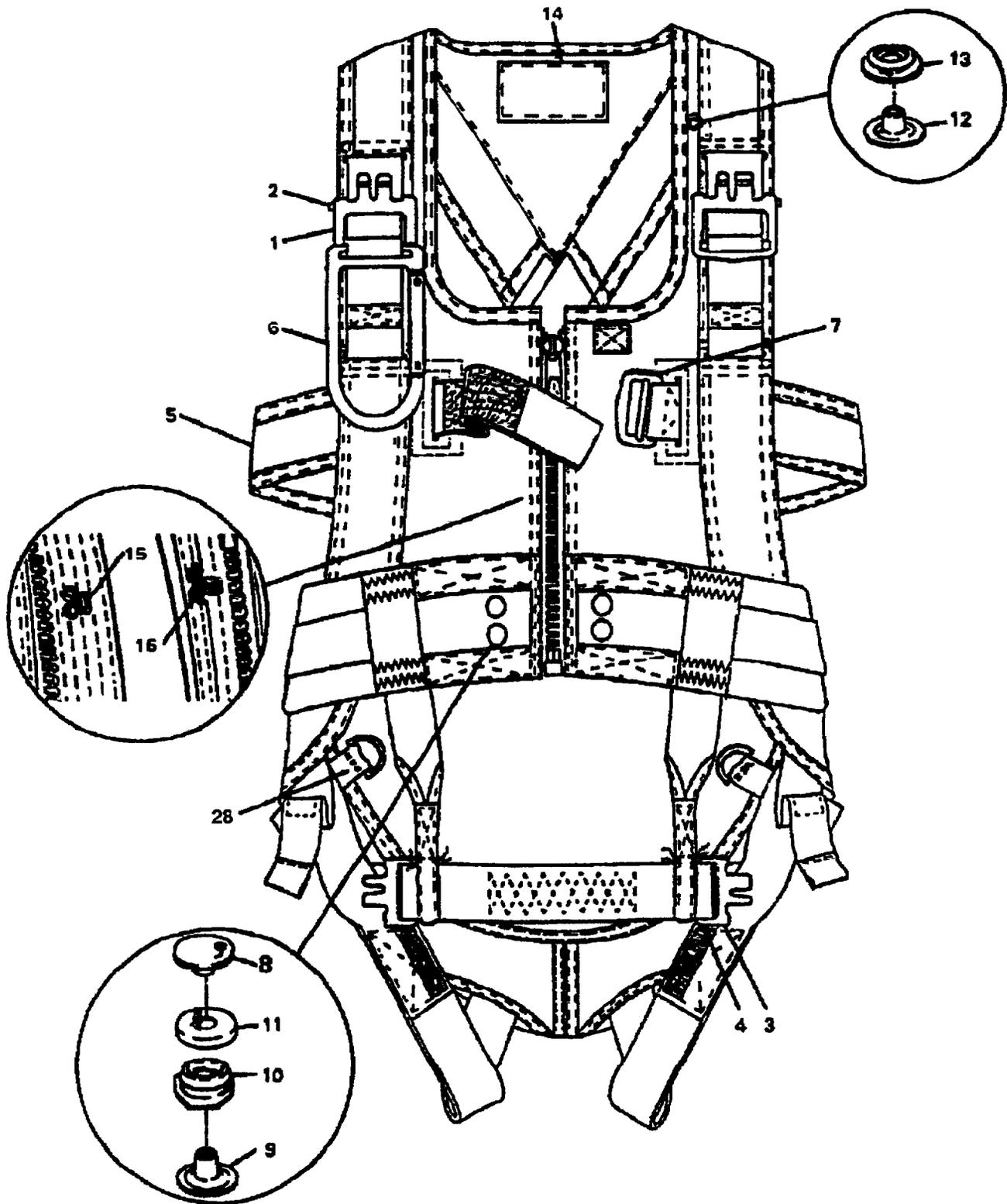


Figure 1. PCU-33/P Parachute Restraint Harness Assembly (Sheet 4 of 11)

