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SERVICE MANUAL

FOR

SEASAVAplus X

SEASAVAplus R

EXTENDED SERVICE LEISURE LIFERAFTS

This Manual: Part Number 06489009

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0-0
202-0
Apr/97

STATEMENT OF CERTIFICATION

The extended service leisure liferafts described in this manual have been designed, manufactured and tested as yachtsmen's liferafts in accordance with the requirements of the Special Regulations of the Offshore Racing Council (Appendix 2 thereof).

The technical accuracy of this manual has been verified and is certified as correct.

Signed:



Date:

17-12-96

D.G. Keown

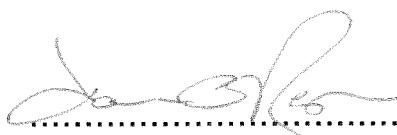
Technical Manager, Marine Products
RFD Limited

To: All Holders of Manual No. **06489009**

Title: **SEASAVAplusX/SEASAVAplusR Liferafts - Service Manual (Ref. No. 202-0)**

Revision No. 2 - Dated Oct/97

The technical Accuracy of this revision has been verified and is certified as correct.

Signed: 

Date: 23-9-97

D.G.Keown
Technical Manager, Marine Products
RFD Ltd.

The following actions should be taken to revise your copy of the above manual to the status required by this revision.

OLD PAGE

Remove and Destroy

Chapter 10, Pages 1003 & 1004

Chapter 8, Pages 808 & 825

Chapter 5, Pages 507 to 510

List of Effective Pages Pages 5 & 6

Record of Revisions Page 3/4

NEW PAGE

Insert

Chapter 10, New Pages 1003 & 1004

Chapter 8, New Pages 808 & 825

Chapter 5, New Pages 507 to 510

List of Effective Pages New Pages 5 & 6

Record of Revisions New Page 3/4

RECORD THE INCORPORATION OF THIS REVISION ON THE REVISION RECORD.
RETAIN THIS LETTER OF TRANSMITTAL, FILE IT BEHIND THE REVISION RECORD.

Transmittal
202-0
Page 1
Oct/97

To: All Holders of Manual No. **06489009**Title: **SEASAVplus X Liferafts - Service Manual (Ref. No. 202-0)****Revision No. 1 - Dated Apr/97**

The technical Accuracy of this revision has been verified and is certified as correct.

Signed: Date: 19-3-97

D.G.Keown
Technical Manager, Marine Products
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The following actions should be taken to revise your copy of the above manual to the status required by this revision.

OLD PAGERemove and Destroy *

Title Page

Revision Record Page 3/4

Effective Page List Page 5/6

Chapter 1, Pages 101 - 106

Chapter 8, Pages 801, 803, 804,
806 - 811, 814 - 817Parts List, Pages 1107, 1109,
1111, 1113, 1115 & 1122NEW PAGEInsert

New Title Page

New Revision Record Page 3/4

New Effective Page List Page 5/6

New Chapter 1, Pages 101 - 106

Chapter 8, New Pages 801, 803, 804,
806 - 811, 814 - 817
Additional Pages 820 - 828Parts List New Pages 1107, 1109,
1111, 1113, 1115 & 1122
Additional Pages 1123 - 1136

* See note overleaf.....

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Transmittal
202-0
Page 1
Apr/97



RFD Ltd. Kingsway, Dunmurry, Belfast BT17 9AF, Northern Ireland
Telephone: +44 (0) 1232 301531 Fax: +44 (0) 1232 621765

Note: The revised text of this manual describes the employment of redesigned encapsulation bags replacing PN 42537001 as from 01-01-97.

Service stations are permitted to use up stocks of 42537001 in their possession; however, the replaced pages of Chapter 8 should then be retained for use until such stocks are expended. **Those pages must then be destroyed.** All spares orders for encapsulating bags shall, from January 1997, be satisfied using the redesigned bags.

Transmittal

202-0

Page 2

Apr/97

RECORD OF REVISIONS

REVISION NUMBER	ISSUE DATE	DATE INSERTED	INSERTED BY:
Initial Issue	Dec/96	Dec/96	RFD Ltd
Revision 1	Apr/97		
Revision 2	Oct/97		

RFD **SEASAVA**plus**X** SERVICE MANUAL

THIS PAGE IS EMPTY

LIST OF EFFECTIVE PAGES

PAGE TITLE	PAGE No.	ISSUE DATE	PAGE TITLE	PAGE No.	ISSUE DATE
TITLE PAGE		Apr/97	CHAPTER 5	501	Dec/96
				502	Dec/96
CERTIFICATION PAGE	1	Dec/96		503	Dec/96
	2	Dec/96		504	Dec/96
				505	Dec/96
REVISION RECORD	3	Oct/97		506	Dec/96
	4	Dec/96		507	Oct/97
				508	Oct/97
EFFECTIVE PAGES	5	Oct/97		509	Oct/96
	6	Oct/97		510	Oct/96
				511	Dec/96
ASSOCIATED PUBLICATIONS	7	Dec/96		512	Dec/96
	8	Dec/96	CHAPTER 6	601	Dec/96
TABLE OF CONTENTS	9	Dec/96		602	Dec/96
	10	Dec/96		603	Dec/96
				604	Dec/96
INTRODUCTION TO THE MANUAL	11	Dec/96		605	Dec/96
	12	Dec/96		606	Dec/96
	13	Dec/96		607	Dec/96
	14	Dec/96		608	Dec/96
				609	Dec/96
CHAPTER 1	101	Apr/97		610	Dec/96
	102	Apr/97		611	Dec/96
	103	Apr/97		612	Dec/96
	104	Apr/97		613	Dec/96
	105	Apr/97		614	Dec/96
	106	Apr/97		615	Dec/96
				616	Dec/96
CHAPTER 2	201	Dec/96		617	Dec/96
	202	Dec/96		618	Dec/96
	203	Dec/96	CHAPTER 7	701	Dec/96
	204	Dec/96		702	Dec/96
	205	Dec/96		703	Dec/96
	206	Dec/96		704	Dec/96
CHAPTER 3	301	Dec/96	CHAPTER 8	801	Apr/97
	302	Dec/96		802	Dec/96
	303	Dec/96		803	Apr/97
	304	Dec/96		804	Apr/97
CHAPTER 4	401	Dec/96		805	Dec/96
	402	Dec/96		806	Apr/97
	403	Dec/96		807	Apr/97
	404	Dec/96		808	Oct/97
	405	Dec/96		809	Apr/97
	406	Dec/96		810	Apr/97

LIST OF EFFECTIVE PAGES

PAGE TITLE	PAGE No.	ISSUE DATE	PAGE TITLE	PAGE No.	ISSUE DATE
CHAPTER 8		Continued:		1116	Dec/96
				1117	Dec/96
	811	Apr/97		1118	Dec/96
	812	Dec/96		1119	Dec/96
	813	Dec/96		1120	Dec/96
	814	Apr/97		1121	Dec/96
	815	Apr/97		1122	Apr/97
	816	Apr/97		1123	Apr/97
	817	Apr/97		1124	Apr/97
	818	Apr/97		1125	Apr/97
	819	Dec/96		1126	Apr/97
	820	Apr/97		1127	Apr/97
	821	Apr/97		1128	Apr/97
	822	Apr/97		1129	Apr/97
	823	Apr/97		1130	Apr/97
	824	Apr/97		1131	Apr/97
	825	Oct/97		1132	Apr/97
	826	Apr/97		1133	Apr/97
	827	Apr/97		1134	Apr/97
	828	Apr/97		1135	Apr/97
				1136	Apr/97
CHAPTER 9	901	Dec/96			
	902	Dec/96	APPENDIX 1	A1-1	Dec/96
	903	Dec/96		A1-2	Dec/96
	904	Dec/96		A1-3	Dec/96
				A1-4	Dec/96
CHAPTER 10	1001	Dec/96			
	1002	Dec/96			
	1003	Oct/97			
	1004	Oct/97			
CHAPTER 11 (Parts List)	1101	Dec/96			
	1102	Dec/96			
	1103	Dec/96			
	1104	Dec/96			
	1105	Dec/96			
	1106	Dec/96			
Parts List	1107	Apr/97			
	1108	Dec/96			
	1109	Apr/97			
	1110	Dec/96			
	1111	Apr/97			
	1112	Dec/96			
	1113	Apr/97			
	1114	Dec/96			
	1115	Apr/97			

LIST OF ASSOCIATED PUBLICATIONS

INFLATION EQUIPMENT

Manual No.

01-01-91 Overhaul Manual - Cylinder Valve.

N/A Overhaul Manual - DK88 Operating Head.

The above manuals are published by the manufacturer:-

Thanner & Co A/S, Randersvej 8-10,
DK-6700, Esbjerg, Denmark.

LEL-16-UG-02258 Overhaul Manual - CV1 Cylinder Valve and
OH1 Operating Head.

The above manual is published by the manufacturer:-

**Leafield Engineering Co,
Leafield, Corsham, Wiltshire,
SN13 9SS. United Kingdom.**

06180009 Assembly and Charging of Transportable Gas Cylinders.

The above manual is published by the manufacturer:-

RFD Limited, Kingsway, Dunmurry,
Belfast, BT17 9AF, N. Ireland.

RFD SEASAVA plus X SERVICE MANUAL

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TABLE OF CONTENTS

<u>Chapter</u>	<u>Title</u>	<u>Page</u>
Introduction	Introduction to the Manual	11
1	Description and Data	101
2	Removal and Unpacking	201
3	Cleaning	301
4	Inspection and Checking	401
5	Testing and Trouble Shooting	501
6	Repair	601
7	Emergency Packs and Equipment.....	701
8	Assembly and Repacking.....	801
9	Storage Conditions and Instructions	901
10	Special Tools, Equipment and Materials	1001
11	I.P.L. Introduction	1101
I.P.L.	Illustrated Parts List.....	1107
Appendix 1	Necessary Additional Actions	A1-1

RFD SEASAVAplus X SERVICE MANUAL

THIS PAGE IS EMPTY

INTRODUCTION TO THE MANUAL

<u>Section</u>	<u>Page</u>
A. General	12
B. Manual Breakdown.....	12
Chapter and Page Numbers	
List of Effective Pages	
Record of Revisions	
Associated Publications	
C. WARNINGS, CAUTIONS AND NOTES	13
D. Health and Safety	14
E. List of Abbreviations	14

INTRODUCTION TO THE MANUAL

A. General

This manual contains descriptive information and details the work to be done on the equipment and its components when removed from the vessel.

B. Manual Breakdown

Chapters and Page Numbers

1. The Chapter and Page Number blocks are as follows:

Chapter	Page Nos.	Title
-	1 - 99	Preliminary
1	101 - 199	Description and Data
2	201 - 299	Removal and Unpacking
3	301 - 399	Cleaning
4	401 - 499	Inspection and Checking
5	501 - 599	Testing and Trouble Shooting
6	601 - 699	Repair
7	701 - 799	Emergency Packs and Equipment
8	801 - 899	Assembly and Repacking
9	901 - 999	Storage Conditions and Instructions
10	1001 - 1099	Tools, Equipment and Materials
11	1101 - 1199	Illustrated Parts List

List of Effective Pages

3. The List of Effective Pages details all the pages that are contained in the manual and indicates the issue dates of those pages allowing the manual content to be checked for completeness and currency. This list is included in the preliminary pages of the manual.

