CHAPTER 5

LIFE PRESERVER, LOW-PROFILE FLOATATION COLLAR, LPU-34/P

Section 5-1. Description

5-1. GENERAL.

5-2. The LPU-34/P Life Preserver, Low Profile Floatation Collar (LPFC), is equipped with two manually operated inflation devices. The LPU-34/P is designed as a constant wear item for use with compatible flight clothing and other crew equipment. It weighs 3 1/4 pounds and provides a minimum of 65 pounds of buoyancy. It has a zipper (slide fastener) the same color as the exterior cover to aid in distinguishing it from the LPU-33/P. The LPU-33/P has a black zipper and is equipped with automatic inflation devices.

NOTE

The CFA for LPFC (LPU-34/P) is Naval Air Warfare Center Aircraft Division, Patuxent River, MD 20670.

5-3. CONFIGURATION.

5-4. The LPU-34/P consists of an exterior cover assembly (casing assembly), inflation shell assembly, and a flotation assembly. The flotation assembly consists of two independent inflatable assemblies (bladders) each of which is equipped with a manual inflation device and an oral inflation valve. The bladders are packed in a black cloth inflation shell assembly. Four straps on the inflation shell assembly pass through grommets on the exterior cover assembly to attach the LPU-34/P to the survival vest. A beaded handle which connects by lanyard to an inflation device is mounted on each side of the exterior cover to initiate inflation of the life preserver. Two additional straps adjust a plastic buckle which snaps across the wearer's chest to help keep the LPU-34/P in position when worn.

5-5. INFLATION SHELL ASSEMBLY. The black cloth inflation shell assembly contains the two inflatable bladders. The design of the shell assembly provides the shape for the flotation collar. There are openings in the shell assembly through which the inflation valve stem and oral inflation tube of each bladder extend. A manual inflation device is secured to each valve stem by a cap nut which also serves as a cap for the valve stem. When installed each inflation device and its CO_2 cylinder are wrapped in a protective cover. The oral inflation valve tubes, which are provided as backup to CO_2 cylinder inflation, are retained by inserting the top of each tube in retainer loops attached to the inflation shell assembly.

5-6. APPLICATION.

5-7. The LPU-34/P LPFC is designated for use by aircrew personnel operating aircraft which are not equipped with ejection seat systems. It is designed for constant wear when wearing compatible flight clothing.

5-8. FUNCTION.

5-9. The LPU-34/P is inflated by pulling the beaded handles in a natural downward motion. Each beaded handle is connected by a lanyard to the actuating lever of an inflation device. Pulling the handles initiates zipper separation on the exterior cover and causes the CO_2 cylinder to be punctured, inflating the bladders. The zipper on the exterior cover continues to separate as the bladders inflate to provide head-out-of-water buoyancy.

5-10. In an emergency situation, the oral inflation tubes may be used to top off the inflated bladders, maintain inflation in a leaky bladder, or inflate a bladder if an inflation device malfunctions. The oral inflation tube may also be used to inflate the bladders during an inspection test or to evacuate air to perform packing.

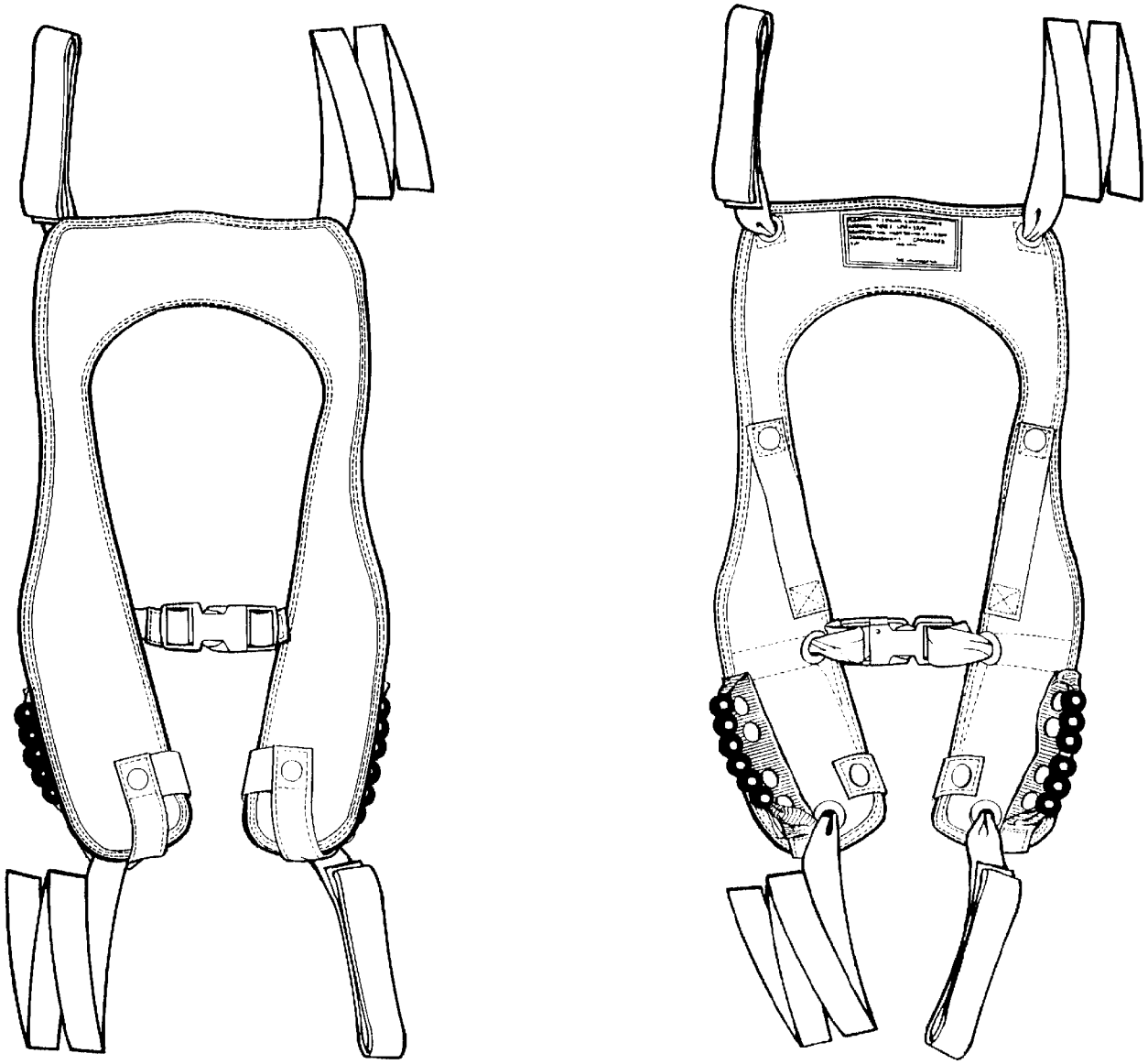

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Figure 5-1. LPU-34/P, Life Preserver, Low Profile Floatation Collar (LPFC)

NOTE

The exterior cover must be manually opened prior to attempting to inflate the bladders using the oral inflation tubes.

Section 5-2. Modifications

5-11. GENERAL.

5-12. The LPU-34/P Series Life Preserver Assembly shall be upgraded by comparing the configuration of the assembly with the modifications listed in table 5-1.

Table 5-1. LPU-34/P Directives

Description of Modification	Application	Modification Code
Replace Left and Right Beaded Handles	All LPU-34/P Life Preservers	66-664

Section 5-3. Maintenance

5-13. GENERAL.

5-14. This section contains information on LPU-34/P inspection, testing, cleaning, servicing, packing, and repair/replacement. Refer to table 5-2 for listing of repair/replacement actions.

5-15. INSPECTION.

5-16. The inspection requirements for the LPU-34/P Life Preserver shall include Preflight/Postflight, 360-Day Special, and Place-In-Service inspections.

5-17. The Preflight/Postflight Inspection shall be performed prior to and after each flight by the aircrewmember to whom the life preserver is assigned.

5-18. The 360-Day Special Inspection shall be performed once every 360 days after the LPU-34/P has been placed in service. The 360-Day Special Inspection shall be performed by qualified personnel at the Intermediate level of maintenance. The Functional Test shall be performed during every 360-Day Special Inspection.

5-19. The Place-In-Service Inspection shall be performed on all life preservers prior to placing in service. The Place-In-Service Inspection shall be performed by qualified personnel at the intermediate level of maintenance. If inspection indicates required repair is beyond the capability of maintenance, complete appropriate forms in accordance with OPNAVINST 4790.2 Series and forward entire assembly to supply.

5-20. QUALITY ASSURANCE. The more critical procedures in this chapter are underlined to designate steps which require a Quality Assurance Inspection to assure performance of specific requirements. After the underlined step is performed by the Aircrew Survival Equipmentman, the procedure shall be verified before the next step is performed. This verification shall be performed by a Collateral Duty Inspector or Quality Assurance Representative (CDI, CDQAR, or QAR). Under no circumstances shall an Aircrew Survival Equipmentman perform his own Quality Assurance Inspection.

5-21. PREFLIGHT/POSTFLIGHT INSPECTION. The Preflight/Postflight Inspection shall be performed at the organizational level prior to and after each flight by the aircrewmember to whom the life preserver is assigned as follows:

WARNING

Ensure that the beaded inflation handles are readily accessible. Beaded inflation handles shall be secured with six snap fasteners.

CAUTION

Do not open any sealed or safety-tied portion of the life preserver for Preflight Inspection.

1. Inspect exterior cover for cuts, tears, deterioration, abrasions, stains, cleanliness, security of stitching, and other signs of damage.

2. Inspect snaps for secure attachment, corrosion, and ease of operation.

3. Deleted

4. Inspect zipper closing for security throughout its length.

5. Inspect plastic buckles and buckle straps for proper operation and security. Buckles may be replaced without removing the life preserver from service.

6. Inspect identification and warning labels for secure attachment.

7. If any discrepancy is noted, the life preserver shall be returned to the Aviator's Equipment Branch for determination of maintenance action and disposition.

5-22. 360-DAY SPECIAL INSPECTION. The 360-Day Special Inspection consists of the following:

1. Preflight Inspection (LPU-34/P) (paragraph 5-21).

1A. Inflation Shell Assembly Visual Inspection (paragraph 5-24).

1B. Exterior Cover Assembly Visual Inspection (paragraph 5-25).

2. Functional Test every 360-Day Special Inspection cycle (paragraph 5-32).

3. Deflation (paragraph 5-35).

4. Leakage Test (paragraph 5-33).

5. Markings Inspection (paragraph 5-26).

6. Manual Inflation Device Inspection (paragraph 5-28).

7. Installation of CO_2 Cylinders (paragraph 5-30).

7A. Bladder Visual Inspection (paragraph 5-27).

8. Packing Procedures (paragraph 5-37).

9. Beaded Inflation Handle Pull Test (paragraph 5-34).

Table 5-2. LPU-34/P Common Repairs and Fabrications

Description	Paragraph Number
Replacement of pull the dot snap fasteners, attachment strap and exterior cover	5-29A
Replacement of snap fasteners, beaded handle assembly and exterior cover	5-29B

5-23. PLACE-IN-SERVICE INSPECTION. The Place-In-Service Inspection shall consist of the following tasks.