INDEX NO.	PART NUMBER	DESCRIPTION							UNITS PER ASSY	USABLE ON CODE	SM&R CODE
		1	2	3	4	5	6	7			
13	MS27980-7B	.	.	STUD	.....				1		PAOZZ
14	829AS105-2	.	.	LABEL	.....				1		MDGZZ
15	60A113C28-1	.	.	EYE	.....				3		PAOZZ
16	60A113C28-2	.	.	HOOK	.....				3		PAOZZ
17	829AS145-1	.		POCKET, STROBE LIGHT	.....				1	C,D,E, F,G,H	PAGZZ
18	829AS146-1	.		POCKETS, RADIO AND KNIFE	.....				1	C,D,E, F,G,H	PAGZZ
19	829AS147-20	.		POCKET, SURVIVAL ITEM STOWAGE	.....				1	C,D,E, F,G	PAGZZ
20	814AS805-1	.		POCKET, HEED SURVIVAL ITEM STOWAGE	.....				1	H	PAGZZ
21	MS51925-1	.	.	D-RING	.....				1		PAGZZ
22	M43770-12-SIZE1	.		SNAP HOOK	.....				1	H	PAGZZ
23	814AS805-2	.		COVER, HEED BOTTLE	.....				1	H	PAGZZ
24	829AS106-1	.		FLOTATION ATTACHMENT PANEL	.....				2	C,D,E, F,G,H	MGGZZ
25	829AS152-13	.		POCKET, OXYGEN REGULATOR AND HOSE	.....				1	E	PAGZZ
26	829AS158-2	.		TAB, OXYGEN HOSE SECURING	.....				2	C,D,E, F,G	MGGZZ
27	829AS157-1	.		STRAPS, FLASHLIGHT RETENTION	.....				2	C,D,E, F,G,H	MGGZZ
28	829AS153-1	.		SURVIVAL VEST ATTACHMENT TAB AND D-RING	.....				2	B,D	MGGZZ
29	MS51925-4	.	.	D-RING	.....				2	C,D,E, F,G,H	PAGZZ
	829AS151-24	.	.	D-RING	.....				2	C,D,E, F,G,H	PAGZZ
30	MS51940-3S	.	.	LOOP, SLIDE	.....				2	C,D,E, F,G,H	PAGZZ
31	829AS151-1	.		LPU ATTACHMENT STRAP	.....				2	B,D,E	PAOZZ
32	829AS165-2	.		MOUNTING KIT, OXYGEN REGULATOR	.....				1	F	PAGZZ
	237C100-3	.		MOUNTING KIT, OXYGEN REGULATOR (USE UNTIL EXHAUSTED)/SEE NOTE 2/	.....				1	F	PAGZZ
33	MS20427F4-9	.	.	RIVETS	.....				6		PAGZZ
34	67A100C30-1	.		BRACKET, MOUNTING/SEE NOTE 3/	.....				1	G	PAGZZ
35	AN470AD-4-8	.	.	RIVETS	.....				6		PAGZZ
36	MIL-L-38217	.		LIGHT, DISTRESS SIGNAL, SDU-5/E	.....				1	E,F,G,H	PAOZZ
37	MIL-K-25594	.		KNIFE, POCKET HOOK BLADE AND SNAP BLADE	.....				1	E,F,G,H	PAOZZ
38	AN/PRC-90	.		RADIO SET/SEE NOTE 1/	.....				1	E,F,G,H	PAOGG
	AN/PRC-112	.		RADIO SET/SEE NOTE 1/	.....				1		PAOGG
	AN/PRC-149	.		RADIO SET/SEE NOTE 1/	.....				1		PAOGG

Figure 1. PCU-33/P Parachute Restraint Harness Assembly (Sheet 5 of 11)