Record of Revisions

4. Modifications to the equipment will be embodied under the approval of the Manufacturers. When required, the pages of this manual will be amended, approved and re-issued as a revision.
5. A revision to the manual consists of a transmittal letter, a revised List of Effective Pages, and new or revised text and illustrations. Revised contents lists are issued when necessary.
6. The transmittal letter carries at its head the certification statement which authorises the revision. It lists, in general terms, the contents of the revision in the manual. All pages that are required to be removed without replacements are listed. All other out of date pages are to be removed when superseding pages of the same number are inserted. All additional pages to be inserted are also listed where applicable.
7. The transmittal letters are to be filed behind the Record of Revisions page at the front of the manual.

Associated Publications

8. The list of Associated Publications containing details of the manuals published by the manufacturer of a component fitted to, or used in conjunction with, the equipment described in this manual. This list, where applicable, is located at the front of the manual.

C. WARNINGS, CAUTIONS AND NOTES**WARNING:**

A WARNING calls attention to a procedure which if incorrectly performed is liable to cause injury or death to personnel.

CAUTION:

A CAUTION calls attention to a procedure which if incorrectly performed is liable to cause damage to the equipment or its components.

Note:

A NOTE calls attention to methods which make the job easier.

D. Health and Safety

RFD Limited shall not be deemed by virtue of any of these instructions to have assumed any of the responsibilities of the Service Agent or Operator under the HEALTH AND SAFETY AT WORK ACT or any such enactment.

E. List of Abbreviations

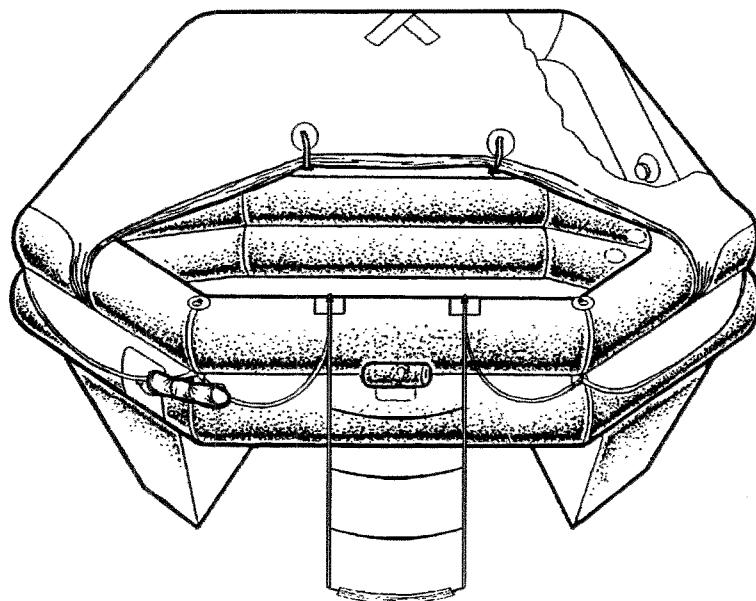
AR	As Required	m.	metre(s)
assy.	Assembly	mm.	millimetre(s)
C.	Celcius	mm WG	millimetres of Water Gauge
cc.	Cubic Centimetre(s)	max.	Maximum
cm.	centimetre(s)	min.	Minimum
c/w	Complete With	Mod.	Modification
dia.	Diameter	Nm	Newton Metre(s)
g.	Gramme	o/d	Outside Diameter
g/cm ²	Grammes per square centimetre	Spec.	Specification
i/d	Inside Diameter	P/N	Part Number
instl.	Installation	PU	Polyurethane
Kg.	Kilogramme	PVC	Polyvinylchloride
L.H.	Left Hand	RF	Reference
R.H.	Right Hand		

CHAPTER 1

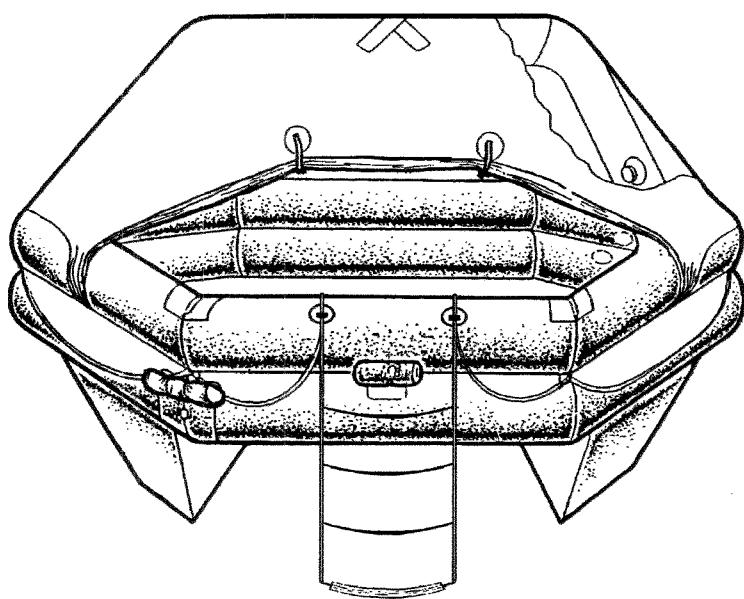
DESCRIPTION, OPERATION AND DATA

<u>Section</u>	<u>Page</u>
A. Introduction	103
B. The Seasava Plus X Liferaft (Pre-1997)	104
C. The Seasava Plus R Liferaft (1997 onwards)	104
D. Operation	104
E. Data	105

RFD SEASAVAplus X SERVICE MANUAL



SEASAVApplus R LIFERAFT (1997 Onwards)



SEASAVApplus X LIFERAFT (Pre-1997)

Figure 101

CHAPTER 1

DESCRIPTION, OPERATION AND DATA

A. Introduction

The range of RFD inflatable liferafts covered by this manual have been specifically designed for the users of pleasure craft, i.e. yachts, motor cruisers, etc. There are three sizes of liferaft in each range with designed capacities of 4, 6 or 8 persons.

The liferafts have two superimposed buoyancy chambers forming a high freeboard, an insulated floor constructed from sandwiched layers of material (the SEASAVApplus R liferafts offer an alternative, single skin floor), and an automatically erected canopy for all-weather protection that incorporates a door and a rainwater catchment system. The canopy is supported by an arch tube which is inflated via a non-return transfer valve fitted to the upper buoyancy chamber.

Single ply polyurethane-proofed nylon fabrics are used for the inflatable structure and for the canopy. The colour of the fabric is black for the inflatable structure and flame orange for the canopy.

The liferafts are inflated using a high pressure carbon dioxide and nitrogen gas mixture by means of an integral semi-automatic inflation system. The gas is stored in a cylinder attached to the underside of the liferaft floor. The cylinder is fitted with a valve and an operating head.

Each liferaft is fully furnished with external and internal lifelines, a drogue (sea anchor), a rescue line complete with quoit and other necessary items of equipment.

Survival equipment is contained in an emergency pack stowed within the liferaft. Instructions are given where possible in the form of pictograms. Where text is appropriate, the English language is used as standard though other languages may be specified by the customer.

The liferaft, deflated and folded, is packed as a self-contained unit in either a polyvinyl-chloride (PVC) valise or a flat glass reinforced plastic (GRP) container. Within the outer containment there is a sealed encapsulating bag. The purpose of this bag is to thoroughly protect the liferaft and its equipment from dampness. This allows the service period of the liferaft to be extended to three years. Each encapsulating bag may be used only once; it must be replaced every time the liferaft is serviced.

B. The SEASAVApplus X Liferaft (Pre-1997)

This range of liferaft was introduced in late 1994, incorporating many cost effective features of appeal to private yachtsmen.

C. The SEASAVApplus R Liferaft (1997 onwards)

The SEASAVApplus X range was replaced for 1997 by the SEASAVApplus R. This introduced a few minor changes, mainly addressing ease of manufacture:

- revised buoyancy corner construction,
- a minor revision of the packing procedure (see Paragraph A1, Page 803),
- a revised encapsulating bag (which also replaces that used on pre-1997 liferafts),
- a reduction in packed size and weight of 6 person and 8 person liferafts packed within GRP containers.

In the Dutch market only an identical range known as the SEASAVApplus X Mk3 was introduced at this same time.

D. Operation

It is MOST IMPORTANT that the liferaft is not thrown overboard without FIRST having been secured to a strong point on the craft. If this instruction is not observed the liferaft may be lost or personnel may be pulled overboard with it. DO NOT attempt to unpack and inflate the liferaft on deck; this may damage or puncture the liferaft. ALWAYS ensure that the liferaft is inflated on the water. Note that these instructions apply equally to liferafts stowed in valise or in container.

1. If the craft is to be abandoned, carry the packed valise/container to the side selected for launching.
If using a valise, locate the flying end of the painter line stowed under a flap located on one side near the base of the valise.
If using a rigid container locate the eye-end of the painter line which projects from one end of the container. In either case secure the painter line to a strong point at the side of the craft, e.g. a cleat or a handrail.
2. When the painter line is properly secured, throw the packed liferaft into the water. Grasp the painter line and pull it continuously until all of the line is pulled from the pack. Finally give the line a series of sharp jerks to initiate the inflation sequence.
3. The pulling of the line causes the cylinder operating head to function and this in turn releases the gas from the cylinder. The gas passes into the buoyancy chamber and the force exerted by the inflating liferaft forces open the valise or container.

As the liferaft continues to inflate to operational pressure the arch tube inflates and thereby erects the weather canopy. When inflation is complete the liferaft is ready for boarding whilst still moored to the craft. Full inflation is achieved within 10 to 15 seconds at a temperature of 12 to 21 degrees Celsius.

4. The liferaft is protected from over-inflation by the discharge of excess gas to atmosphere via pressure relief valves fitted to the outside of the buoyancy chambers. Valves accessible from the inside of the liferaft are provided for topping-up the pressure as necessary using the pump supplied in the equipment bag.
5. In the very rare event that the liferaft should inflate upside down, it can be righted by a survivor in the water using the righting strap fitted to the underside of the floor.
6. The floating sheath knife stowed inside the liferaft is used when it becomes necessary to sever the painter line and free the liferaft from the abandoned craft.
7. As the buoyancy of the liferaft is greater than the strength of the painter line there is no danger of the liferaft being dragged down: if the abandoned craft quickly sinks, the line will break thus allowing the liferaft to float freely to the surface.