1. 360-Day Special Inspection (paragraph 5-22).

2. Functional Test (paragraph 5-32).

3. Bladder Visual Inspection (paragraph 5-27).

4. Inflation Shell Assembly Visual Inspection (paragraph 5-24).

5. Exterior Cover Assembly Visual Inspection (paragraph 5-25).

5-24. INFLATION SHELL ASSEMBLY VISUAL INSPECTION. To inspect the inflation shell assembly, proceed as follows:

1. Inspect fabric for cuts, tears, deterioration, abrasion, stains, and general cleanliness. If required, clean in accordance with paragraph 5-39.

2. Inspect seams, stitching, and reinforcement patches for condition and security.

3. Inspect zipper for security, stitching, and proper operation.

4. Inspect straps and loops for security and wear.

5. Inspect inflator covers for condition and security of hook and pile tape. Replace as required.

6. Inspect buckle for condition and proper operation. Replace if required.

7. If any component except the buckle or inflation covers is unserviceable, replace entire inflation shell assembly.

5-25. EXTERIOR COVER ASSEMBLY VISUAL INSPECTION. To inspect the exterior cover, proceed as follows:

1. Inspect fabric for cuts, tears, deterioration, abrasion, stains, and general cleanliness. If required, clean in accordance with paragraph 5-39.

2. Inspect seams and stitching for condition and security.

3. Inspect zipper for security, stitching, and proper operation.

4. Inspect snaps for security of attachment, corrosion, damage, wear, and ease of operation.

5. Inspect uni-directional snap fastener assemblies for presence, security of attachment, proper orientation, ease of operation, corrosion, and wear.

NOTE

All uni-directional snap fasteners shall be installed with the dot on the button of the snap fastener socket positioned on the side of the snap fastener to which lift must be applied to disengage the socket from the snap fastener stud.

The two snap fasteners on the exterior cover shall be installed with the dot on each socket button positioned away from the sewn strap attachment.

6. Inspect grommets for security, corrosion, damage, and wear.

7. Inspect identification label for security.

8. If any component is unserviceable, replace entire exterior cover.

5-26. MARKINGS INSPECTION. To inspect and restore marking, proceed as follows:

Materials Required

Quantity	Description	Reference Number
As Required	Ink, Marking, Laundry, Black	SPE-92 NIIN 00-161-4229
	-or-	
As Required	Ink, Drawing, Waterproof, Yellow	A-A-59291 NIIN 00-634-6583

1. Compare markings on preserver to those listed in figure 5-2.

2. Restore faded markings as close to original position as possible.

NOTE

THE 28TH IN-SERVICE MANAGEMENT PANEL MEETING FOR AVIATION LIFE SUPPORT SYSTEMS RESCINDED THE REQUIREMENT FOR THE PACKER TO SIGN THE INSPECTION RECORD PATCH ON LIFE PRESERVERS. THE REQUIREMENT FOR ALL OTHER DOCUMENTATION REMAINS UNCHANGED. THE REASON FOR THIS CHANGE IS THAT MOST HISTORY PATCHES ARE UNREADABLE AND THE PACKER'S AND INSPECTOR'S NAMES ARE DOCUMENTED ON AVIATION CREW SYSTEMS RECORDS.

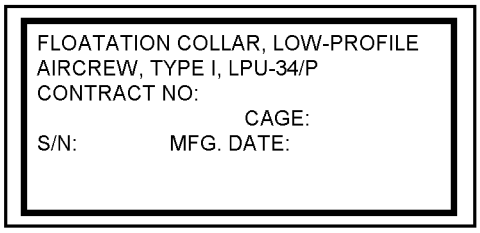

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Figure 5-2. LPU-34/P Markings

5-27. BLADDER VISUAL INSPECTION. To inspect bladders, proceed as follows:

1. Inspect bladders for cleanliness, cuts, tears, punctures, deterioration and abrasions.

2. Check all seams for security.

3. Inspect valve stems for security, cross threading, and cleanliness.

4. Inspect oral inflation valves for cracks, security, ease of operation, and corrosion.

5. If any component of the bladder is unserviceable, replace entire bladder.

5-28. INSPECTION, MANUAL INFLATION DEVICE. Inspection of the Manual Inflation Device is performed as follows:

1. Remove CO_2 cylinder from inflation device.

2. Examine inflation device and actuating lever for corrosion, security, stripped threads, CO_2 cylinder piercing pin for serviceability, and general condition.

a. If CO_2 cylinder piercing pin point is flat, rounded, or otherwise dull or damaged, the inflation device shall be replaced.

3. Check seat seal gasket for condition. Replace if necessary.

4. Operate actuating lever several times. Ensure lever moves freely and piercing pin moves properly inside valve body.

5-29. REPAIR/REPLACEMENT.

5-29A. REPLACEMENT OF THE PULL THE DOT SNAP FASTENERS, EXTERIOR COVER ASSEMBLY AND ATTACHMENT STRAP. To replace pull the dot snap fasteners used to secure the attachment straps to the exterior cover proceed as follows:

Materials Required

Quantity	Description	Reference Number
As Required	Cap, Snap Fastener	MS27983-1 NIIN 00-891-9073
As Required	Socket, Snap Fastener	MS27983-2 NIIN 00-945-2577
As Required	Stud, Snap Fastener	MS27983-3 NIIN 00-276-4908
As Required	Eyelet, Snap Fastener	MS27983-4 NIIN 00-276-4978

1. Remove damaged fastener from cover or attachment strap, using care not to damage cover or webbing.

NOTE

Exterior cover assembly shall be replaced if structural damage occurs during fastener removal or is found after fastener removal.

2. Install new fasteners at existing location as required, ensure pull the dot is installed facing up, nearest top of collar.

5-29B. REPLACEMENT OF SNAP FASTENERS, BEADED HANDLE ASSEMBLY AND EXTERIOR COVER. To replace snap fasteners used to secure the beaded handle assembly to the exterior cover assembly proceed as follows:

Materials Required

Quantity	Description	Reference Number
As Required	Cap, Snap Fastener	MS27981-1B NIIN 00-276-4954
As Required	Socket, Snap Fastener	MS27981-3B NIIN 00-276-4966
As Required	Stud, Snap Fastener	MS27981-4B NIIN 00-901-9660
As Required	Post, Snap Fastener	MS27981-5B NIIN 00-250-6858

1. Remove damaged fastener from cover or beaded handle assembly, using care not to damage cover or handle webbing.

NOTE

Exterior cover or beaded handle assembly shall be replaced if structural damage occurs during fastener removal or if found after fastener removal.

2. Install new fasteners at existing location as required.

5-30. INSTALLATION OF CO_2 CYLINDERS. To install CO_2 cylinders proceed as follows:

Support Equipment Required

Quantity	Description	Reference Number
1	Scale (Gram)	A-A-52021-1 NIIN 00-514-4117 or equivalent
1	Die, Cylinder Thread Chaser	1842-008-01 (CAGE 03688) NIIN 01-069-4040

Materials Required

Quantity	Description	Reference Number
As Required	Cylinder, CO_2 Type III, 35-Gram	MIL-C-25369C
As Required	Seat Seal	849AML NIIN 01-291-3593

1. Weigh a charged CO_2 cylinder and compare the minimum stamped weight with the scale weight. Discard and replace cylinder if scale weight is 2 grams less than minimum stamped weight.

2. To assure a firm cylinder seat, conduct a cylinder thread count. The threaded portion of the cylinder neck shall contain a minimum of seven full threads to assure a firm cylinder seat within inflator body. Any cylinder with less than seven full threads shall be discarded (figure 5-3).

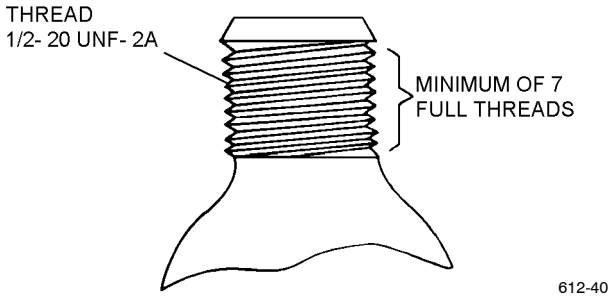
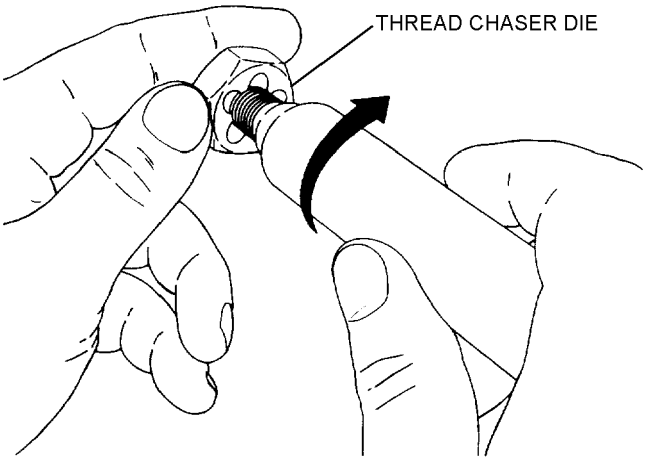


Figure 5-3. Cylinder Thread Count

CAUTION

Steel threads on CO_2 cylinder can cause damage to aluminum threads on inflator if cylinder is not carefully threaded. If binding occurs during installation of cylinder, use thread chaser die on cylinder thread to cut free excessive plating. Reinstall cylinder. If binding still occurs, replace cylinder.

3. Using the cylinder thread chaser die, turn the die to the full extent of the threads on the CO_2 cylinder to cut free any excessive plating covering the threads.



Step 3 - Para 5-30

NOTE

Inspect condition of seat seal gasket and replace as necessary. After each functional check, the seat seal gasket shall be replaced.

4. Remove old seat seal gasket if damaged or if a functional test has been performed.

5. Install new seat seal gasket and carefully thread CO_2 cylinder into inflator body hand tight.

6. Check for secure cylinder fit.

5-31. TESTING.

5-32. FUNCTIONAL TEST. The Functional Test shall be performed prior to placing LPU-34/P in service, every 360-Day Special Inspection, and when a bladder is replaced. The Functional Test is performed as follows:

CAUTION

Ensure work area surrounding preserver is free of foreign objects.

1. Perform beaded handle pull test in accordance with paragraph 5-34.

2. Open exterior cover. Carefully separate zipper by hand, starting at the zipper opening on either side of external cover.

3. Unfold inflation shell assembly.

CAUTION

After each functional test the spent CO_2 cylinders shall be replaced and the CO_2 cylinder piercing pins shall be inspected for serviceability.

4. Actuate inflation assemblies.

5. The life preserver shall fully inflate to design shape, without evidence of restriction, in less than 30 seconds.

6. If the life preserver does not properly inflate, determine cause. Ensure stem and valve are clean and free of foreign matter.

7. If correction is made, the life preserver shall be functionally tested again.

8. Deflate life preserver in accordance with paragraph 5-35 to remove all CO_2.

5-33. LEAKAGE TEST. The LPU-34/P shall be subjected to a Leakage Test each 360-Day Special Inspection. To perform a Leakage Test, proceed as follows:

Support Equipment Required

Quantity	Description	Reference Number
1	Test Fixture (or equivalent)	No Number

CAUTION

Ensure test area is free of foreign objects.