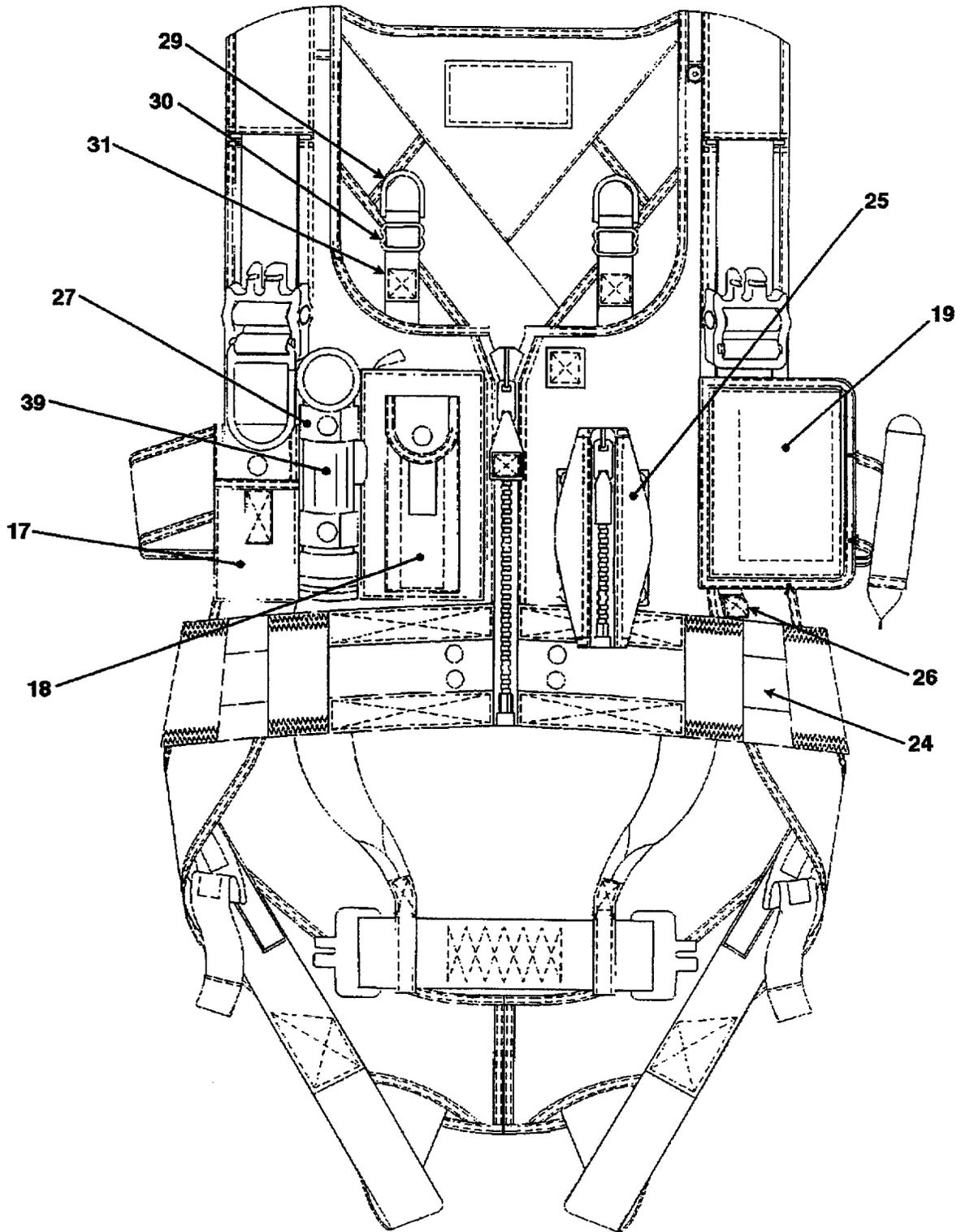


Figure 1. PCU-33/P Parachute Restraint Harness Assembly (Sheet 6 of 11)