E. Data

Rated Capacity (Persons):	4	6	8		
Inflated Dimensions:	<u>4</u>	<u>6</u>	<u>8</u>		
- Width (mm - across corners)	2010	2400	2740		
- Height (mm)	1110	1120	1230		
- Buoyancy Tube Diameter (mm)	206	230	259		
- Floor area (M ²)	1.488	2.232	2.976		
Packed Weights (All weights in kgs):	<u>4</u>	<u>6</u>	<u>8</u>		
Liferaft in Valise	24	28	32		
Packed Weights:	<u>4</u>	<u>6R</u>	<u>6X</u>	<u>8R</u>	<u>8X</u>
Liferaft in Container	30	34	35	40	41

RFD SEASAVA plus X SERVICE MANUAL

Packed Dimensions (mms):		<u>4</u>	<u>6</u>	<u>8</u>
Liferaft in Valise	- Length	780	780	780
	- Width	279	304	340
	- Height	387	387	420
Packed Dimensions (mms):		<u>4 /6R</u>	<u>6X/8R</u>	<u>8X</u>
Liferaft in Container	- Length	740	820	820
	- Width	540	565	565
	- Height	266	295	350

General:

Emergency Pack ORC ('R-Pack')
Cylinder Valve Thanner or Honeywell Leafield
Operating Head Thanner DK88 or Leafield
Painter Overall Length 10M
Pressure Relief Valves Honeywell/Leafield A10
Operating Pressure 165g/cm² (2.35psi)
Number of Water Pockets 3 (Sizes 4 & 6),
..... 5 (Size 8)

Servicing Period: 3 years

Inflation charges (kg):	<u>4</u>	<u>6</u>	<u>8</u>
- Weight of nitrogen:	0.04	0.06	0.16
- Weight of carbon dioxide:	1.4	1.98	2.5
Tolerance on nitrogen:		± 0.003	
Overall tolerance:		+zero/-0.056	

CHAPTER 2

REMOVAL AND UNPACKING

<u>Section</u>	<u>Page</u>
A. Removal from the Vessel	203
B. Unpacking Procedure	203

RFD SEASAVAplus X SERVICE MANUAL

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CHAPTER 2

REMOVAL AND UNPACKING

A. Removal from the Vessel

1. It will be necessary at the normal overhaul periods (i.e. every 36 months) to remove liferafts from the vessel to which they are fitted, so that they can be sent to an approved RFD Service Station for inspection, testing or repair.
2. Check the date of manufacture to see if servicing is required. This may be found on the data label on the outside of the liferaft containment or, alternatively, on the certificate of manufacture.

B. Unpacking Procedure

Liferafts must be unpacked for servicing only indoors, in clean and dry conditions. A flat surface with a smooth, easily cleaned covering such as vinyl is recommended.

CAUTION:

EXERCISE EXTREME CARE TO AVOID OPERATING THE INFLATION SYSTEM. DO NOT PULL ON THE PAINTER LINE!

1. Valise Containment.

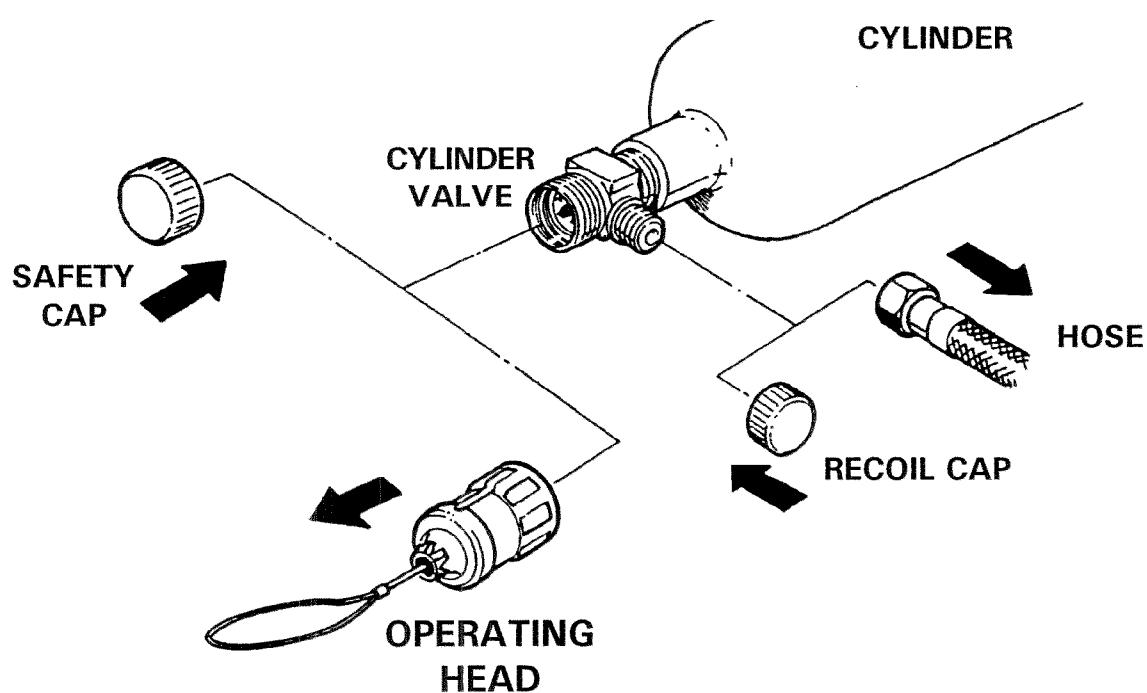
- a. Open the painter exit flap; untie and release the painter end. Replace the flap.
- b. Release the valise velcro closure strips commencing at one side. Open the valise, locate the liferaft end of the painter and untie it from the eyeleted conduit of the encapsulating bag. **Take care not to pull the painter.**
- c. Withdraw the liferaft within its encapsulating bag until completely free of the valise. Remove the painter sachet. The valise may now be cleaned, stored and re-used.
- d. Proceed to Paragraph 4.

2. **Rigid Containment.**
 - a. Peel away the sealing strip holding the container halves together.
 - b. Raise the upper part of the container. Locate the liferaft end of the painter and untie it from the eyeleted conduit of the encapsulating bag. **Take care not to pull the painter.**
 - c. Carefully withdraw the liferaft within its encapsulating bag until completely free of the container. The container may now be cleaned, stored and re-used.
3. Release the painter sachet from the lower half of the container. The painter sachet may be stored and re-used.
4. Carefully cut the top of the encapsulating bag and then along the side leading towards the eyeleted conduit for the painter cord. Locate the junction of the cord with the operating head cable and cut the cord on either side of the operating head cable. When released, so there is no danger of pulling on the cable and operating the inflation system, the remainder of the bag may be removed from the liferaft and discarded.
5. Disconnect the operating head from the cylinder valve - Thanner: by unscrewing it using the special spanner (refer to Chapter 10); Leafield: by unscrewing the clamp screw and removing the clamp. Unscrew the inflation hose also from the cylinder valve. Fit safety and recoil caps to the inflation valve (Fig. 201). The cylinder may be removed for safe discharge, inspection, maintenance, storage and re-use.

WARNING:

**ALWAYS FIT A RECOIL CAP TO A CYLINDER VALVE OUTLET
WHEN HANDLING A FULLY CHARGED CYLINDER.**

6. The liferaft may now be unfolded to enable access to emergency pack, paddles and other auxiliary items.
7. It is recommended that a label be attached to each item separated noting the liferaft serial number on each, before placing them in storage.



REMOVE OPERATING HEAD(S)

(Thanner system shown)

Figure 201

RFD SEASAVAplus X SERVICE MANUAL

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CHAPTER 3

CLEANING

<u>Section</u>	<u>Page</u>
A. General	303
B. Procedure.....	303

RFD SEASAVAplus X SERVICE MANUAL

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CHAPTER 3

CLEANING

A. General

CAUTION:

USE ONLY SOLVENTS AND MATERIALS LISTED IN TABLE 301:

<u>Item</u>	<u>Description</u>	<u>Application</u>
1	Toluene Alternatively:)) Cleaning) Proofed
2	Petroleum Rubber Solvent) Fabrics)
3	Hard Soap (Not Detergent)	Washing liferaft
4	Lint-free cloth (clean and dry)	Drying liferaft
5	Sodium Hypochlorite	Container anti-fungal

CLEANING SOLVENTS AND MATERIALS

Table 301

B. Procedure

WARNING:

**ALL SOLVENTS - FLAMMABLE.
KEEP AWAY FROM NAKED LIGHTS. USE ONLY IN A WELL
VENTILATED ATMOSPHERE. DO NOT SPLASH INTO EYES. DO NOT
BREATH THE GASES. USE A BARRIER CREAM ON HANDS AND WASH
THEM AFTER USING SOLVENTS.**

RFD SEASAVAplus X SERVICE MANUAL

Liferaft and Liferaft Valise

1. Wash the liferaft clean with a solution of hard soap and water. After washing, finish with a clean dry cloth.
2. Remove oil or similar foreign substances with solvent and wash the area as described above.

Rigid Container (Anti-mould treatment)

3. Wash the container outer surfaces clean with a solution of hard soap and water.
4. The following anti-mould treatment shall be applied to all rigid containers during the normal overhaul period of the liferaft, and on all containers that have been exposed to dampness during prolonged storage.
 - a. Scrub clean the inside of the container with a solution of hard soap and water.
 - b. Mix a weak solution of Sodium Hypochlorite. (25 parts water to 1 part of 14% to 15% solution).
 - c. Using a sponge, apply the solution evenly over the entire inner surface of the container.
 - d. Allow the surface to completely dry before packing the liferafts into the container.

CAUTION:

AVOID EXCESS AMOUNT OR PUDDLES OF CLEANING SOLUTIONS AND SOLVENTS ON THE LIFERAFT, AS THIS CAN CAUSE PERMANENT DAMAGE.

5. Do not place items in to storage until they are thoroughly clean and solvents have evaporated from their surfaces.

CHAPTER 4

INSPECTION AND CHECKING

<u>Section</u>	<u>Page</u>
A. GENERAL	403
Fabric Components	
Metal and Plastic Components	
Webbing, Ropes, Cordage and 'Velcro' Strips	
B. DETAIL	404
Gas Inflation System	
Sea Light Unit and Power Unit Assembly	
Emergency Pack	
Rigid Container	

RFD SEASAVA plus X SERVICE MANUAL

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CHAPTER 4

INSPECTION AND CHECKING

A. GENERAL

1. The liferaft is to be inspected at three-yearly intervals to ensure that the inflatable chambers will maintain the specified pressure, that the inflation system functions efficiently, and that all components and associated equipment are maintained in a serviceable condition.

FABRIC COMPONENTS

2. Inspect all fabric components for:
 - a. Slits, tears, holes or abrasion.
 - b. Pigment removal.
 - c. Deterioration.
 - d. Adhesion of seams and components.
 - e. Separation of welded joints.
 - f. Broken or worn stitching.
 - g. Legibility of all instructions and labels.

METAL and PLASTIC COMPONENTS

3. Examine for:
 - a. Cleanliness.
 - b. Cracks.
 - c. Distortion.
 - d. Scoring and burrs.
 - e. Damaged threads.
 - f. Fraying cables.
 - g. Corrosion.

WEBBING, ROPES, CORDAGE and 'VELCRO' STRIPS

4. Check for:
 - a. Damage and fraying.
 - b. Discoloration and deterioration (including any material in contact with them).
 - c. Incomplete adhesion to fabric.
 - d. Broken or worn stitching.

B. DETAIL**GAS INFLATION SYSTEM****Note:**

Refer to manufacturer's manuals listed at the front of this manual.

1. Remove operating heads from cylinder assemblies and ensure safety and recoil caps are fitted to cylinder valves.

WARNING:

DANGER - THE GAS CYLINDER CAN BECOME A LETHAL PROJECTILE IF DISCHARGED TO ATMOSPHERE. ALWAYS FIT A RECOIL CAP TO THE GAS OUTLET WHEN HANDLING A FULLY CHARGED CYLINDER. THE CYLINDER MUST BE HELD IN A VICE OR SAFETY CLAMPING DEVICE WHEN FITTING OR REMOVING AN OPERATING HEAD.