1. Ensure all carbon dioxide has been removed from any preserver which has been functionally tested.

2. Remove LH and RH inflator assemblies and discard gaskets.

3. Unzip inflation shell assembly and remove top and bottom bladders from shell.

CAUTION

If 3-way valve is not used, measuring device valve must be closed when air feed valve is open. Damage may occur to oral inflation valve if air supply pressure entering the life preserver exceeds 10 psi during this test.

NOTE

Refer to figure 5-4, Leakage Test Fixture Schematic. If test fixture meeting requirements indicated is not available, one must be fabricated in order to perform required leakage test.

If a suitable air source is not available, water-pumped nitrogen (BB-N-411) may be substituted.

4. Unlock oral inflation valve and connect to test fixture. Rotate valve to air supply position and inflate bladder. Alternately position valve between measuring device, vent, and air supply until proper pressure of 3.25 psig is attained.

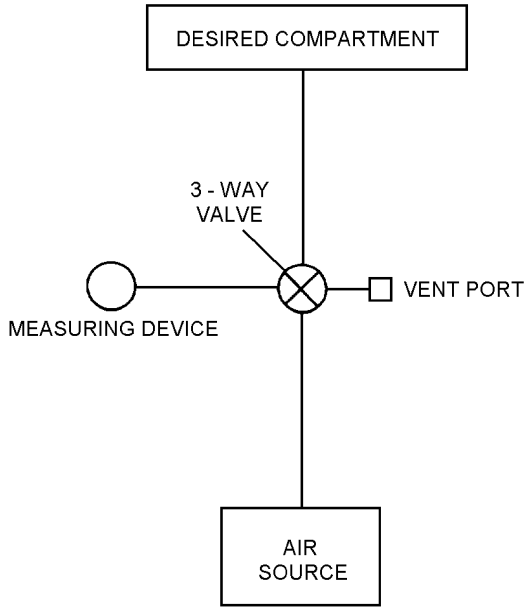


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Figure 5-4. Leakage Test Fixture Schematic

UNCORRECTED TEST READING 1.70 PSI

	TEMP.	BARO.
START	75° F	29.90 IN. Hg
END	70° F	29.70 IN. Hg
DIFFERENCE	- 5° F	-0.20
CORRECTION	+0.155	-0.098

TEMP. CORRECTION	+ 0.155
+ BARO. CORRECTION	- 0.098
CORRECTION	+ 0.057

UNCORRECTED READING	1.700 PSI
+ CORRECTION	+ 0.057
CORRECTED READING	1.757 PSI

EXAMPLE

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Figure 5-5. Temperature and Barometric Pressure Test Record

5. Securely shut off the air supply. Then after allowing a minimum of 15 minutes for pressure to stabilize, the pressures shall be readjusted, as necessary, to the leakage test pressures. After ensuring proper test pressures, record time.

6. Disconnect air supply and check for leaks. Ensure all valves are closed.

7. Record temperature and barometric pressure (figure 5-5).

8. After a minimum of 1 hour after completing step 5, record test pressure of both bladders. Test pressure of each bladder shall not decrease to less than 2.50 psig for a life preserver bladder, from a maximum test pressure of 3.25 psig.

9. Record temperature and barometric pressure (figure 5-5). Correct the test pressure for any changes in temperature and barometric pressure using tables 5-3 and 5-4.

CAUTION

Do not submerge life preservers in water to check for leaks.

10. If pressure of bladder is below 2.50 psig, inflate to correct leakage test pressure and coat bladder with a soap solution to determine if a leak exists. If a leak exists, replace bladder. If no leak is found, check test fixture.

Table 5-3. Temperature Conversion Chart

Temperature Difference (°F)	Correction (psi)
1	0.031
2	0.062
3	0.093
4	0.124
5	0.155
6	0.186
7	0.217
8	0.248
9	0.279
10	0.310
Rise in temperature: subtract from gage reading. Fall in temperature: add to gage reading.	

Table 5-4. Barometric Pressure Conversion Chart

Press. Diff. (inHG)	Corr. (psi)	Press. Diff. (inHG)	Corr. (psi)	Press. Diff. (inHG)	Corr. (psi)	Press. Diff. (inHG)	Corr. (psi)	Press. Diff. (inHG)	Corr. (psi)
0.01	0.005	0.16	0.078	0.31	0.152	0.46	0.225	0.61	0.299
0.02	0.010	0.17	0.083	0.32	0.157	0.47	0.230	0.62	0.304
0.03	0.015	0.18	0.088	0.33	0.162	0.48	0.235	0.63	0.309
0.04	0.020	0.19	0.093	0.34	0.167	0.49	0.240	0.64	0.314
0.05	0.025	0.20	0.098	0.35	0.172	0.50	0.245	0.65	0.319
0.06	0.030	0.21	0.103	0.36	0.176	0.51	0.250	0.66	0.323
0.07	0.035	0.22	0.108	0.37	0.181	0.52	0.254	0.67	0.328
0.08	0.040	0.23	0.113	0.38	0.186	0.53	0.260	0.68	0.333
0.09	0.045	0.24	0.118	0.39	0.191	0.54	0.265	0.69	0.338
0.10	0.049	0.25	0.123	0.40	0.196	0.55	0.270	0.70	0.343
0.11	0.054	0.26	0.127	0.41	0.201	0.56	0.275	0.71	0.348
0.12	0.060	0.27	0.132	0.42	0.206	0.57	0.279	0.72	0.353
0.13	0.064	0.28	0.137	0.43	0.211	0.58	0.284	0.73	0.358
0.14	0.069	0.29	0.142	0.44	0.216	0.59	0.289	0.74	0.363
0.15	0.073	0.30	0.147	0.45	0.221	0.60	0.294	0.75	0.368

Rise in pressure: add to gage reading.
Fall in pressure: subtract from gage reading.

11. Deflate bladder in accordance with paragraph 5-35.

12. Reassemble preserver and pack in accordance paragraph 5-38.

13. Records Updating. Make necessary entries on appropriate form in accordance with OPNAVINST 4790.2 Series.

5-34. BEADED INFLATION HANDLE PULL TEST. To perform the beaded inflation handle pull test, proceed as follows:

1. Manually release beaded handles.

2. If snap fasteners do not release, inspect male and female snap fasteners for damage. Replace entire beaded inflation handle if required and repeat step 1. Replace exterior cover if required.

3. Attach gauge to webbing between third and fourth bead on inflation handle.

4. Hold inflation lanyard securely against exterior cover to ensure life preserver actuating lever will not be pulled.

5. Add a 25-pound force to check the security of the beaded handle attachment to the inflation lanyard.

6. Examine lanyard for frays, ruptures, thin spots, and security. If unsatisfactory, replace entire beaded inflation handle.

5-35. DEFLATION.

5-36. To deflate the life preserver, proceed as follows:

Support Equipment Required

Quantity	Description	Reference Number
1	Pump, Rotary Vacuum (or equivalent)	1397B-01 NIIN 00-052-5015
As Required	Hose, 3/8- or 1/2-inch inside diameter, Rubber	—

1. Lay bladders/inflation shell assembly on a flat surface. Smooth bladder/inflation shell assembly toward oral inflation tube.

CAUTION

Ensure all air is removed from bladder to prevent possible expansion of trapped air with increasing altitude and for ease of packing.

2. Apply a vacuum to remove all air through oral inflation tube. (Bladder should be wrinkled/puckered around oral inflation tube when all air has been removed.)

3. Turn oral inflation valve locking nut to lock position to ensure no air returns to the bladder.

5-37. PACKING PROCEDURES.

NOTE

The requirement for the packer to sign the Inspection Record Patch on the life preserver was rescinded by the 28th In-Service Management Panel. Justification: Most inspection record history patches become unreadable and packer's and inspector's names are documented on Aviation Crew Systems records. All other documentation requirements remain unchanged.

5-38. Pack the LPU-34/P life preserver as follows:

Support Equipment Required

Quantity	Description	Reference Number
As Required	Spring Clamps (packing aids) (Note 1)	P/N 3201-HT
As Required	Bladder Assembly Keeper (packing aids)	P/N 101202 NIIN 01-469-9567
1	Zipper Slider (packing aid)	P/N 101201 NIIN 01-467-6537
1	Pump, Rotary Vacuum (or equivalent)	NIIN 00-052-5015
As Required	Hose, 3/8 or 1/2-inch, inside diameter, Rubber	—

Notes: 1. The plastic tips of Spring Clamps (packing aids) may become loose and become FOD hazard. To correct and prevent this condition, remove plastic tips from clamp, coat metal tip of clamp with adhesive (MIL-A-5540A), and reinstall plastic tips while adhesive is still tacky. Spring Clamp is available through GSA (www.gsaadvantage.gov)

Materials Required

Quantity	Description	Reference Number
As Required	Thread, Nylon, Size E	P/N V-T-295 NIIN 00-204-3884
1	Valve Stem Kit (Note 1)	P/N 105AS100-6 (CAGE 30003) NIIN 00-113-8290

Notes: 1. Valve Stem Kit, P/N 105AS100-6, NIIN 00-113-8290, contains one top and one bottom gasket.

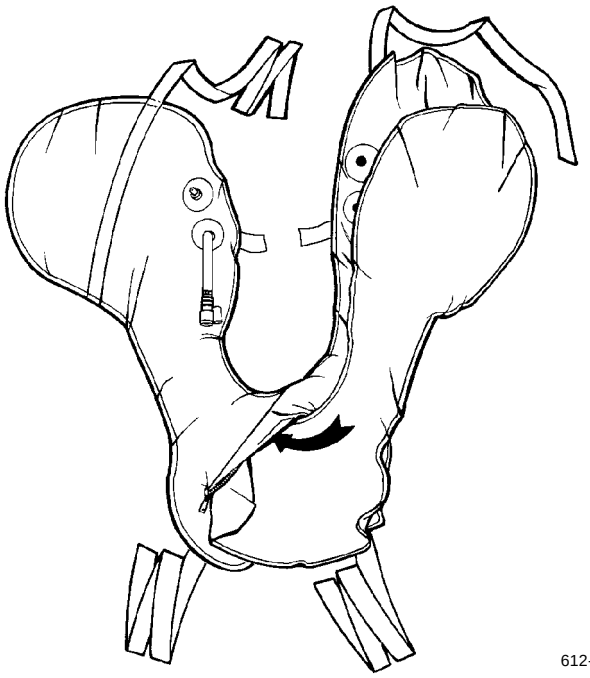
NOTE

Reference to LH and RH refers to wearer's left hand and right hand orientation.

1. Ensure life preserver has received Place In Service inspection in accordance with paragraph 5-23.

2. Remove air from LH and RH bladders. Lay bladder on a flat surface. Smooth bladder toward oral inflation tube. Apply a vacuum to remove all air through oral inflation tube. (Bladder should be wrinkled/puckered around the oral inflation valve when all air has been removed.) Turn locking nut to lock position to ensure no air returns to the bladder.

3. Place inner (bottom) bladder (LH, P/N 102230) into the inflation shell assembly through the zipper opening. Insert valve stem and oral inflation tube through respective holes in inflation shell assembly. Work wrinkles out until bladder is smooth.