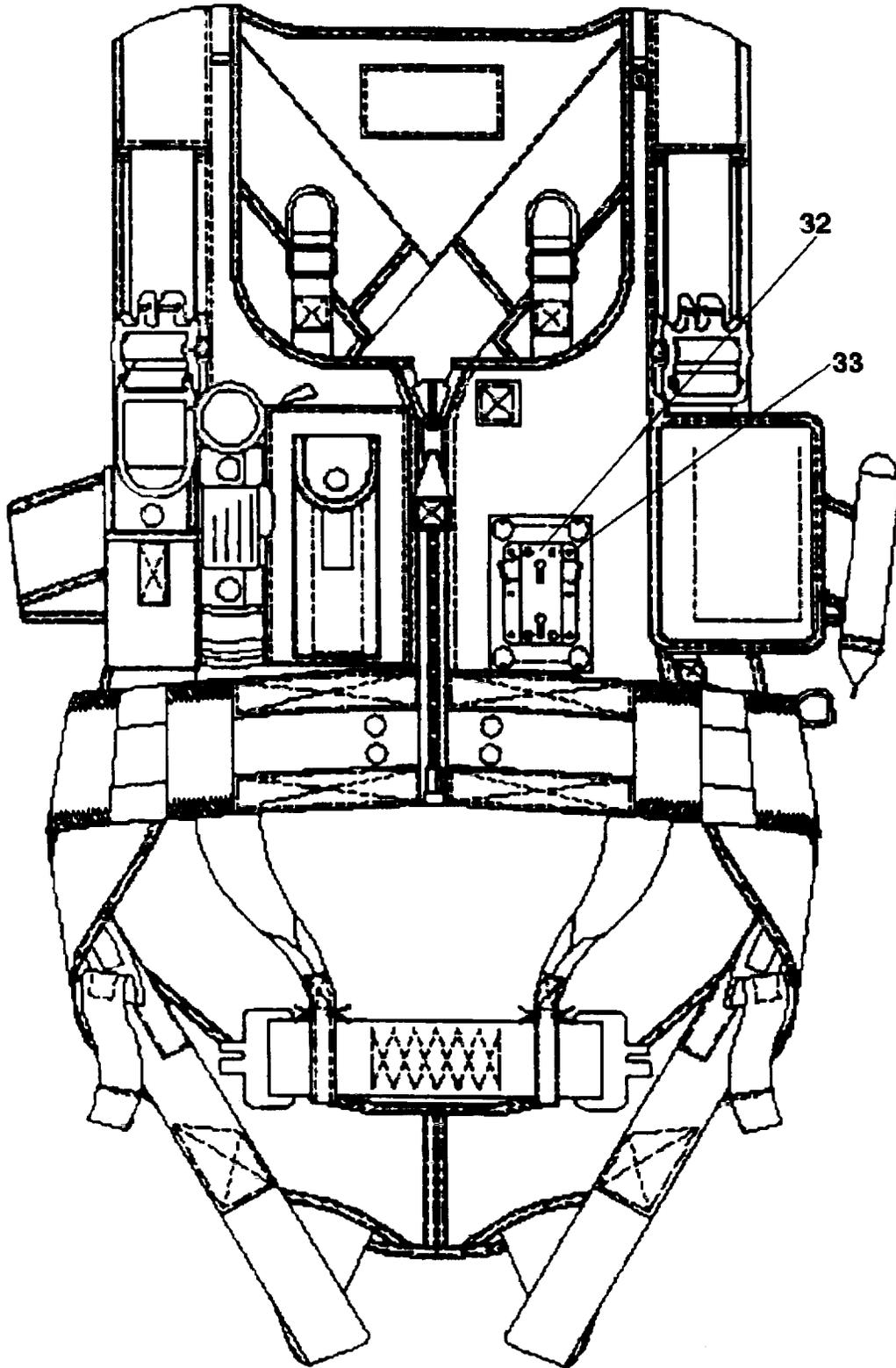


Figure 1. PCU-33/P Parachute Restraint Harness Assembly (Sheet 7 of 11)