2. Operating heads shall be serviced according to manufacturer's manuals.
3. Clean the cylinder. Ensure the label is legible.
4. Check weigh cleaned cylinders (less transit and recoil caps) against the tare weight printed on the cylinder label. If significant leakage has occurred the cylinder assembly must be re-assembled and re-tested.
5. Check that the siphon tube inside the cylinder is still serviceable. Shake the cylinder, if the tube is still flexible it will strike the wall of the cylinder with a ringing sound. If there is a noticeable delay before the sound is heard, the tube has stiffened, and is no longer serviceable: the cylinder must be rejected.

6. Refer to the associated manual 'Assembly and Charging of Transportable Gas Cylinders' (See list at the beginning of this manual) for recharging instructions. If a cylinder is to be recharged, it is imperative that the correct quantities of CO₂ and N₂ gases are achieved (as specified in the data section at Chapter 1).

CAUTION:

CO₂ TO SPECIFICATION BS4105 TYPE 1 and N₂ TO SPECIFICATION BS4366 TYPE 1 MUST BE USED WHENEVER A GAS CYLINDER IS RECHARGED.

7. Check the date of the last hydraulic pressure test.
8. The external condition of the cylinder must be checked in accordance with British Standard 5430 Pt2.
9. Cylinders that have been subjected to water immersion, i.e. those fitted to liferafts used for crew training or an actual emergency, are to be returned to the manufacturer (or approved agent) for reconditioning and retest before the expiry of their normal 'in-use' life.
10. Check hoses and inlet valves for visual defects. Make sure that all components are sound and secure.

EMERGENCY PACK (LIFED ITEMS)

Note:

**All the items listed below may not be supplied in some emergency packs.
For the actual scale of contents, refer to the pack contents label.**

CAUTION:

**LIFED ITEMS - ENSURE THAT THE REMAINING LIFE IS IN EXCESS OF 3 YEARS, i.e. BEYOND THE DATE OF THE NEXT OVERHAUL PERIOD.
DISPOSE OF OUTDATED STOCK IN ACCORDANCE WITH REGULATIONS LOCALLY IN FORCE.**

11. Visually check distress signals for general condition.
12. Check handbooks and leaflets for legibility of content and condition.
13. Check hand pump and hose for function and/or damage.

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14. Check the torch (flashlight) and batteries for damage and function.
Renew battery cells every 3 years.
15. Check bailers, paddles and leak stoppers for condition, corrosion and damage: renew as necessary.
16. Examine the repair kit for damage of contents and renew as necessary.
17. Renew the capsules of anti-seasickness tablets (the life of the tablets is 3 years).
18. Other unlifed items may remain in-use subject to having satisfactorily passed visual inspection.

RIGID GRP CONTAINER

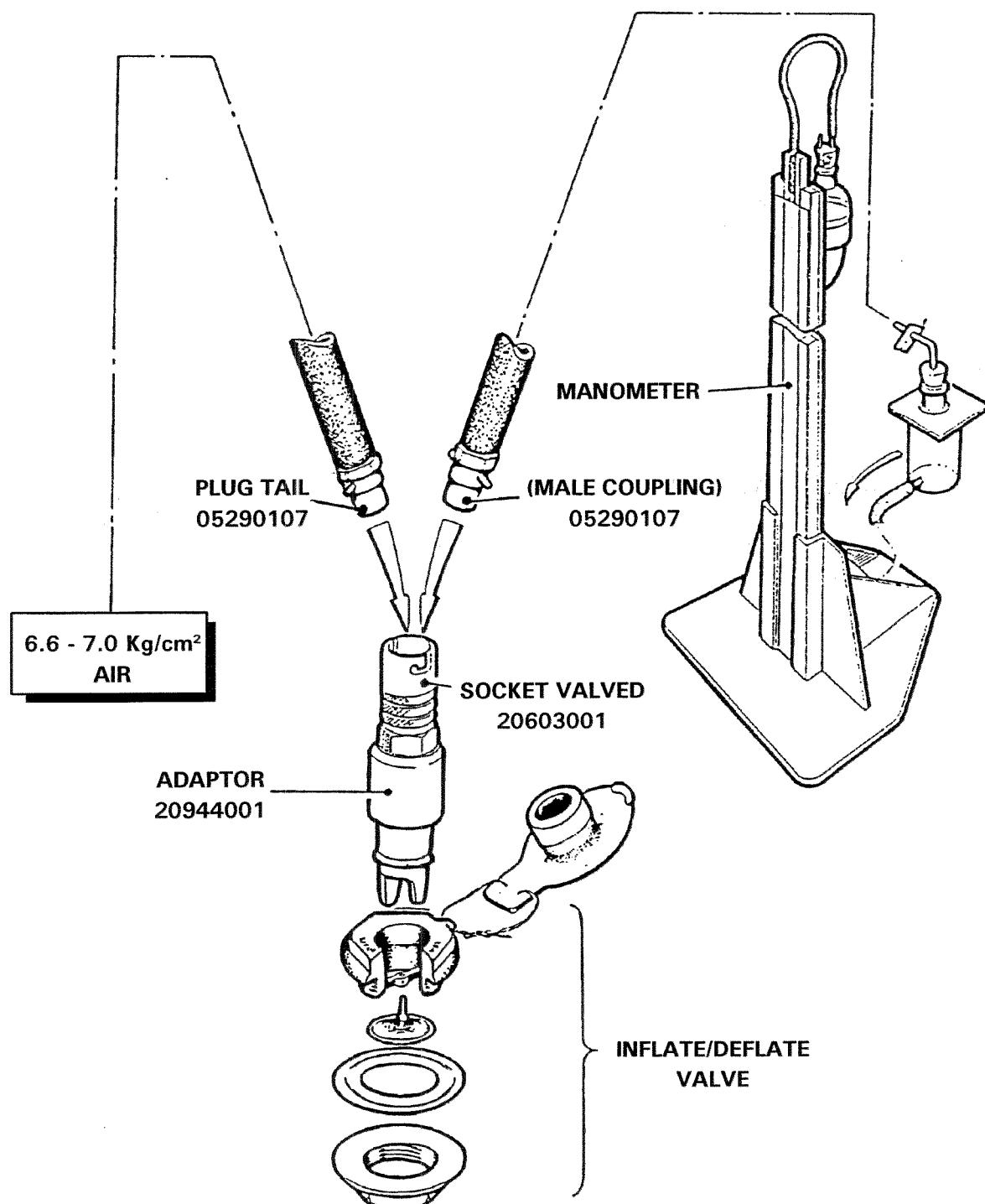
Inspect the container for:

19. Cleanliness, freedom from cracks (other than minor gel-coat craze cracking), voids and other obvious signs of damage.
20. Legibility and appearance of all markings and labels.

CHAPTER 5

TESTING AND TROUBLE-SHOOTING

<u>Section</u>	<u>Page</u>
A. GENERAL	503
Test Equipment and Materials	
B. PREPARATION	505
C. TEST PROCEDURES	505
General	
Test Time Intervals	
Buoyancy Chambers	
Function Test	
Gas Cylinders	
D. TROUBLE SHOOTING	512



TEST LAYOUT
Figure 501

CHAPTER 5

TESTING AND TROUBLE SHOOTING

A. General

The items listed in Table 501 (below) are necessary for testing the liferaft. When not in use, the test equipment and all special tools are to be kept under conditions that protect them from damage.

<u>Item Description</u>	<u>Part No.</u>
1 Water Manometer (water level to be zero)	11307019
2 Thermometer (room temperature) (hang on side of manometer)	-
3 Rubber Tubing (3m of 9mm i/d, 12mm o/d)	-
4 Adapter for Type A8 inflate/deflate valve	20944001
5 'Instantair' coupling - female	20603001
6 'Instantair' coupling - male	05290107
7 Dry, oil-free air supply (5.6 to 7.0 kg/cm ²)	-
8 Solution of hard soap and water (NOT detergent)	-
9 Lint-free cloth, clean and dry	-
10 Plug, blanking, relief valve (buoyancy tubes)	06400009
11 Barometer	-

TEST EQUIPMENT AND MATERIALS

Table 501

SURVEY RECORD			
LIFERAFT TYPE:	SERIAL No.		
REPAIRS REQUIRED			
PART	DAMAGE	FORM OF REPAIR	INSPECTED BY
UPPER BUOYANCY			
LOWER BUOYANCY			
ARCH TUBE ASSY.			
FLOOR			
COMPONENTS			
INFLATION EQUIP.			

EXAMPLES OF TEST RECORD CARDS

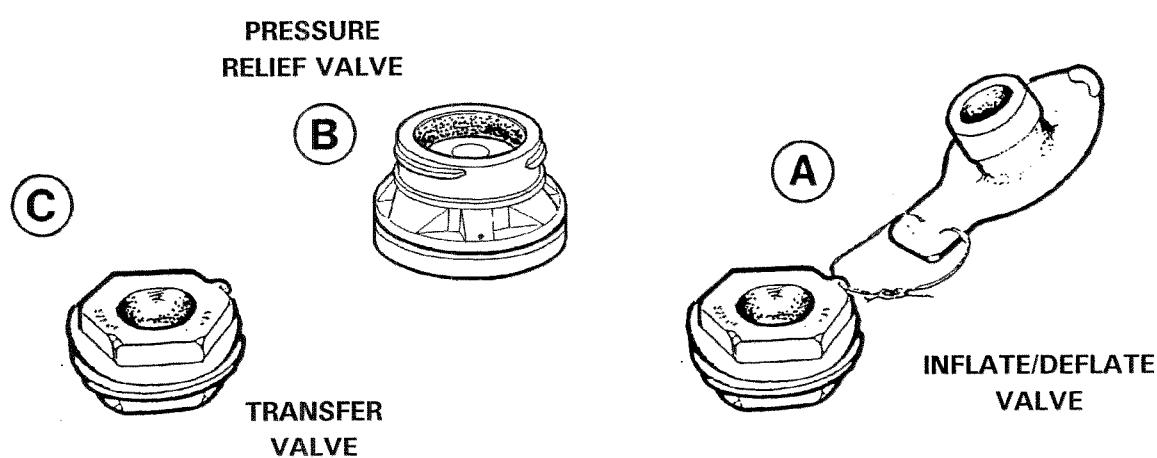
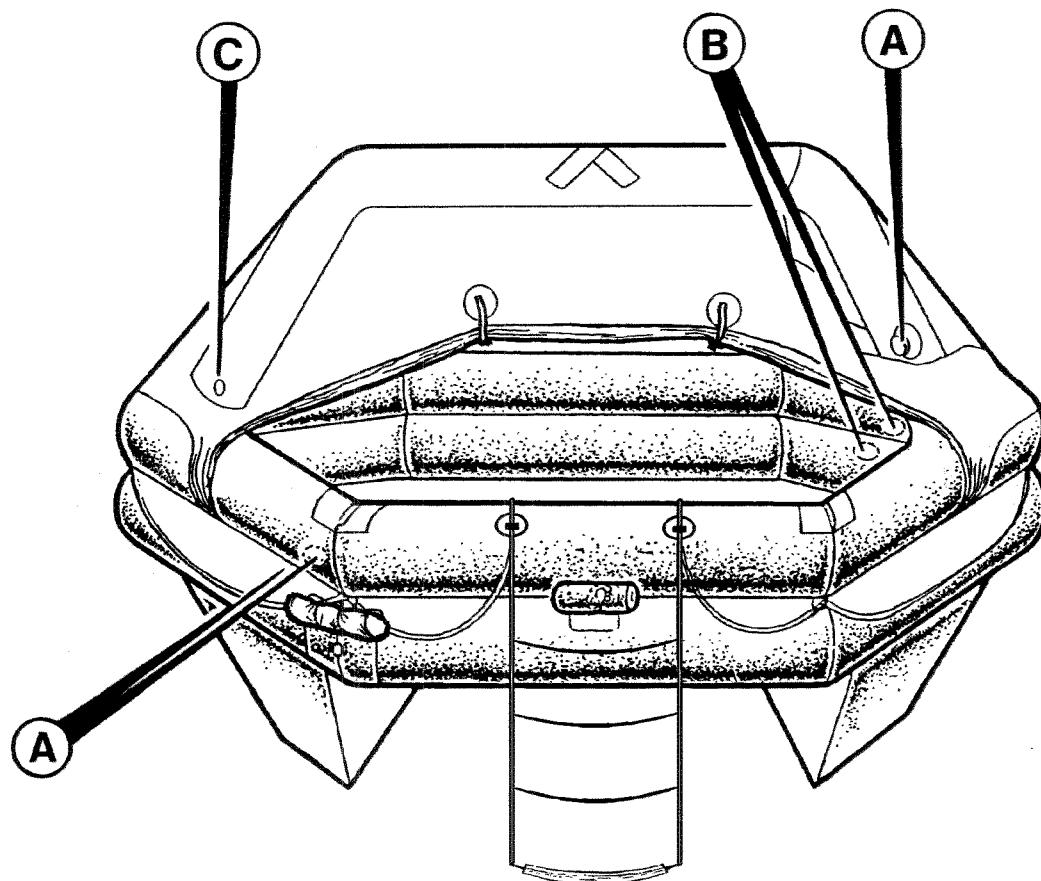
Figure 502