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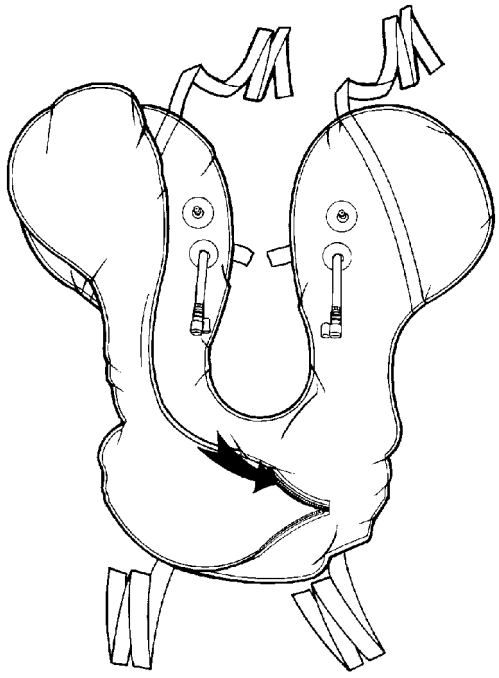
Step 3 - Para 5-38

4. Place outer (top) bladder (RH, P/N 102240) into the inflation shell assembly on top of the inner (bottom) bladder. Work wrinkles out until bladder is smooth.



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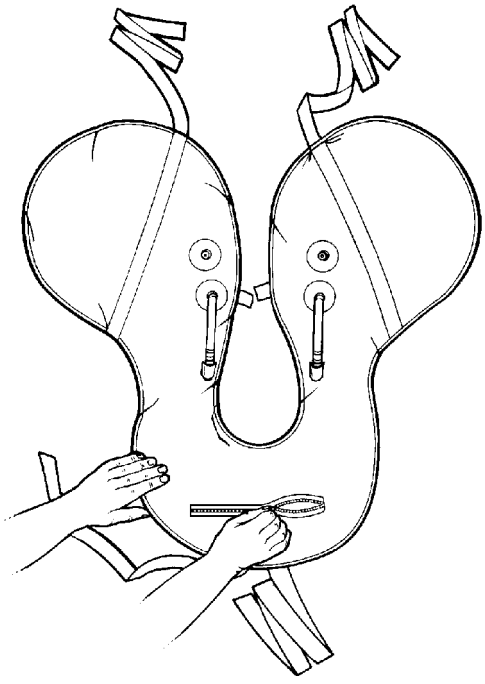
Step 4 - Para 5-38

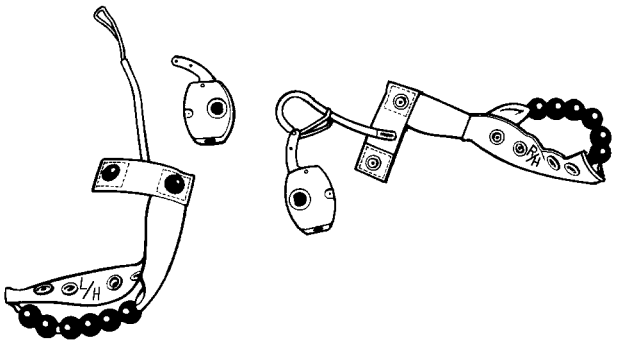
5. Zip the inflation shell assembly closed with bladders in position.



612-95

Step 5 - Para 5-38

6. Attach the black portion of the LH inflation lanyard and beaded handle to the manual inflator actuating lever using a lark's head knot. (LH is marked on the beaded handle, P/N 103251-3.)



612-96

Step 6 - Para 5-38

WARNING

Ensure gaskets are properly positioned. The top gasket has a larger internal diameter than the bottom gasket.

7. Install new gaskets from gasket kit. Place smaller ID gasket on valve stem first.

8. Carefully install inflator with left beaded handle onto the LH valve stem.

NOTE

Inflator lever shall face outboard. Activation arm will pull downward.

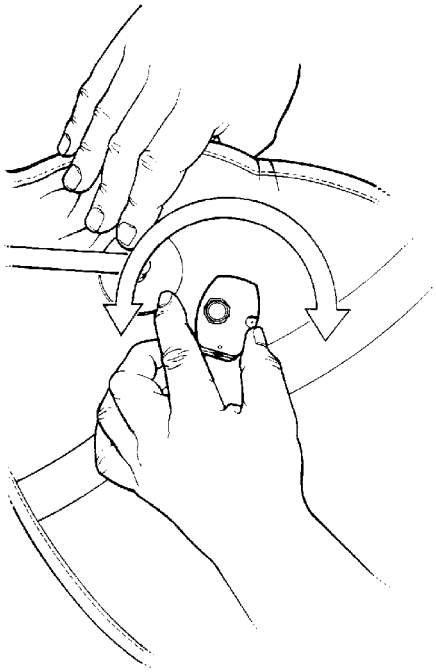
9. Install larger ID gasket onto valve stem.

10. Tighten cap nut on valve stem and torque to value of 15 ±1 in-lb.

CAUTION

Check to ensure there is no trapped cloth material to cause binding and restrict movement of inflator.

11. Grasp the 2-inch diameter reinforcement patch located under the inflator in one hand and the inflator in the other. Holding the patch firmly, attempt to rotate the inflator clockwise and counterclockwise. The inflator should rotate at least one quarter turn in either direction without restriction. If inflator does not bind, proceed to step 12. If inflator is binding, remove cap nut, inflator and both top and bottom gaskets. Discard gaskets and repeat steps 7 through 11.



612-97

Step 11 - Para 5-38

12. Repeat steps 6 through 11 for installation of the RH beaded handle and manual inflator. (RH is marked on the beaded handle, P/N 103251-4.)

13. Ensure seat seal gasket is in place.

14. Ensure CO_2 cylinders have been inspected in accordance with paragraph 5-30.

15. Install CO_2 cylinders, MIL-C-25369C Type III, hand tight.

16. Insert oral inflation tube through hole in upper portion of protective cover and into retaining loop attached to inflation shell assembly. Install RH inflator cover behind and around inflator and CO_2 cylinder.

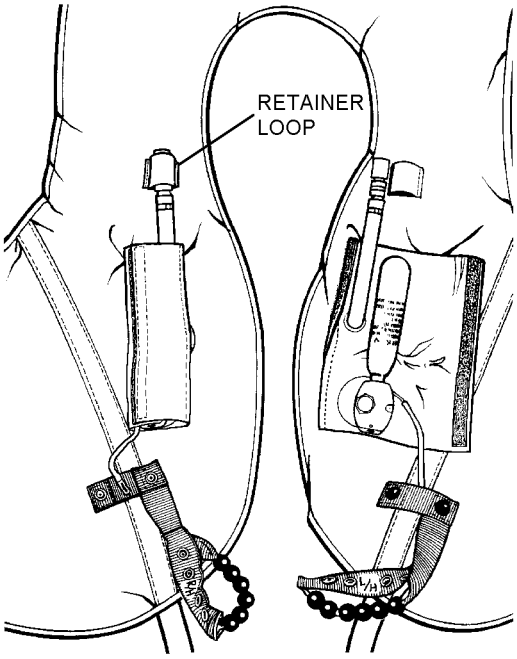
a. Check RH larks head knot for security and proper routing.

b. Check CO_2 cylinder for tightness.

c. Ensure oral inflation valve is locked closed and valve is in loop.

d. Close protective cover and secure with hook and pile fastener.

17. Repeat step 16 for LH side.



612-98

Step 17 - Para 5-38

18. Fold the left side of the inflation shell assembly (steps 18a thru 18h).

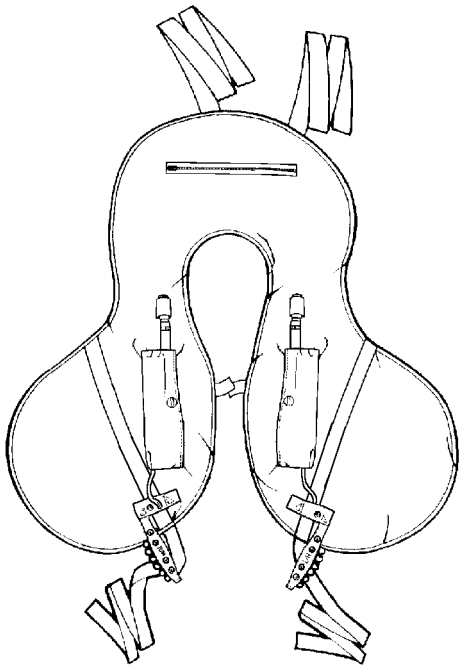
CAUTION

Avoid placing spring clamps (packing aids) directly onto the zipper closure of the inflation shell assembly (P/N 102221). Spring clamps placed on zipper closure may damage bladders.

NOTE

Place packing aids around inflation shell assembly and exterior cover as required to aid in packing and zipper function. Suggested approximate locations are shown.

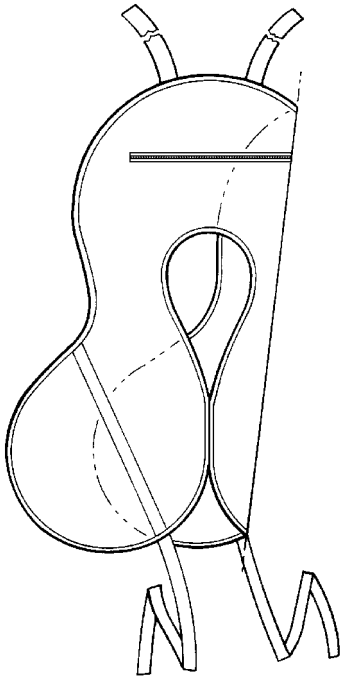
a. Locate the first fold line on the left side of the inflation shell assembly. The line goes from the end of the zipper to the inboard edge of the bottom loop on the inflation shell assembly.



612-99

Figure 5-6. Inflation Shell Assembly

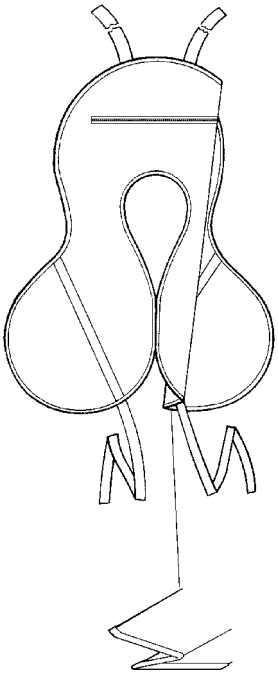
b. Make the first fold under the assembly on the first fold line. Use packing aids as necessary to secure the fold.



612-100

Step 18b - Para 5-38

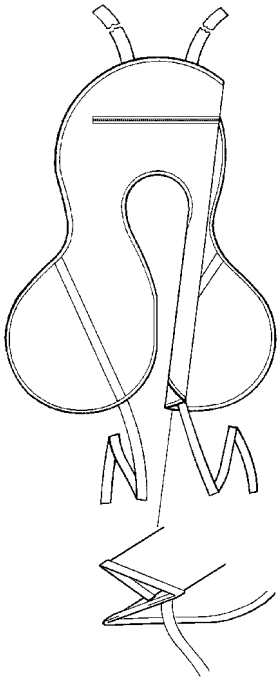
c. Make second fold as shown, 2 inches from the first fold to bring the inflation shell assembly out from under itself except for the 2-inch fold.