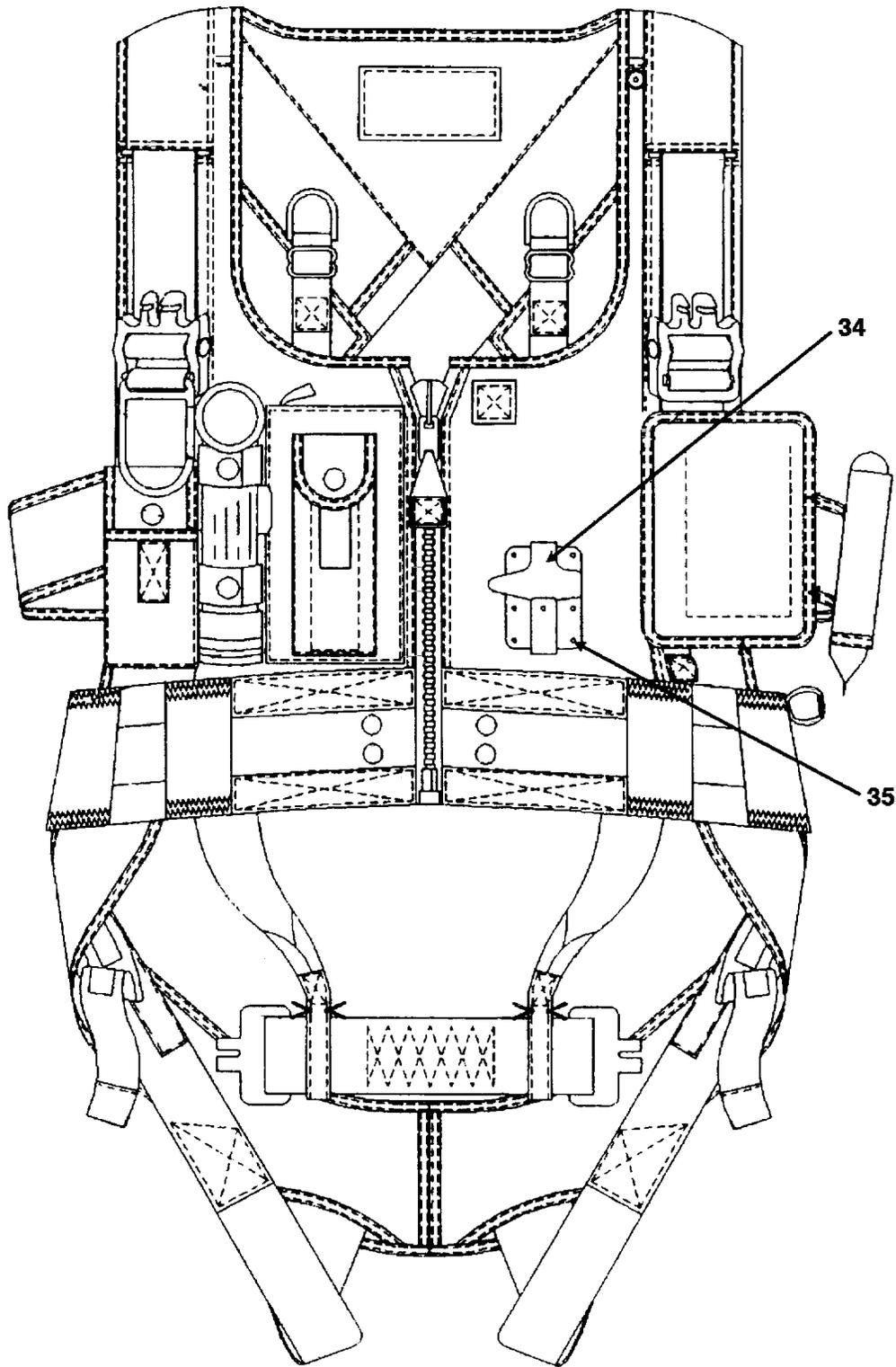


Figure 1. PCU-33/P Parachute Restraint Harness Assembly (Sheet 8 of 11)