B. Preparation

1. Keep records of **ALL** inflation tests. A recommended layout for test cards is shown in Figure 502.
2. Keep the liferafts away from draughts and direct sunlight as temperature affects pressure.
3. Keep at hand a solution of hard soap (**NOT** detergent) and water, and a plentiful supply of clean, dry, lint-free cloth.
4. Connect an air supply to an inflatable chamber and slowly inflate the chamber to the specified pressure for the test, check progress at intervals by disconnecting the air line and connecting up to a water manometer.
5. Note the pressure, barometric pressure and temperature and leave the chamber to stand for the period specified; at the end of that time, the pressure and temperature are to be recorded and checked against the test limits.
6. Correct all pressure readings for temperature variations as follows:
 - a. **SUBTRACT 38mm** from the manometer reading for every degree Centigrade **RISE** in temperature.
 - b. **ADD 38mm** to the manometer reading for every degree Centigrade **FALL** in temperature.
7. Correct all pressure readings for barometric variations as follows:
 - a. **SUBTRACT 10.2mm** from the manometer reading for every 1mbar **DROP** in pressure.
 - b. **ADD 10.2mm** to the manometer reading for every 1mbar **INCREASE** in pressure.

C. Test Procedure**General**

1. Each inflatable part of the main structure must be tested separately. The structure consists of all the chambers served by the gas inflation system; these are the upper and lower buoyancy chambers and the arch tube.



LOCATION OF VALVES

Figure 503

Test Time Intervals

2. All liferafts at 3 years of age and thereafter at 3 yearly intervals must be subjected to the tests as detailed.
3. A liferaft which has been unpacked for any other reason should be subjected to at least a leakage test before being repacked.

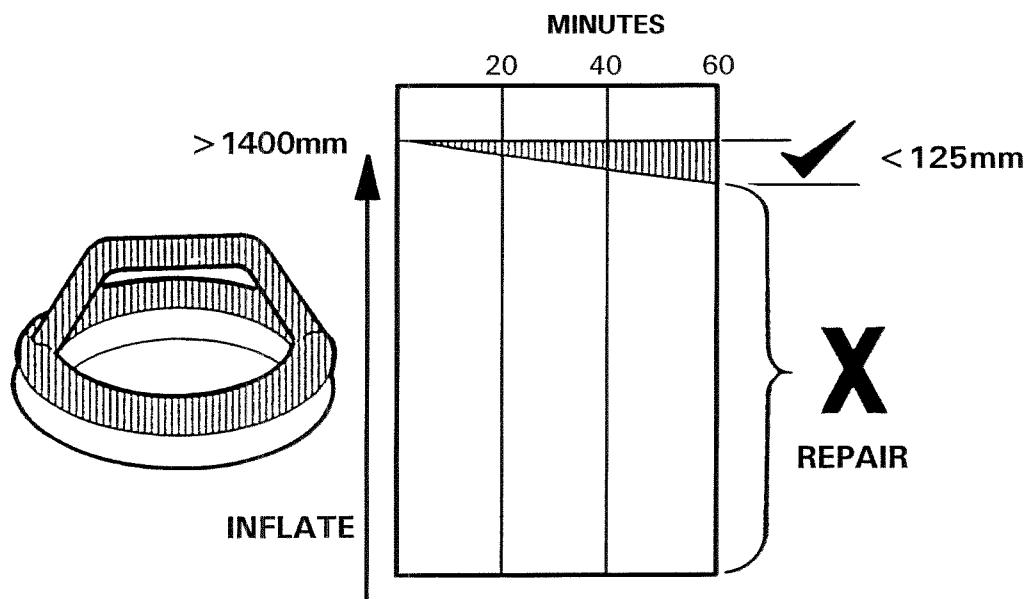
Buoyancy Chambers

4. The arch tube being mounted on the top buoyancy chamber will be fully inflated when the chamber is tested. Therefore it will be tested with the chamber. Each chamber will be tested over a period of 60 minutes.

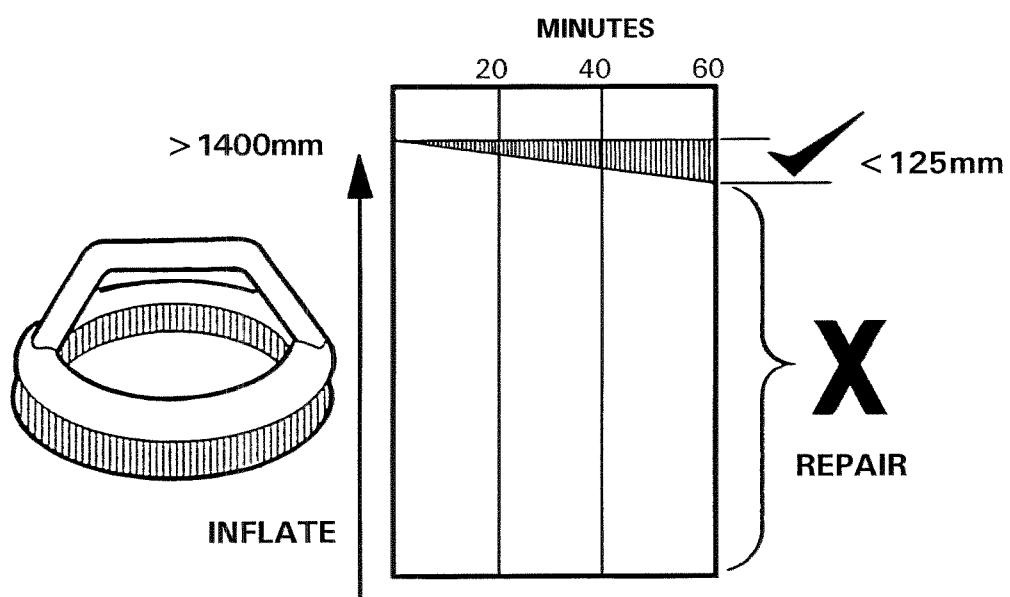
To carry out the leakage test and pressure relief valve test proceed as follows:

- a. Fit plugs in all relief valves (Figures 503 and 504).
- b. Inflate the top buoyancy chamber to 1625mm WG.
- c. Disconnect the air supply and connect the manometer (Fig. 501).
- d. Check the test equipment for leaks by brushing the joints with soapy water, and correct as necessary.
- e. Check for pressure loss in the chamber due to test equipment leaks, and adjust accordingly.
- f. Leave the pressurised chamber to stand undisturbed for 30 minutes and then, provided the pressure is not less than 1400mm WG (Fig. 505), note the pressure and leave the chamber to stand for a further 60 minutes. Further pressure drop, when corrected for temperature variations, shall not exceed 125mm water gauge.
- g. If the corrected pressure drop is more than search for leaks and porous fabric, repair to prescribed limits and retest the chamber.
- h. Repeat the procedure for the bottom buoyancy chamber (Fig. 506).

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LEAK TESTING (UPPER BUOYANCY/ARCH TUBE)
Figure 505



LEAK TESTING (LOWER BUOYANCY)
Figure 506

- i. Test the pressure relief valves as shown at Fig. 504. Starting at 2385mm WG with the valves plugged, remove the plugs. The valves should relieve pressure immediately and, after 15 minutes, the valves should have reseated with the pressure contained at not less than 1650mm WG. After a further 15 minutes the pressure should still exceed 1625mm WG. Valves which do not operate according to the above must be replaced (Refer to Chapter 6, Section F).
- j. Test the archtube transfer valve as shown at Fig. 507. Starting with the upper buoyancy deflated and the archtube at 1400mm WG, after 30 minutes the archtube or ramp shall maintain its full shape. Transfer valves which do not hold air must be replaced (Refer to Chapter 6, Section F).

Function Test

- 5. A full function test may be requested by the owner. It is recommended that this be achieved with the unpacked liferaft.
- 6. If the liferaft is unpacked and laid out on the floor, the load required to initiate inflation shall not exceed 13.6kg when measured on a spring balance.
- 7. All chambers must fully inflate and PRV's must function; this should take no more than 60 seconds at an ambient air temperature of 18-20°C.

Gas Cylinders

WARNING:

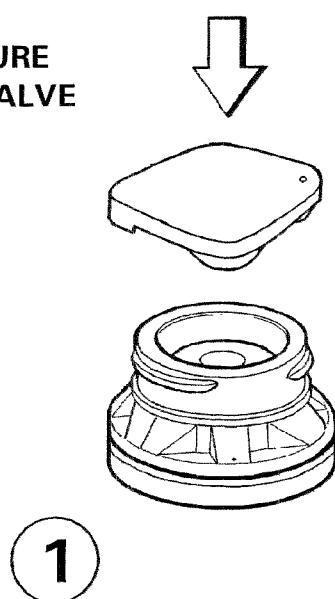
DANGER - THE GAS CYLINDER CAN BECOME A LETHAL PROJECTILE IF DISCHARGED TO ATMOSPHERE. ALWAYS FIT A RECOIL CAP TO A GAS OUTLET WHEN HANDLING A FULLY CHARGED CYLINDER. A CYLINDER MUST BE HELD IN A VICE OR A SAFETY CLAMPING DEVICE WHEN FITTING OR REMOVING AN OPERATING HEAD.

Note:

For methods relating to the check weighing, recharging and hydraulic testing of gas cylinders, refer to the Assembly and Charging of Transportable Gas Cylinders Manual listed at the front of this manual.