612-101

Step 18c - Para 5-38

d. Make third fold as shown, folding inboard edge under inflator.



612-102

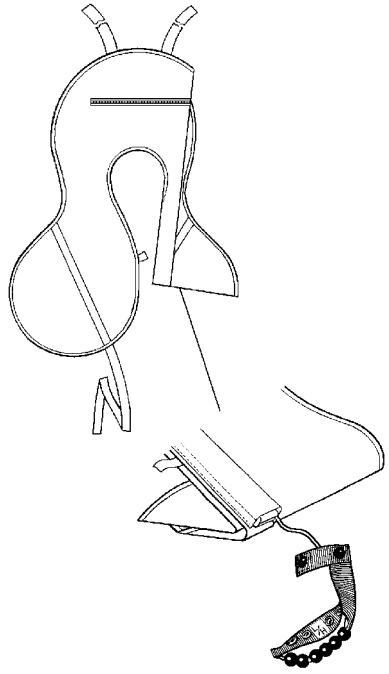
Step 18d - Para 5-38

e. Make fourth fold, folding bottom of inflation shell assembly under the inflator as shown. The fourth fold line is even with the lower edge of the inflator. Use packing aids as necessary to hold all folds in position. Keep lower strap clear of folds.

NOTE

One side of clamp may be placed between inflator and inflation shell assembly to hold fourth fold in position.

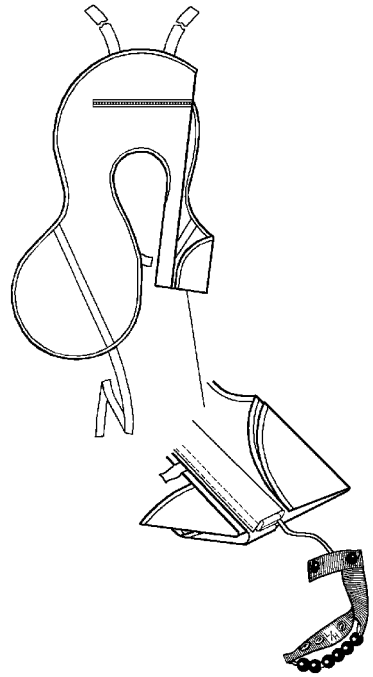
f. Position LH buckle strap to face inboard.



612-103

Step 18f - Para 5-38

g. Make fifth fold, folding outboard edge of inflation shell assembly to meet the inflator.



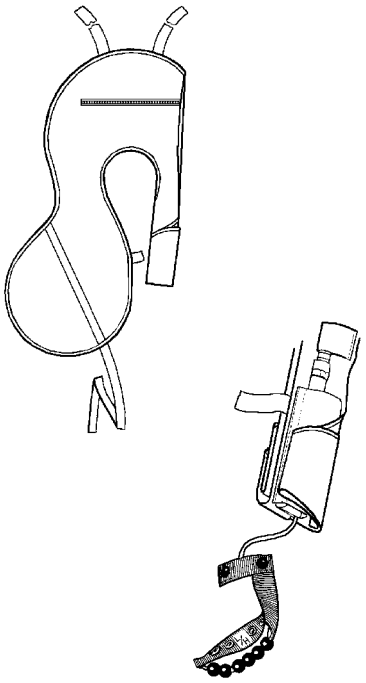
612-104

Step 18g - Para 5-38

NOTE

When placing packing aid (hook and pile) around folded inflation shell assembly, ensure that the LH lower strap is retained by packing aid and facing toward packer.

h. Make sixth fold, folding outboard fifth fold line of inflation shell assembly over the inflator. Secure folds with packing aids as required.



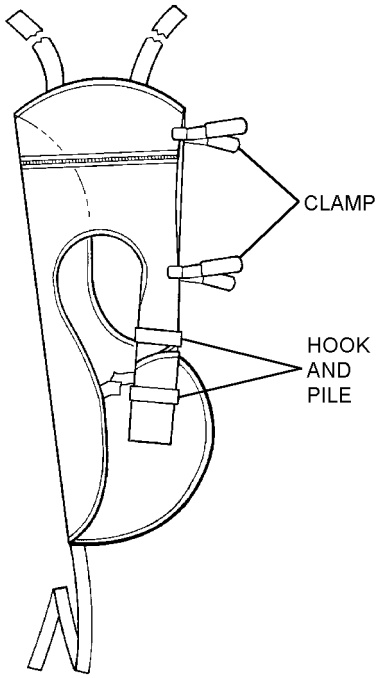
612-105

Step 18h - Para 5-38

19. Fold the right side of the inflation shell assembly (steps 19a through 19h).

a. Locate the first fold line on the right side of the inflation shell assembly. The line goes from the end of the slide fastener to the outboard edge of the bottom loop on the inflation shell assembly.

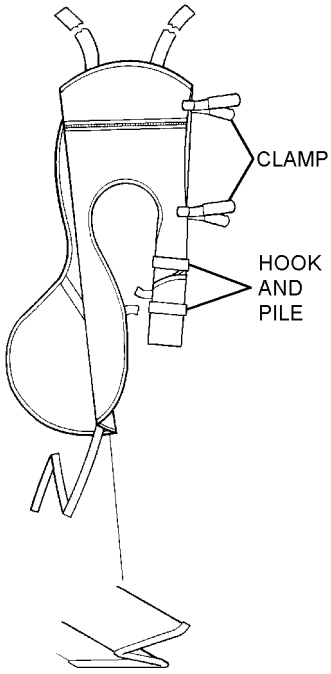
b. Make the first fold under the assembly on the first fold line. Use packing aids as necessary to secure the fold.



612-106

Step 19b - Para 5-38

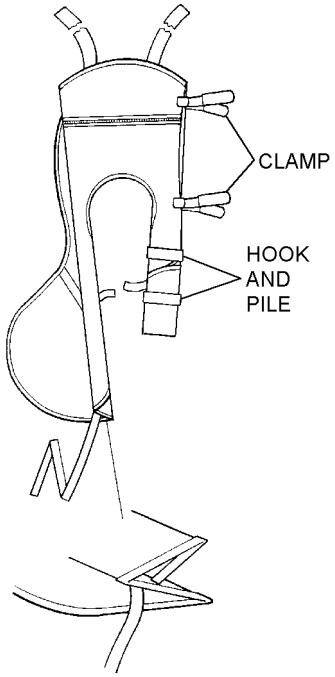
c. Make second fold as shown, 2 inches from the first fold to bring the inflation shell assembly out from under itself except for the 2-inch fold.



612-107

Step 19c - Para 5-38

d. Make third fold as shown, folding inboard edge under inflator.



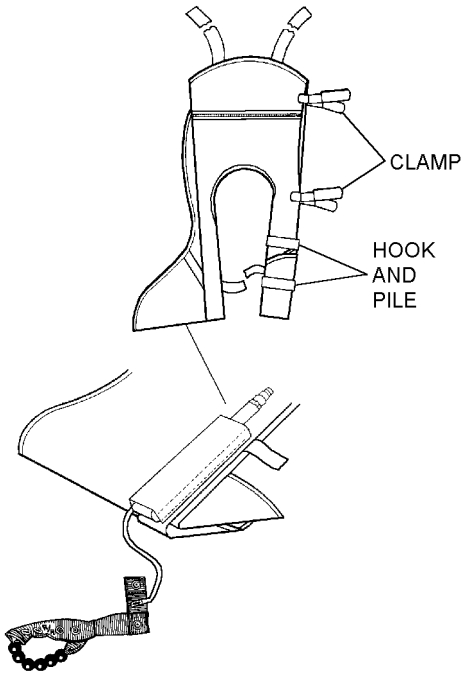
612-108

Step 19d - Para 5-38

e. Make fourth fold, folding bottom of inflation shell assembly under the inflator as shown. The fourth fold line is even with the lower edge of the inflator. Use packing aids as necessary to hold all folds in position. Keep lower strap clear of folds.

NOTE

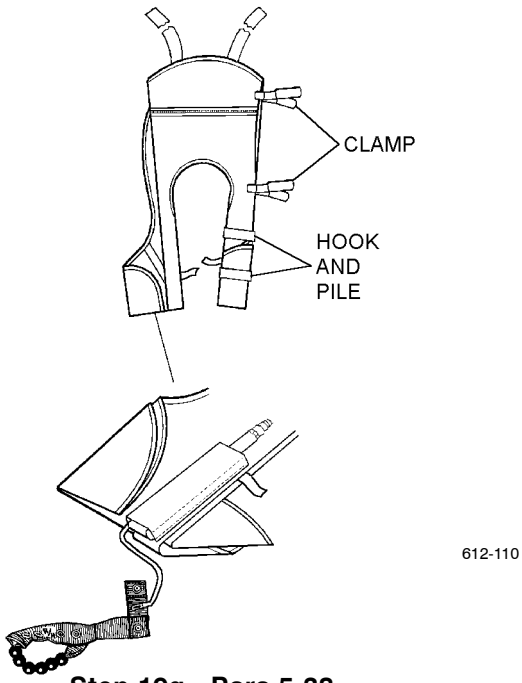
One side of clamp may be placed between inflator and inflation shell assembly to hold fourth fold in position.



Step 19e - Para 5-38

f. Position RH buckle strap to face inboard.

g. Make fifth fold, folding outboard edge of inflation shell assembly to meet the inflator.

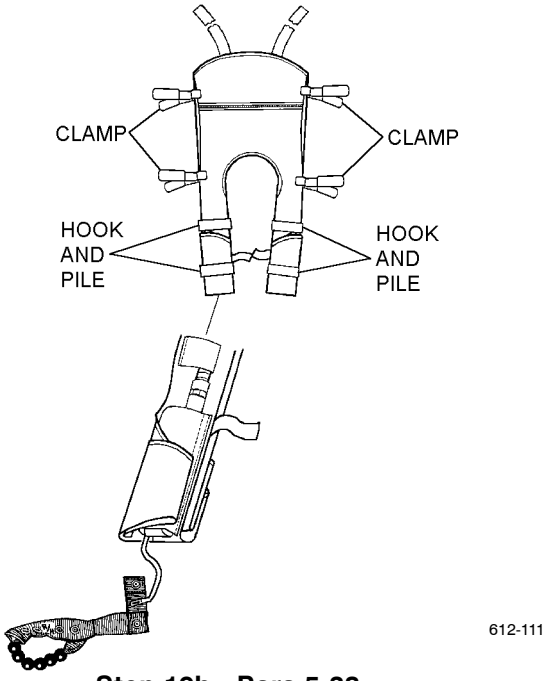


Step 19g - Para 5-38

NOTE

When placing packing aid (hook and pile) around folded inflation shell assembly, ensure that the RH lower strap is retained by packing aid and facing toward packer.

h. Make sixth fold, folding outboard fifth fold line of inflation shell assembly over the inflator. Secure folds with packing aids as required.