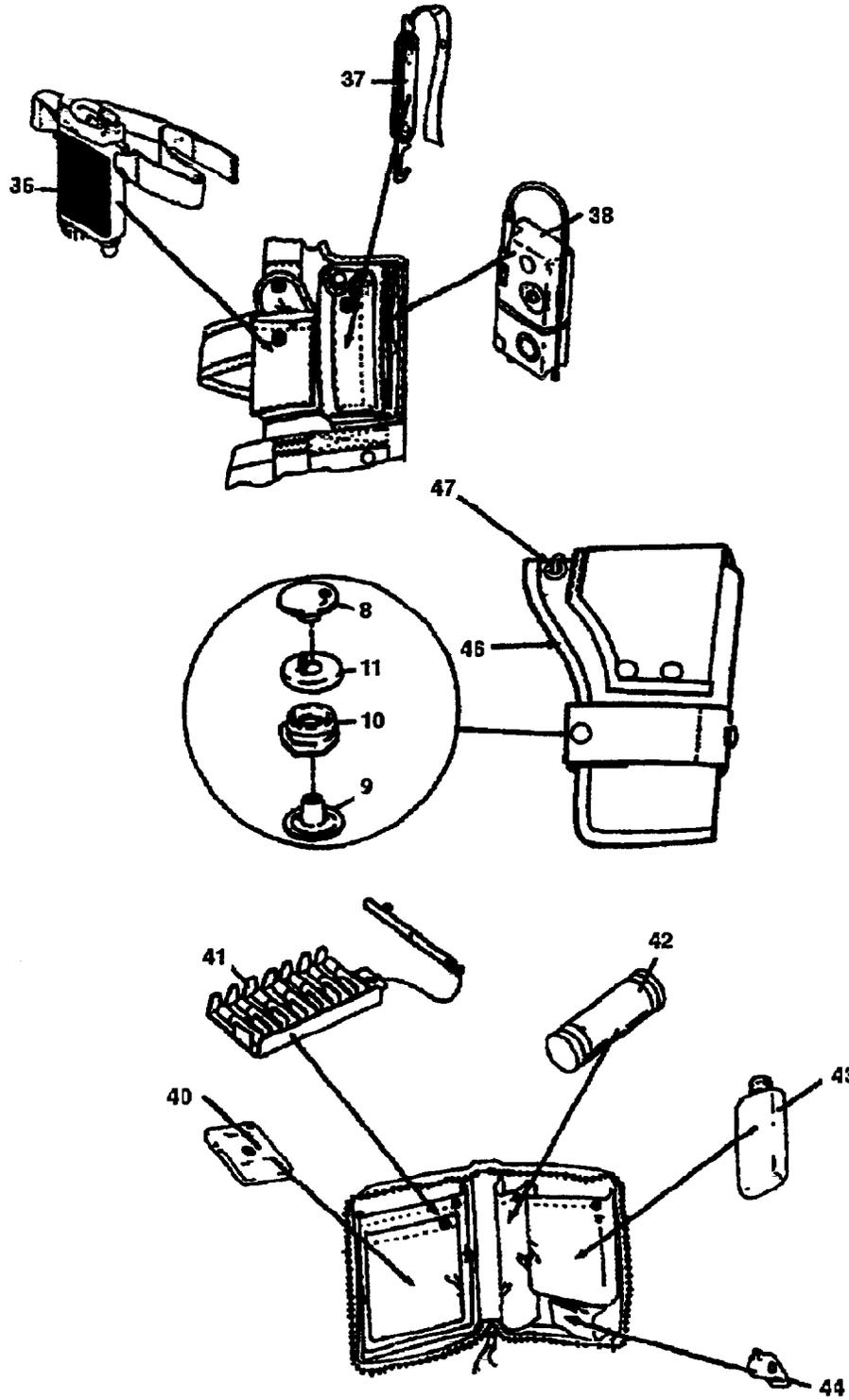


Figure 1. PCU-33/P Parachute Restraint Harness Assembly (Sheet 9 of 11)

INDEX NO.	PART NUMBER	DESCRIPTION							UNITS PER ASSY	USABLE ON CODE	SM&R CODE
		1	2	3	4	5	6	7			
39	MX-991/U	.							1	E,F,G,H	PAOZZ
	ACR/FA-11	.							1		PAOZZ
	ACR/FA-11 (M)	.							1		PAOZZ
40	784311-21	.							1	E,F,G,H	PAOZZ
	MIL-M-18371	.							1	E,F,G,H	PAOZZ
											(USE UNTIL EXHAUSTED)
41	LD615184	.							1	B,C,E,	PAOZZ
	6000D7047-1	.							1		PAOZZ
											A/P25S-5A
42	DL3139734	.							1	E,F,G,H	PAOZZ
											MARINE SIGNAL MK124
	LD165580	.							1		PAOZZ
											MARINE SIGNAL MK 13 MOD O
											(USE UNTIL EXHAUSTED)
43	64-159WITHCAP	.							1	E,F,G,H	PAOZZ
	PLAXWITHCAP	.							1		PAOZZ
											(USE UNTIL EXHAUSTED)
44	A-A-55106	.							1	E,F,G,H	PAOZZ
	MIL-W-1053	.							1	E,F,G,H	PAOZZ
											(USE UNTIL EXHAUSTED)
45	1586AS101-1	.							1	H	PAOZZ
											DEVICE SRU-36/P
46	829AS168-1	.							1	E,F,G,H	PAOZZ
											HOLSTER/SEE NOTE 4/
47	MS 20230B10	.	.	.					1		PAOZZ
											GROMMET AND WASHER (SIZE 0)

- NOTES:
1. Type Radio at option of Type Commander.
  2. For use with CRU-82/P Regulator utilizing OBOG System.
  3. For use with Diluter Demand Regulator P/N 900-002-051-03/4 in S-3 aircraft with Lox System.
  4. Optional with all Configurations.