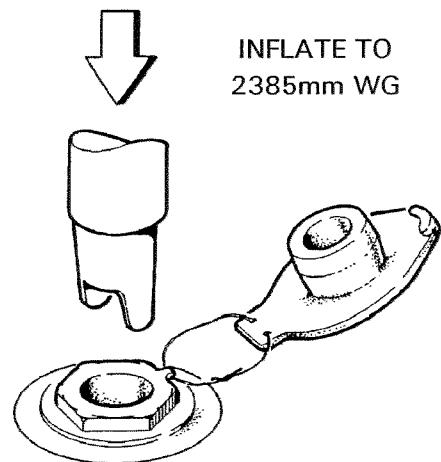
**A8
INFLATE/DEFLATE
VALVE**

**A10
PRESSURE
RELIEF VALVE**

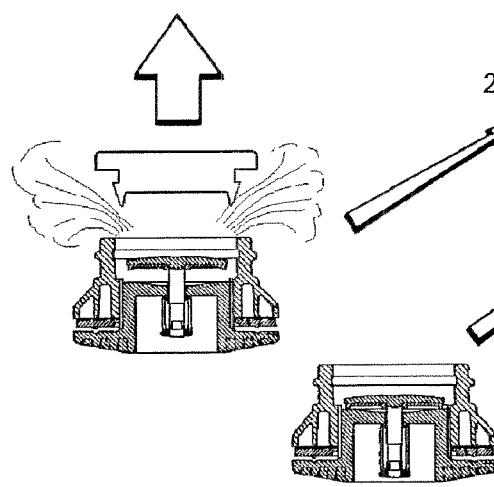


1

INFLATE TO
2385mm WG

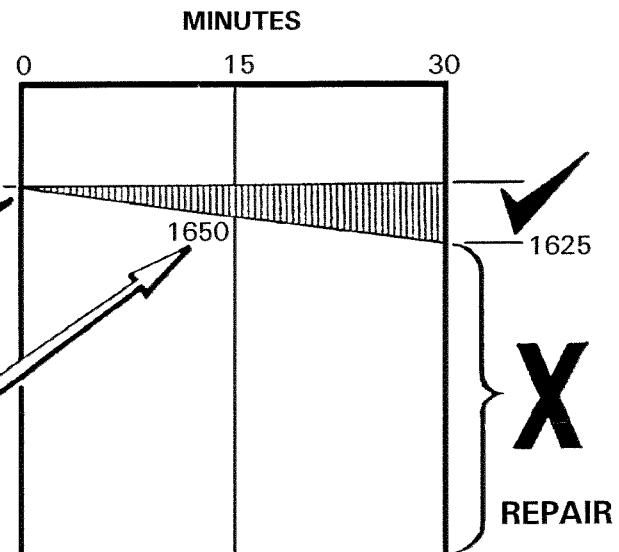


2



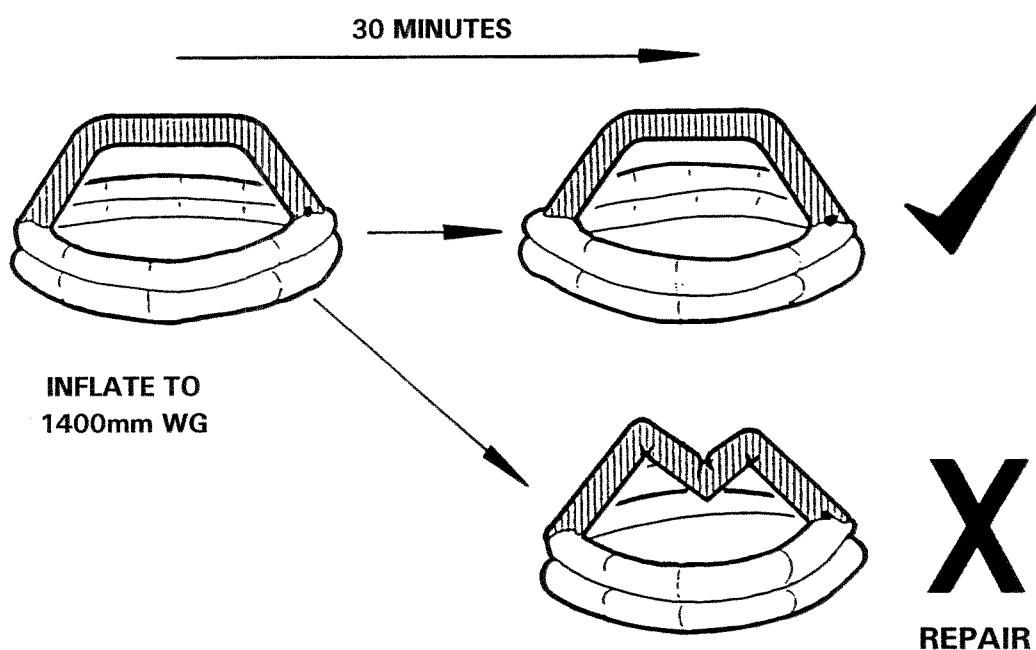
3

4



TESTING PRESSURE RELIEF VALVES

Figure 504



TESTING THE TRANSFER VALVE
Figure 507

D. Trouble Shooting (Table 502)

This table is given to facilitate the locations of troubles in the event of malfunction during function test, their probable causes and corrective action. In addition to using this table, visually check the liferaft and equipment for evidence of damage or signs of failure.

Trouble	Probable Cause	Corrective Action
Failure to inflate	a. Empty or under charged cylinder b. Hose not fitted or loosely connected	a. Fit fully charged cylinder b. Fit or tighten hose connectors
Pressure leaks	a. Torn or porous fabric b. Ramp deflation plug not fitted or loose c. Foreign matter affecting valve seat d. Loose connections in hose system	a. Repair fabric to prescribed limits b. Fit or tighten deflation plug c. Clean/renew relief/ topping-up valves d. Check/Tighten all hose connections
Relief valve does not relieve or reseat at required test pressure levels	a. Sealing plug fitted b. Defective relief valve c. Foreign matter affecting valve seat	a. Remove sealing plug b. Clean or renew relief valve by flushing through with air
Operating head jammed or sticking spindle	a. Damaged pulley b. Defective thread on c. Frayed or jammed cable	Remove operating head from the cylinder, renew defective part or complete assembly

CHAPTER 6**REPAIR**

<u>Section</u>	<u>Page</u>
A. GENERAL	603
B. ADHESIVE	603
Mixing Instructions	
C. PREPARATION of COATED SURFACES	604
Polyurethane-proofed surfaces	
Polychloroprene or natural rubber surfaces	
D. APPLYING ADHESIVE	606
E. REPAIRING TORN AREAS	607
Patches	
Applying Patches and Tapes	
Part Panel Replacement	
Repair Limits	
F. COMPONENT REPAIR.....	612
Pressure Relief Valve	
Topping-up Valve	
CO2 Valve	
Ramp Transfer Valve	
Arch Transfer Valve	
G. RIGID CONTAINERS	616
Classification of Repairs	
Minor Repairs	
Gelcoat	
Major Repairs	
Repair Limits	

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CHAPTER 6

REPAIR

A. General

Repairs normally consist of patching the damage with fabric patches. The patching fabric must be the same type of material as the item under repair (i.e. material RFD 1015 must be replaced with RFD 1015).

Marking of fabrics: use a silver ballpoint pen (Schmidt 700) or BIC Crystal red Pen or wax crayon.

B. Adhesive

WARNING:

**ADHESIVES ARE FLAMMABLE. KEEP AWAY FROM NAKED LIGHTS.
USE ONLY IN A WELL VENTILATED AREA. DO NOT SPLASH INTO
EYES. USE A BARRIER CREAM ON HANDS. WASH HANDS
THOROUGHLY AFTER USING ADHESIVES.**

1. The adhesive to be used for repairs is a two-part polychloroprene mix to Spec. RFD 549 (Bostik 486), supplied in quantities of one or five litres:

Five Litres	-	RFD Part No. 02868009
One Litre	-	RFD Part No. 04929009

2. Only the adhesive specified (above) shall be used for the repair of liferafts manufactured by RFD Limited. It has been selected after careful analysis of its behaviour. Whilst apparently bonding surfaces together, unspecified adhesives may have unexpected deleterious side effects resulting eventually in premature seam failure.

Mixing Instructions

CAUTION:

**DO NOT MAKE UP PARTIAL QUANTITY MIXES.
IT IS VERY IMPORTANT TO OBSERVE AN EXACT PROCEDURE IN
MIXING SO THAT THE ACCELERATOR WILL NOT SEPARATE FROM
THE DISPERSION MEDIUM. THE MEASURED VOLUME OF PART 2
MUST BE POURED ONTO THE APPROPRIATE QUANTITY OF PART 1
(STIRRING ALL THE TIME - FOR AT LEAST 5 MINUTES)**

3. The adhesive used for repair is a two-part adhesive. Part 1 is the basic dispersion medium, Bostik 486, supplied in a can. Part 2 is the accelerator 'Bostikure' supplied in a bottle. The constituents must be mixed together in these total quantities. The correct size of dispersion medium is stated on the can label, e.g. D10, D40 etc. Partial amounts of the mixture must not be made up because, once a bottle has been opened, moisture will enter and the accelerator will soon deteriorate if left unused.
4. The adhesive, having been used for joining surfaces, will have cured in two to four days at 20 degrees Celcius. At higher temperatures the curing time will be less, and at lower temperatures the time will be longer.

CAUTION:

THE SOLUTION CANNOT BE STORED READY-MIXED AS IT BECOMES UNUSABLE AFTER A FEW HOURS. THE COMPONENTS AND MIXED ADHESIVE MUST BE KEPT IN COMPLETELY SEALED AIR-TIGHT CONTAINERS.

5. The pot life of the mixed adhesive is dependent upon workshop temperature and the degree of exposure to air during use, the mixed adhesive will thicken and become 'ropy' within four to six hours. As long as the adhesive can be readily applied as a normal smooth even coat, it is suitable for use.

C. Preparation of Coated Surfaces**Polyurethane-proofed Surfaces****CAUTION:**

VERY IMPORTANT - THE HEAVY DUTY POLYURETHANE COATING ON THE MATERIAL USED FOR THE BUOYANCY CHAMBERS/FLOOR/ ARCH TUBES MUST HAVE THE SURFACE PROPERLY PREPARED USING THE SOLVENT MEK (METHYL ETHYL KETONE). PETROLEUM OR TOLUENE TYPE CLEANING SOLVENTS ARE INEFFECTIVE FOR THIS PURPOSE.

1. The nylon fabric used for the buoyancy chambers/floor/ arch tubes has a heavy-duty polyurethane coating which has been compounded to give a high resistance to abrasion.

2. These polyurethane coated fabrics must be prepared for bonding by thoroughly cleaning the coated surfaces with the solvent MEK immediately before application of the first coat of adhesive. The solvent is applied with a lint-free fabric pad, wet but not dripping with the solvent. Adequate preparation is shown by the development of a matt appearance and a limited degree of tackiness.
3. Attempts to clean polyurethane surfaces in a hot humid environment can induce the formation of atmospheric dew as a result of the liferaft and/or patch material surface temperature being lowered by the rapid evaporation of the MEK solvent. **DO NOT WORK IN THESE CONDITIONS AS POOR ADHESION WILL RESULT.**
4. After being wiped with MEK, the receptiveness of polyurethane surfaces polychloroprene adhesives lessens rapidly. For best results the adhesive must be applied within 10-20 seconds of the MEK wipe, which should be made at standard room temperature. The optimum time within which the adhesive must be applied, at any given temperature, can be found using the experience gained by experimenting with identical fabrics.
5. Repeated applications of MEK solvent on a clean polyurethane surface tend to become less effective. Apply the first coat of adhesive immediately after the first MEK wipe.
6. Seaming surfaces which have been separated should not have the residual adhesive removed unless it can be easily peeled off. To obtain a smooth surface, rub the old solution down with toluene; this rubbing also prepares the previously solutioned area for re-solutioning. Note that surfaces which have been previously solutioned will not normally respond well to MEK solvent.