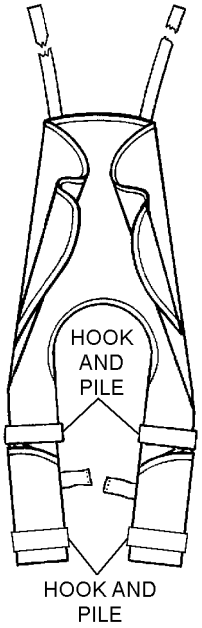
Step 19h - Para 5-38

20. Fold the top of the inflation shell assembly.

a. Fold LH top side inboard. The fold line runs from the outboard edge of the upper strap attachment points to a position on the outboard edge in line with the top of the collar arc. Secure folds with packing aids as required.

b. Deleted

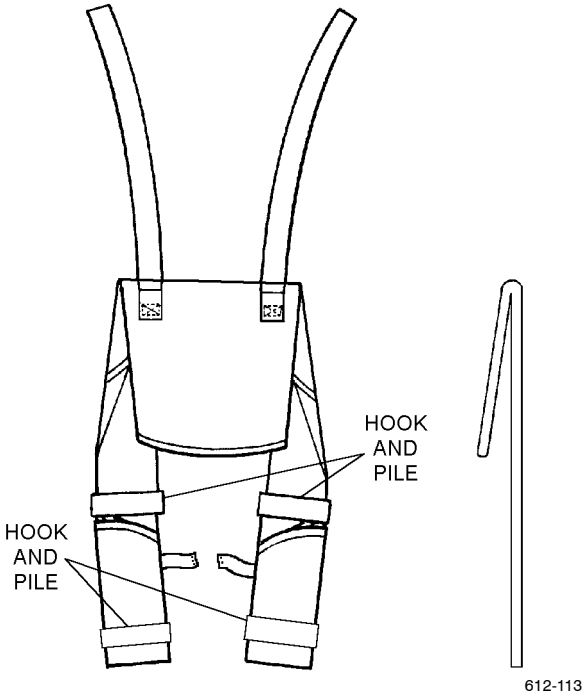
c. Fold RH top side inboard similar to LH top side.



612-112

Step 20c - Para 5-38

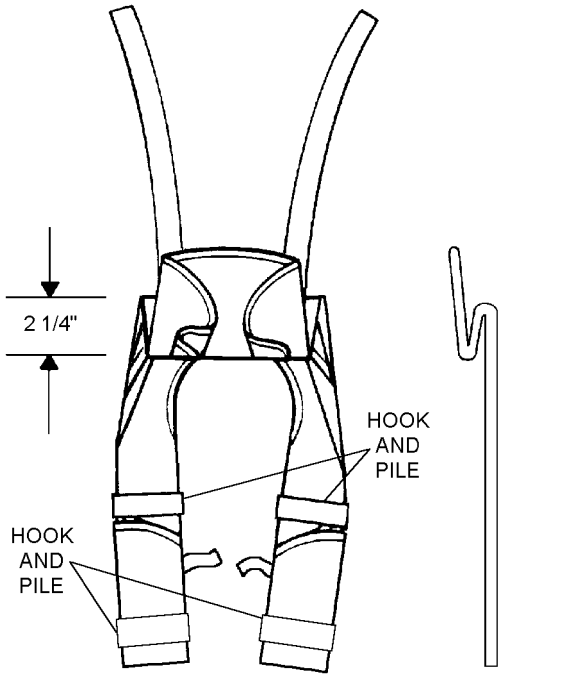
d. Fold top down as shown. Fold line is under upper straps and approximately 2 1/4 inches from the top of the collar arc.



612-113

Step 20d - Para 5-38

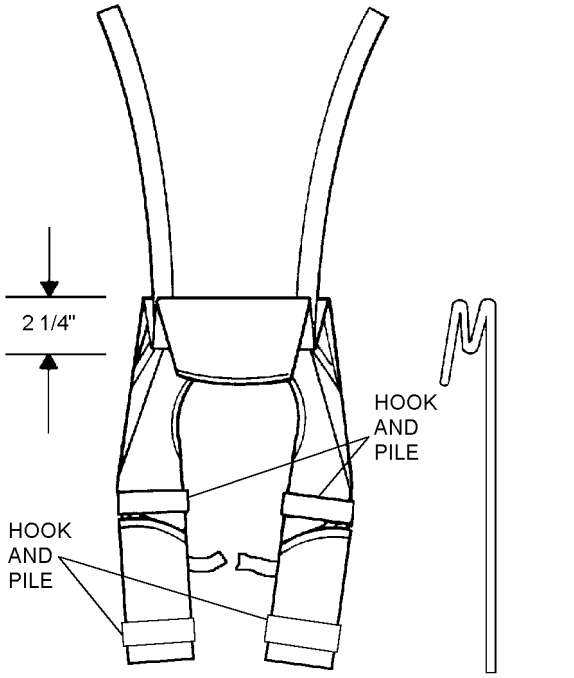
e. Accordion fold top up at the fold line even with the top of the collar arc.



612-114

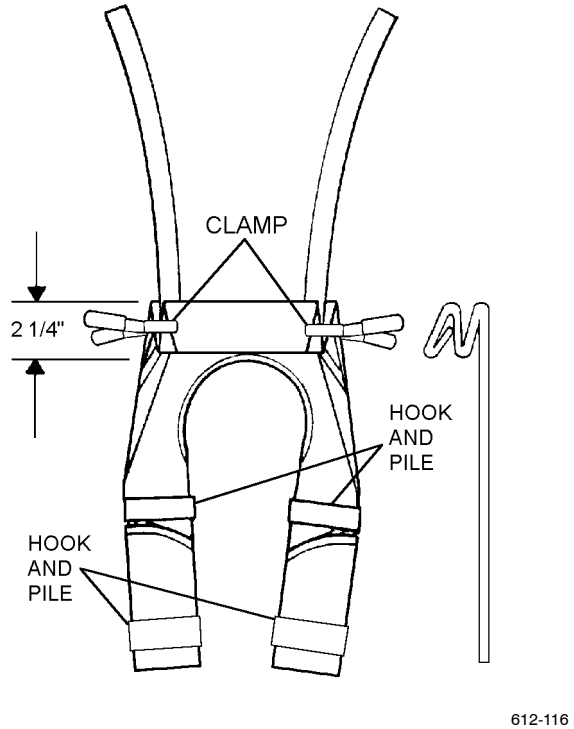
Step 20e - Para 5-38

f. Accordion fold the top down even with the upper fold line.



Step 20f - Para 5-38

g. Tuck the remaining upper portion under the last fold as shown. Do not fold around all folds. Use packing aids to hold in position.

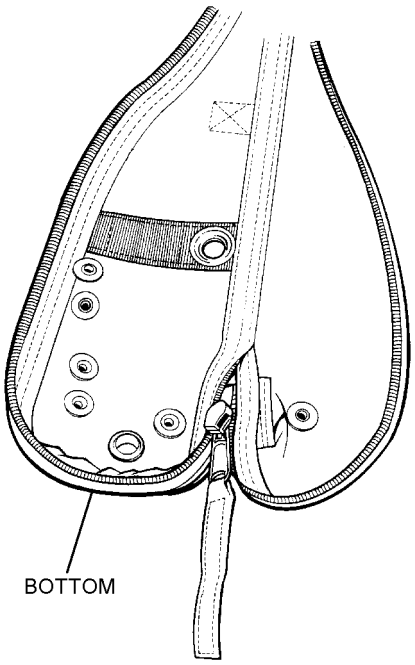


Step 20g - Para 5-38

h. Ensure that all folds are as previously directed.

21. Attach the zipper slider.

a. Attach the zipper slider, flat opening first, on the exterior cover, starting on the RH lower bottom grommet side. Attach the slider to bottom side of the zipper chain. The zipper slider pull tab will be on the outside of the exterior cover.



Step 21a - Para 5-38

b. Bring zipper slider all the way around to the LH side, lower bottom section.

22. Place the folded inflation shell assembly into the open exterior cover, with the inflator on top.

23. Place the LH lower strap through the lower grommet.

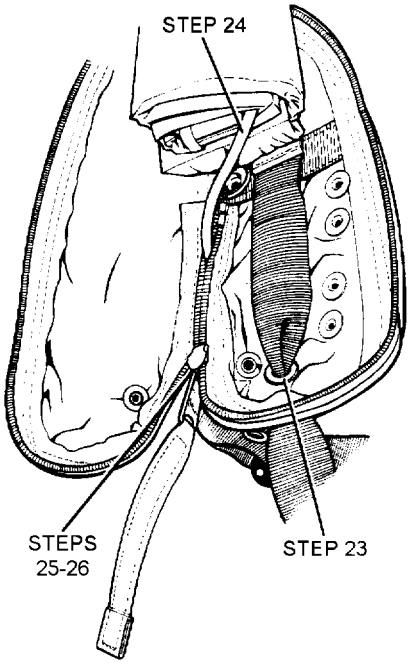
24. For P/N 830AS250-1, position the red inflation lanyard to pass along the bottom of the inflator and between the zipper halves. For P/N 830AS250-3, route red inflation lanyard under the inflator and between zipper halves.

NOTE

Inflation lanyard is routed above the zipper chain halves prior to connecting the second zipper half to zipper slider in order to keep inflation lanyard clear of zipper chain halves.

25. Connect second zipper half to zipper slider.

26. Move zipper slider down to where exterior cover separates, approximately 2 inches from zipper end. Stop zipping. Ensure the red inflation lanyard exits the folded life preserver along the inflation lever, passes along the bottom of the inflator, is not under the LH lower strap, and is in between the two zipper halves. See graphics for steps 23 thru 26 for proper positioning.



612-118

Steps 23 thru 26 - Para 5-38

WARNING

Failure to separate the zipper halves as directed may result in a life preserver malfunction.

27. Separate the end of the zipper halves down to the zipper slider.

28. While pulling LH lower strap down to the stopper, position folded LH inflation shell assembly even with the bottom of the exterior cover.

29. Place LH buckle strap through the left side grommet of the exterior cover.

WARNING

For safety and tool control, ensure all packing aids are removed as slider is closed around life preserver casing.

NOTE

Close exterior cover carefully. Do not force zipper slider.

30. Zip the exterior cover around bottom and up the side approximately 4 to 6 inches. Remove any packing aids in inflator area before zipping closed.

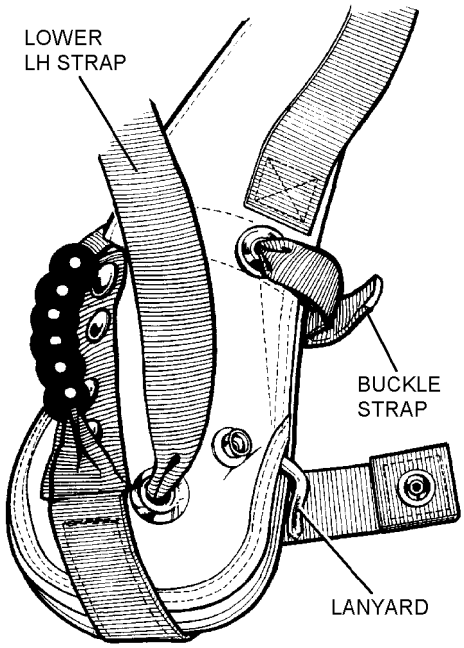
31. Turn life preserver over to attach the LH beaded handle to the exterior cover.

a. Secure snap located at 90 degree elbow of beaded handle webbing to exterior cover snap on front of life preserver.

CAUTION

Beaded handle webbing must not trap lower LH strap leading from grommet on back of exterior cover. Lower strap must be able to fall free from grommet.

b. Route beaded handle webbing down and around end of life preserver, up to left of lower LH strap grommet, and secure beaded handle to four snaps on exterior cover.