Figure 1. PCU-33/P Parachute Restraint Harness Assembly (Sheet 10 of 11)

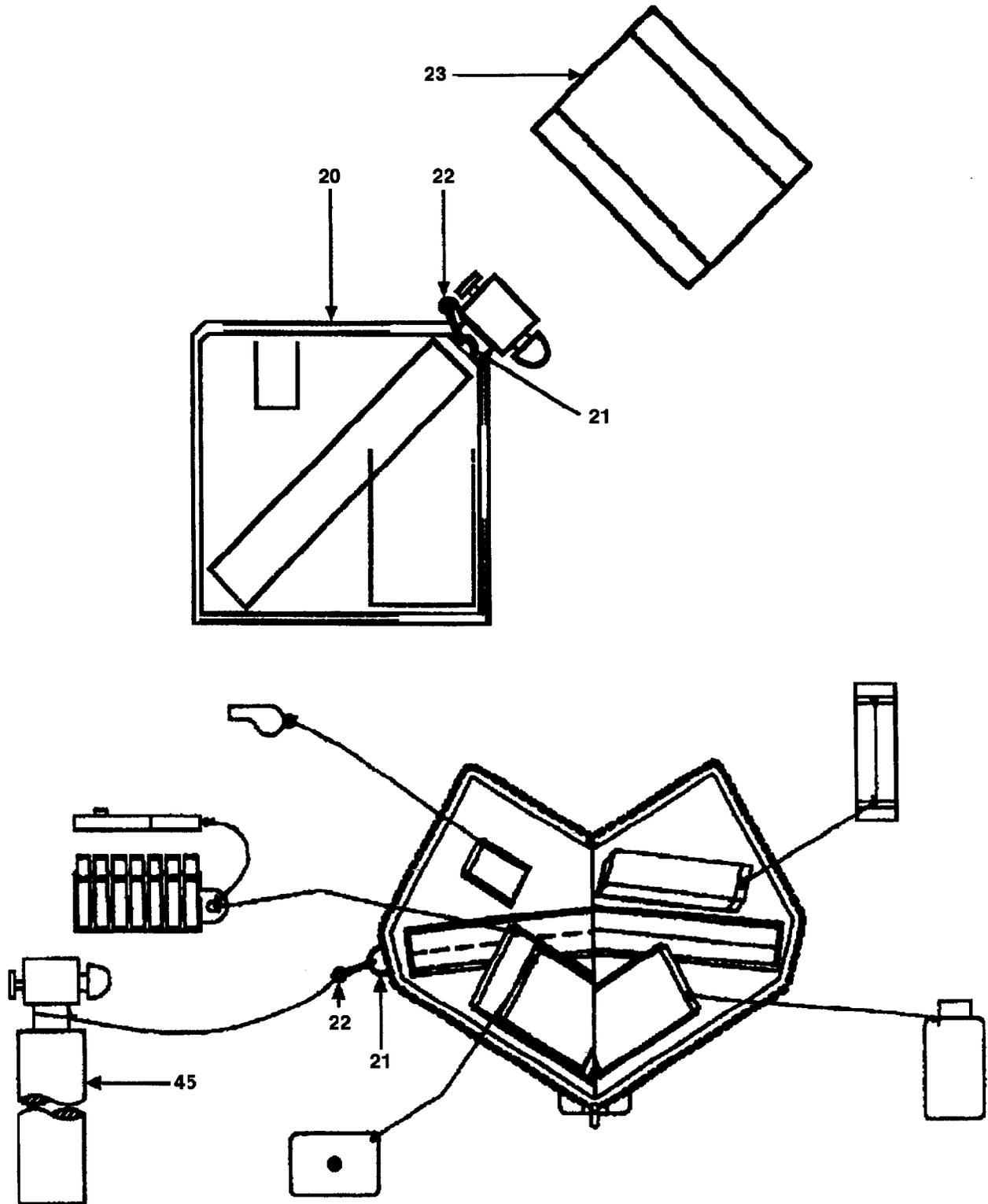


Figure 1. PCU-33/P Parachute Restraint Harness Assembly (Sheet 11 of 11)

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