Polychloroprene or natural rubber surfaces

7. Neoprene and/or natural rubber valve flanges must be abraded by machine buffing or a rotary wire brush. Immediately after buffing, and prior to applying adhesive, remove all extraneous rubber dust and surface contamination with a clean cloth dampened with toluene solvent. It is impossible to over-emphasise the importance of this solvent rub, it should not be a scrubbing and, conversely, it must not be a mere wipe.
8. An area that has been adequately cleaned by buffing will have a deep matt black finish, with no shine or waxy appearance remaining. The deep matt black appearance will remain after the solvent rub. On natural rubber facings, the sole criterion of an adequately cleaned surface is the drag felt when the surface is rubbed with a finger.

9. Apply adhesive to the prepared area immediately after cleaning with the solvent rub, i.e. before the return of surface contamination.
10. The canopy fabric is single face rubber coated material. Use No. 0 or 11 grade glass paper and lightly abrade the coated area to be solutioned. The base textile does not need preparation. Wipe the area with a toluene solvent rub and apply the adhesive.

D. Applying Adhesive

1. Fabric surfaces entering into a seam, or forming the boundary of a patch, shall have two coats of adhesive (diluted 20% by volume with toluene) applied to the fabric surface with a stiff brush in such a manner that the adhesive is driven firmly into the fabric weave. Allow the first coat to become tacky before applying the next. This will ensure a good basis for each successive coat, ensure a good adhesive bond and prevent the seepage of air through the fabric.
2. For the purposes of repair the words 'tacky' and aggressive tack' are defined thus:
 - a. When the word 'tacky' is used, it means that if the fingers are lightly dragged across the adhesive, it tends to pull off the base fabric or the previous coat.
 - b. When the words 'aggressive tack' are used, they mean that when applying light pressure to the adhesive, it has bonded to the previous coats and tends to retain, or stick to, the fingers.
3. Apply 3 more coats of undiluted adhesive to each mating surface, again allow the first and second coats to become tacky before applying the second and third coats.
4. When the third coat develops an aggressive tack, apply the patch or make the seam.
5. If the third coat has dried it may be relivened with a cloth dampened with toluene solvent. Apply just enough solvent to recreate an aggressive tack on the surface. Reactivation may be carried out up to 3 hours after the application of the last coat of solution.

6. Note that if the solution becomes too dry between coats or at seam make-up, or if any air bubbles are not completely rolled out, or if the mating surfaces are dry, a 'dry-joint' will result. The join may appear sound, but it can be quite easily pulled apart. When testing with a finger, the solution must show aggressive tack, but no pick-up of solution. Rolling must be firm, working from the centre of the area toward the edges, expelling the air.
7. Careful attention is to be given when rolling down seams and patches, particularly on curved edges. Puckers and channels must be avoided, and all seams **MUST** be rolled twice.

CAUTION:

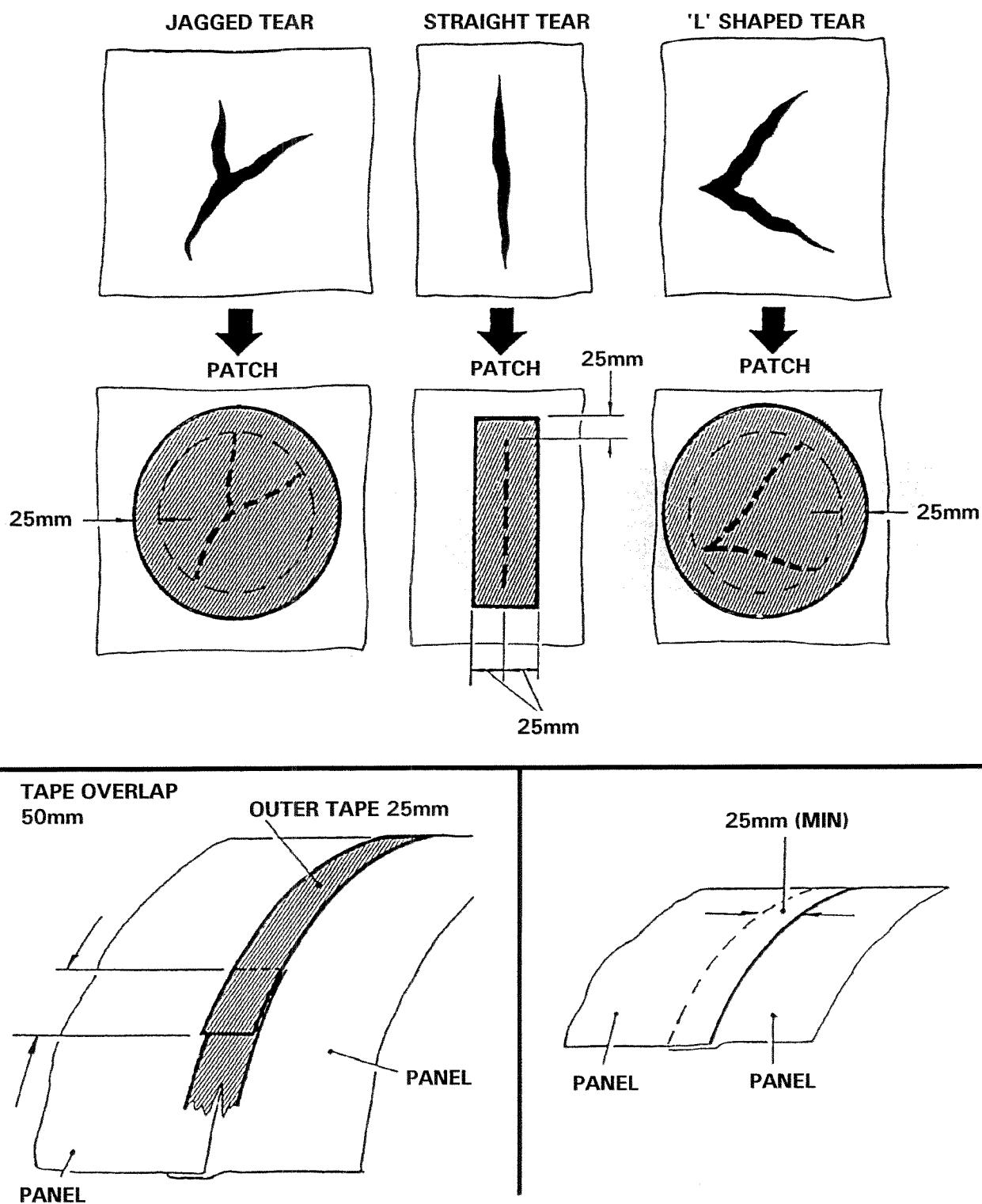
SOLVENTS MUST NOT BE USED FOR REMOVING SURPLUS ADHESIVE FROM REPAIR AREAS.

E. Repairing Damaged Areas

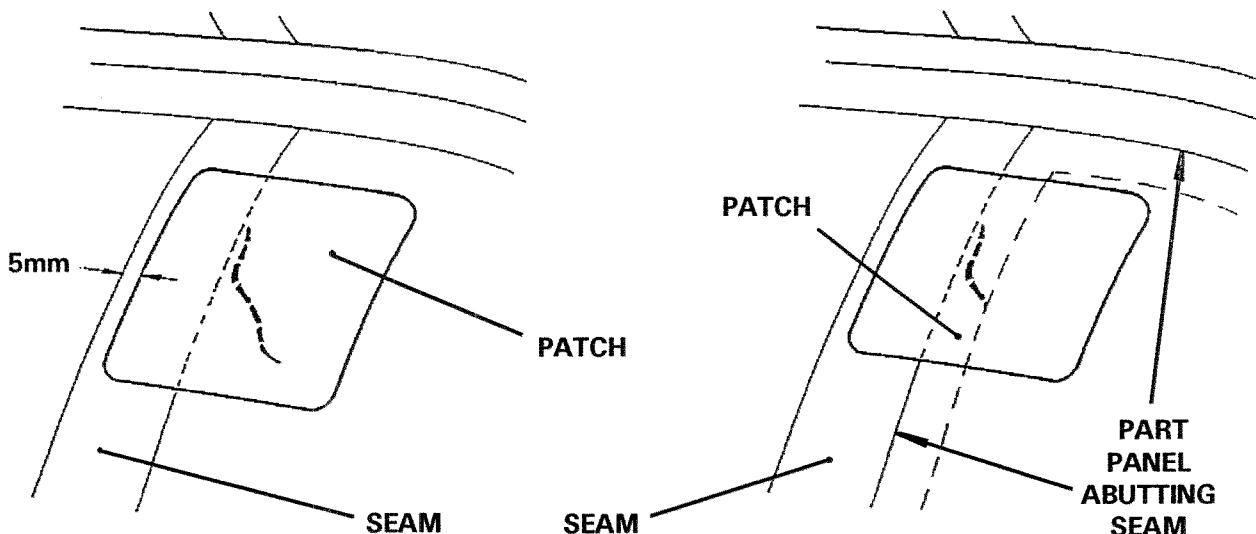
1. Many of the seams in Seasava type liferafts, particularly the air holding seams, are of welded construction. Once welded, these seams cannot be opened. A correctly welded seam is such that no discernible interface between the two polyurethane surfaces will remain. As a result of this type of construction, some of the traditional methods of repair, i.e. those which started with pulling apart the solutioned structure, have been replaced as described below. Note that a correctly solutioned seam or assembly of polyurethane proofed fabric and polychloroprene adhesive is so strong that damage to the proofed coat can result from careless attempts to tear apart solutioned surfaces, particularly when loads are applied in a manner not normally found during service.
2. It is recommended that solutioned seams or assemblies are released by the use of a hot air gun, toluene solvent or the careful use of a release knife or other suitable tool. If repairs necessitate the disassembly of the buoyancy corner 'kink' patches, cut and discard these. Always use new patches solutioned to the original marks when remaking the corner kinks.

Patches (Fig. 601)

3. Repair patches must extend at least 25mm beyond the perimeter of the damage, e.g. if the diameter of a jagged hole is 25mm, the patch must be at least 75mm in diameter, if a straight tear is 25mm long, the patch must be at least 75mm x 50mm. 'L' shaped tears are to be treated as holes, reckoning the dimensions, taken between the ends of the tear, as the 'diameter'.