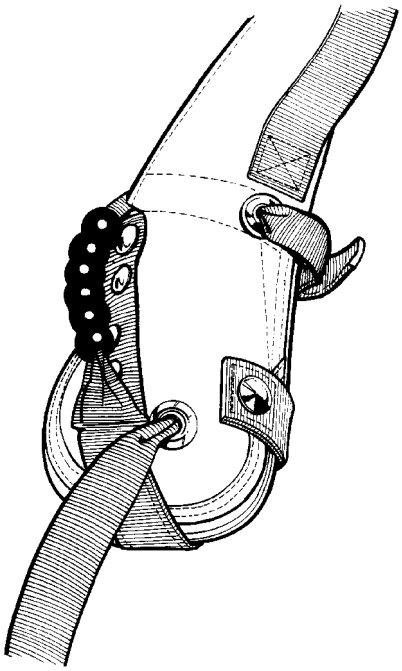


612-119

Step 31b - Para 5-38

32. With one hand holding the exterior cover, push the folded inflation shell assembly down as far as possible to form a snug fit inside the bottom of the exterior cover.

33. Ensure any excess length of inflation lanyard is tucked inside exterior cover. Then secure end of beaded handle webbing to snap located above and to right of lower LH strap grommet on back of life preserver.



612-120

Step 33 - Para 5-38

34. Place upper LH and RH straps through upper grommets in the exterior cover.

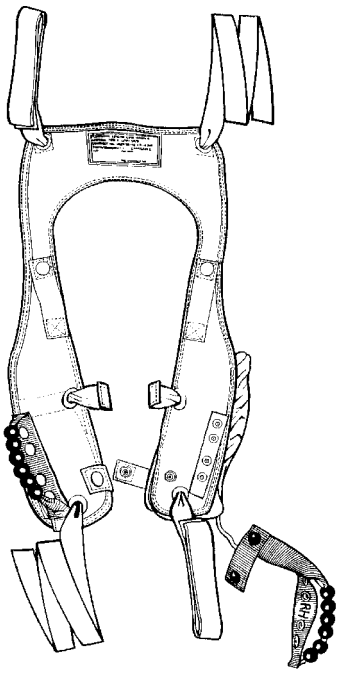
35. Close exterior cover carefully by zipping up the side and across the top. Do not force the zipper slider.

CAUTION

Remove packing aids while zipping.

36. Place RH buckle strap through the right side grommet of the exterior cover.

37. Place lower RH strap through the bottom RH grommet.



612-121

Step 37 - Para 5-38

CAUTION

Ensure no zipper separation occurs while zipping.

NOTE

Push inflation shell assembly up into exterior cover. This will aid in zipping around bottom of right side.

38. Continue zipping around exterior cover, stopping about 3 to 4 inches from bottom right side. Do not force the zipper slider.

39. Ensure the red inflation lanyard exits the folded life preserver along the inflation lever, passes along the bottom of the inflator and is not under the RH lower strap.

NOTE

Tuck excess length of red inflator lanyard back into exterior cover.

40. Continue zipping around bottom, making sure the RH inflation lanyard and beaded handle exit at zipper end.

NOTE

Check for zipper separation before removal of zipper slider. If separation is found, unzip slider past point of separation and reclose zipper. Apply packing aids as needed.

41. Remove zipper slider and retain for tool inventory.

42. Turn life preserver over to attach the RH beaded handle to the exterior cover.

a. Secure snap at 90 degree elbow of beaded handle webbing to exterior cover snap on front of life preserver.

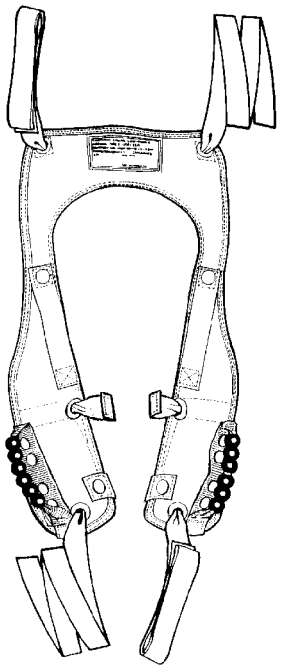
CAUTION

Beaded handle must not trap lower RH strap leading from grommet on back of exterior cover. Lower strap must be able to fall free from grommet.

b. Route beaded handle webbing down and around end of life preserver, up to right of grommet for lower RH strap, and secure beaded handle to four snaps on exterior cover.

43. Ensure any excess length of inflation lanyard is tucked inside exterior cover. Then secure end of beaded handle webbing to snap located above and to left of lower RH strap on back of life preserver.

44. Grasp the ends of the upper and lower LH straps and pull until the cloth stoppers are tight against the grommets. Repeat for the RH side.



612-122

Step 44 - Para 5-38

45. Deleted

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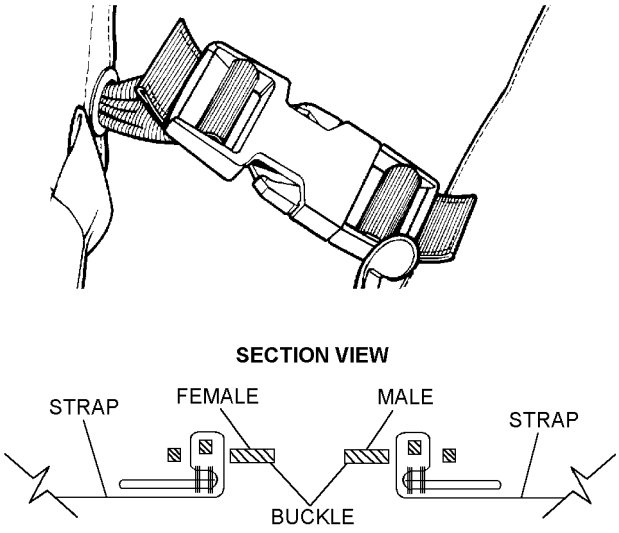
NOTE

Use only Buckle P/N 101-1100-5614. There are no authorized substitutes.

46. From the front side of the collar, weave the LH buckle strap through the LH (male) buckle half as shown. Insert strap through the single opening side of the buckle first.



Step 46 - Para 5-38

47. Weave the RH buckle strap through the RH (female) buckle half in the same manner as the LH side.

48. Deleted

49. Inspect the zipper edge to ensure no coil separation. If separation is found, the exterior cover must be reassembled. Inspect male and female buckle halves for proper installation.

50. Account for all tools and packing aids.

51. Make necessary entries on appropriate forms in accordance with OPNAVINST 4790.2 Series.

5-39. CLEANING AND SALTWATER DECONTAMINATION.

5-40. CLEANING. If required to clean any portion of the life preserver, remove any detachable items and proceed as follows:

Materials Required

Quantity	Description	Reference Number
As Required	Detergent, General Purpose	MIL-D-16791 NIIN 00-282-9699
As Required	Lint-free Cloth, Type II	MIL-C-85043 NIIN 00-044-9281

CAUTION

Solvents shall not be used to clean life preservers.

1. Prepare solution of detergent (MIL-D-16791) consisting of 1/4 to 1/2 ounce of detergent per gallon of water.

2. Apply cleaning solution to soiled area with a spray or sponge.

3. Allow solution to remain on surface for several minutes, then agitate with a soft brush or rag.

4. Rinse surface thoroughly with water, wipe with a cloth or sponge. Repeat this application until surface is free from all solution.

5. Dry life preserver with a lint-free cloth (MIL-C-85043) and allow to dry completely.

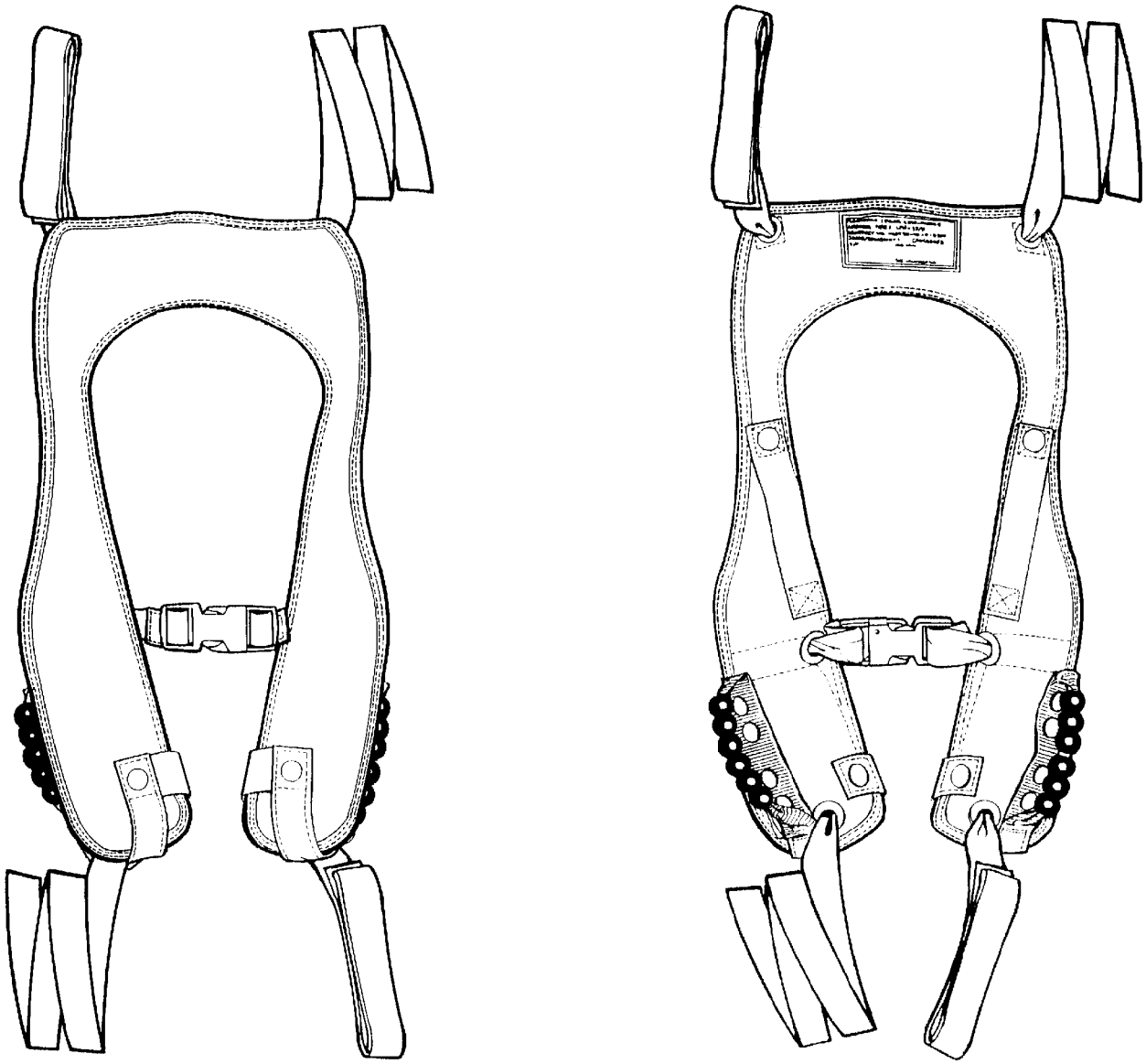
5-41. SALTWATER DECONTAMINATION. After every immersion in salt water, the life preserver shall be rinsed in clean fresh water as follows:

1. Rinse all components in fresh water.

2. Inflate bladder with air and allow to dry.

3. Clean all components in accordance with paragraph 5-40.

4. Perform 360-Day Special Inspection in accordance with paragraph 5-22.



612-83

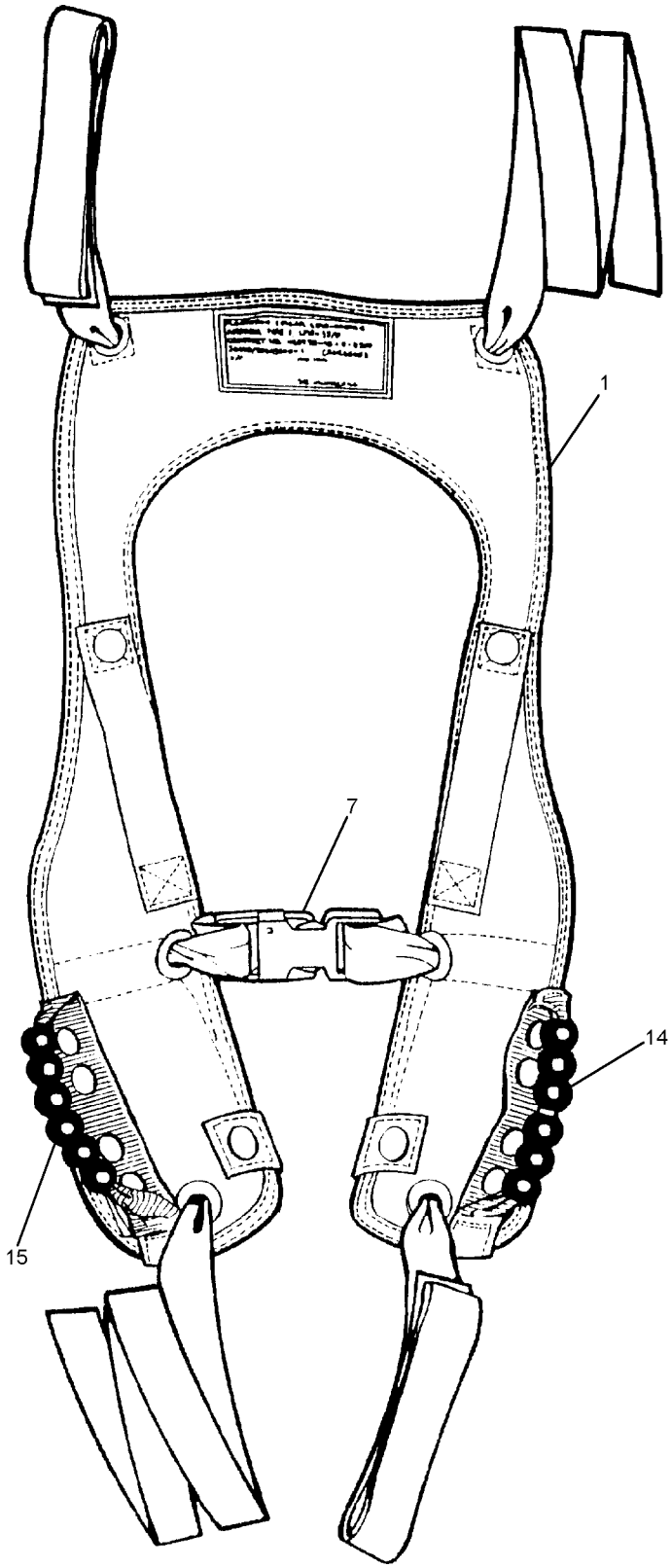
Figure 5-7. LPU-34/P Life Preserver, Packed

Section 5-4. Illustrated Parts Breakdown (IPB)

5-42. GENERAL.

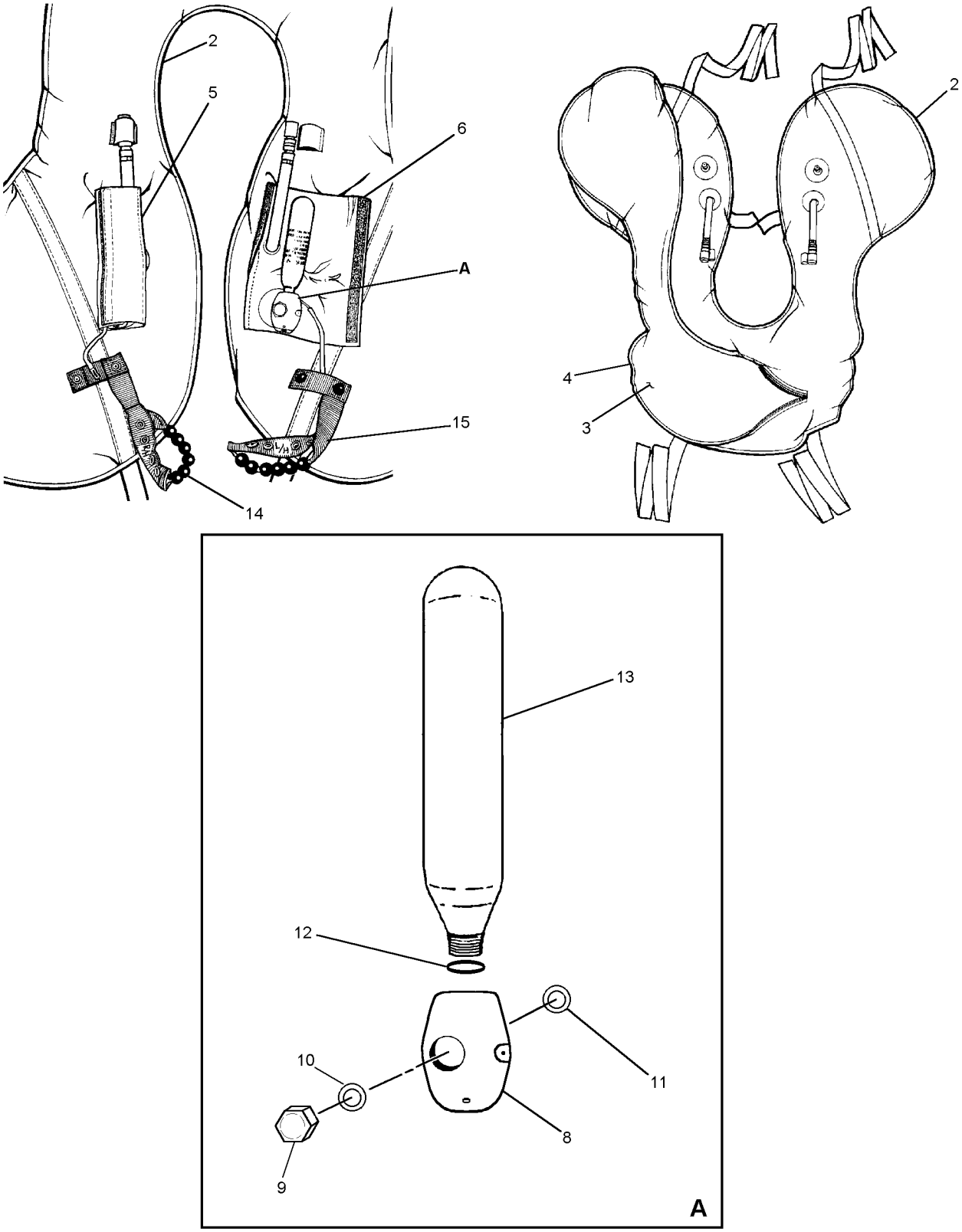
5-43. This section lists and illustrates the assemblies and detail parts of the LPU-34/P Low Profile Floatation Collar.

5-44. The Illustrated Parts Breakdown should be used during maintenance when requisitioning and identifying parts.



612-126

Figure 5-8. LPU-34/P, Low Profile Floatation Collar, Life Preserver (Sheet 1 of 2)



612-127

Figure 5-8. LPU-34/P, Low Profile Floatation Collar, Life Preserver (Sheet 2 of 2)

Figure and Index Number	Part Number	Description 1 2 3 4 5 6 7	Units Per Assembly	Usable On Code
5-8	830AS250-1	LPU-34/P, Low Profile Floatation Collar, ... Life Preserver	REF	A
	830AS250-3	LPU-34/P, Low Profile Floatation Collar, ... Life Preserver	REF	B
-1	103210	. EXTERIOR COVER ASSEMBLY/CASING . . . . . (CAGE 05DK2)	1	
-2	102221	. INFLATION SHELL ASSEMBLY . . . . . (CAGE 05DK2)	1	
-3	102230	. INNER (BOTTOM) INFLATABLE . . . . . ASSEMBLY (CAGE 05DK2)	1	
-4	102240	. OUTER (TOP) INFLATABLE ASSEMBLY . . . . . (CAGE 05DK2)	1	
-5	102228-1	. INFLATOR COVER RH (CAGE 05DK2)	1	
-6	102228-2	. INFLATOR COVER LH (CAGE 05DK2)	1	
-7	101-1100-5614	. PLASTIC BUCKLE, Male/Female (Note 3) . . . . . (CAGE 02768)	1	
-8	840AMLS	. INFLATION DEVICE, Manual . . . . . (CAGE 30003)	2	
		(ATTACHING PARTS)		
-9	52A6600	. VALVE CAP, Inflator (CAGE 80049)	2	
-10	105AS100-3	. GASKET, Top (CAGE 30003) (Note 1)	2	
-11	105AS100-4	. GASKET, Bottom (CAGE 30003) (Note 1)	2	
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-12	849AML	. . SEAT SEAL	2	
-13	MIL-C-25369C	. CO_2 CYLINDER, Type III, 35 Gram	2	
-14	103251-3	. BEADED HANDLE RH (CAGE 05DK2)	1	B
-15	103251-4	. BEADED HANDLE LH (CAGE 05DK2)	1	B

Notes:
1. Top and bottom gaskets are obtained from Valve Stem Kit, P/N 105AS100-6, NIIN 00-113-8290, which contains one top and one bottom gasket.
2. Packing Aids for LPU-34/P: Zipper Slide Assembly, P/N 101201 (CAGE 05DK2) Bladder Assembly Keeper (4), P/N 101202 (CAGE 05DK2), 1″ Spring Clamp, P/N 3201-HT.
3. No substitutes authorized.

NUMERICAL INDEX

Part Number	Figure and Index Number	SM&R Code
MIL-C-25369C	5-8-13	PAGZZ
101-1100-5614	5-8-7	PAGZZ
102221	5-8-2	PAGZZ
102228-1	5-8-5	PAGZZ
102228-2	5-8-6	PAGZZ
102230	5-8-3	PAGZZ
102240	5-8-4	PAGZZ
103210	5-8-1	PAGZZ
103251-3	5-8-14	PAGZZ
103251-4	5-8-15	PAGZZ
105AS100-3	5-8-10	PAGZZ
105AS100-4	5-8-11	PAGZZ
52A6600	5-8-9	PAGZZ
830AS250-1	5-8	PCGZZ
840AMLS	5-8-8	
849AML	5-8-12	XAGZZ

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