PATCHING AND TAPING
Figure 601



PATCH APPLICATION OVER SEAMS
Figures 602a and 602b

Note:

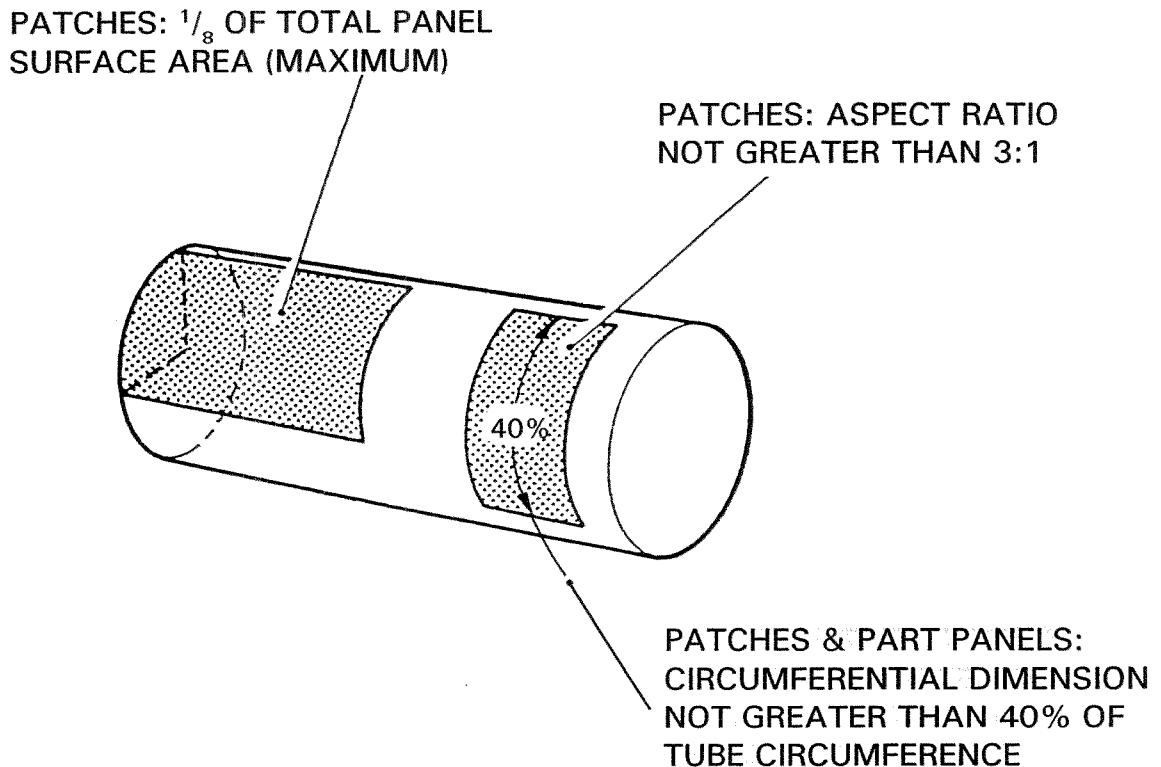
Patches must be circular, or rectangular with rounded corners.

Applying Patches and Tapes

4. If the patch is to repair a hole or cut which lies along the edge of a seam, then the patch must cross the seam and extend across the width of the seam to within 5mm of the far edge (Fig. 602a). The patch must be thoroughly rolled down along the edge of the seam tape after assembly using an edge wheel or stitch wheel so as to avoid leaks.
 - a. Cut the patch to size.
 - b. Prepare and clean the area as described above.
 - c. When the final solution coat develops an aggressive tack, place the patch in position and roll it into firm contact using a hand roller.
 - d. Work out any air bubbles from under the patch with a spatula.
 - e. After a repair to an inflatable chamber has been allowed sufficient time to cure, carry out a pressure holding test.
5. Apply tape in exactly the same manner as patches are applied. Radius corners of tape ends before sticking. Overlap tape ends by 50mm.

Part Panel Replacement.

6. The detailed operations below MUST be followed as closely as possible.
7. Detach assemblies such as the floor, the arch tubes or the canopy by separating the solutioned seams, preferably using hot air or toluene solvent. DO NOT separate the hinge tape or seam which joins the upper and lower buoyancy tubes unless the damage extends to this area.
8. Mark the damaged part panel and the four seam areas around it with datum lines normal to the seam edges of the intended repair. These lines form reference points for reassembly.
9. Cut out the damaged part panel from the liferaft. Do not remove any fabric closer than 25mm to existing seams.
10. Cut out the new part panel using the old part panel as a pattern ensuring that a 25mm seam allowance is made all round. Note that the panel must be cut WEFT circumferential, i.e. the fabric weft direction must be around the circumference of the tube being repaired, NOT the circumference of the liferaft. Cut the panel slightly undersize in the weft direction to allow for stretch already existing in the rest of the liferaft.
11. Place the new part panel over the old part panel and transfer the datum lines existing on the old part panel to the new part panel.
12. Clean and prepare the INSIDE surface of the panel and the OUTSIDE surface of the liferaft.
13. Carefully place the part panel into exact relationship with the edges of the hole in the liferaft and make the seams one at a time. Make one longitudinal seam first, then the two short seams, then finally the second longitudinal seam. Reliven the solutioned surfaces as necessary with toluene to ensure a correctly bonded seam. Ensure that the part panel is inserted accurately at all stages. If this is not done the closure of the final seam will be difficult or impossible to complete because the material lengths to be joined will be different, resulting in puckers and air channels which will leak on test.
14. At any position where damage approached closer than 25mm to a seam the part panel shall abut the seam tape. Now apply an appropriately sized patch over the part panel and seam tape (Fig. 602b).
15. Using the techniques described above, reassemble any external fittings to the new part panel.



SOME LIMITS FOR PATCH AND PART PANEL REPLACEMENT

Figure 603

Repair Limits

16. Patches (External)

- a. Patching of the buoyancy tubes is permitted, but there must not be more than 2 patches per panel, and the area of the two patches together must not exceed 25% of the panel area. There must not be more than 12 patches per buoyancy chamber.
- b. In the floor and the water pockets, 4 patches per panel are permitted, but the area of these patches together must not exceed 25% of the panel area. In the canopy, patches are permitted up to a maximum of 50% of the panel area.
- c. If minor damage occurs to the seam between the floor and the buoyancy tube a patch may be fitted providing that it complies with the limits specified in Paragraph d below. In this instance the floor seam must be opened, the floor repaired, the floor seam remade and the patch fitted over the remaining damaged area.

- d. Refer to Fig. 603, and note that a repair patch may be fitted provided that:
 - i) The maximum aspect (length to width) ratio must not be greater than 3:1.
 - ii) The circumferential dimension of a patch must not be greater than 40% of the tube circumference.
 - iii) The damage does not pass under or within 100mm of a major anchorage point such as a towing patch, painter patch or arch tube attachment.
 - iv) The maximum area of a patch must not exceed one eighth of the total panel area.
 - v) The damage does not enter a seam.

17. Part Panel Replacement

A damaged area must be removed, and a part panel inserted, if the damage may not be repaired by patching provided that:

- i) The damage does not enter a seam.
- ii) The circumferential dimension of the part panel must not be greater than 40% of the tube circumference.

18. More Extensive Damage

Repairs not described in this manual and, in particular, complete panel replacements are not permitted except by the manufacturer.

F. Component Repair

1. Pressure Relief Valve

Dismantling the pressure relief valve is not permitted. Replace the complete assembly as follows:

- a. Peel off the external doubler and remove the valve.
- b. Remove all the old adhesive from the sticking area.

- c. Examine the fabric structure for damage; if satisfactory, fit a replacement valve and an external doubler using the patching procedure.
- d. Check the relief and reseat pressures during a subsequent inflation test.

2. Topping-up Valve (Buoyancy Arch/Floor)

- a. Cut out defective valve and doubler.
- b. Select a suitable size of circular patch of material and punch a star cut in the centre of the assembly.
- c. Fit the valve into the material assembly and tighten to the correct torque setting (16.5Nm).
- d. Alternative to a, b, & c: See the Illustrated Parts List.
- e. Solution this assembly into the raft so that it has a 25mm overlap onto the raft material.

3. Inlet Valve, RFD Style (Fig. 604a)

- a. Dismantle the valve in the affected buoyancy and place all the parts to one side (for re-assembly).
- b. Remove the nut and upper plate from the valve and withdraw the remainder of the valve through the tube liner assembly, taking care to avoid misalignment.
- c. Replacement is the reverse of the dismantling procedure except that the threads must be resealed with silicone rubber compound, torque lock nut to 21.7 - 27.1Nm.
- d. When reassembling the manifold bolt and dome end nut, torque to 24.5Nm.

4. Inlet Valve, Leaffield Style (Fig. 604b)

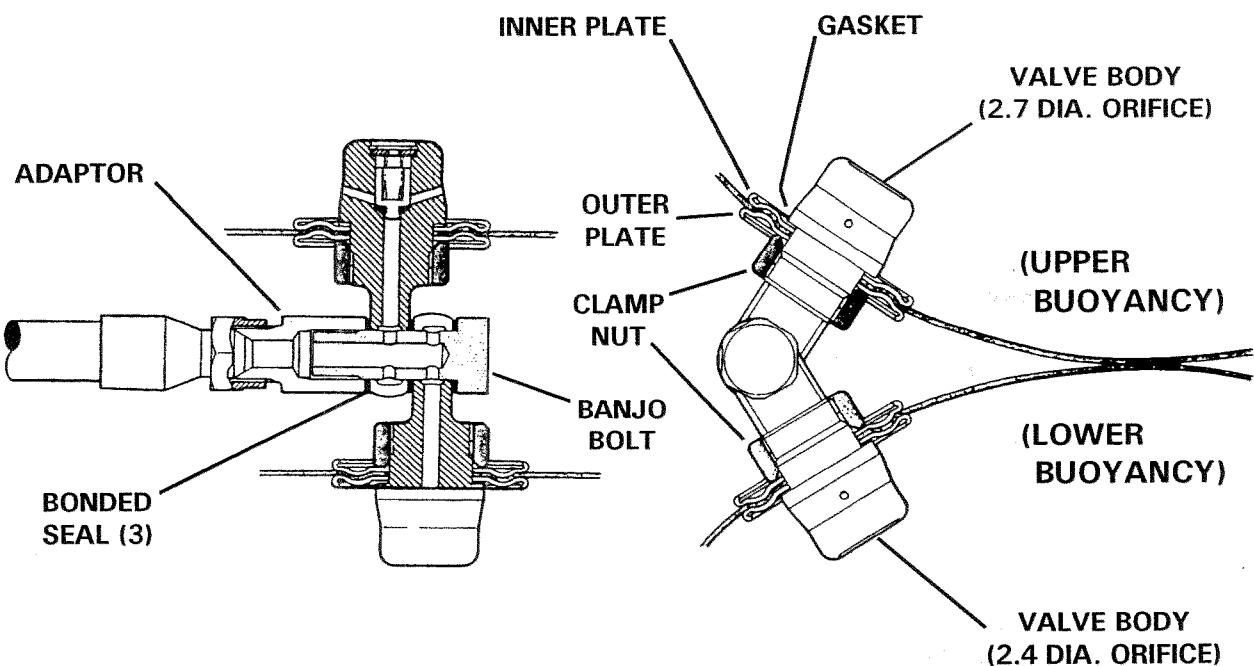
- a. Dismantle the valve in the affected buoyancy and place all the parts to one side (for re-assembly).

- b. Remove the nut and upper plate from the valve and withdraw the remainder of the valve through the tube liner assembly, taking care to avoid misalignment.
- c. Replacement is the reverse of the dismantling procedure but note that the 2.7mm orifice inlet valve must be fitted to the upper buoyancy. Torque the lock nut to 40Nm.
- d. When reassembling the manifold bolt and adaptor, torque to 25 - 28Nm.

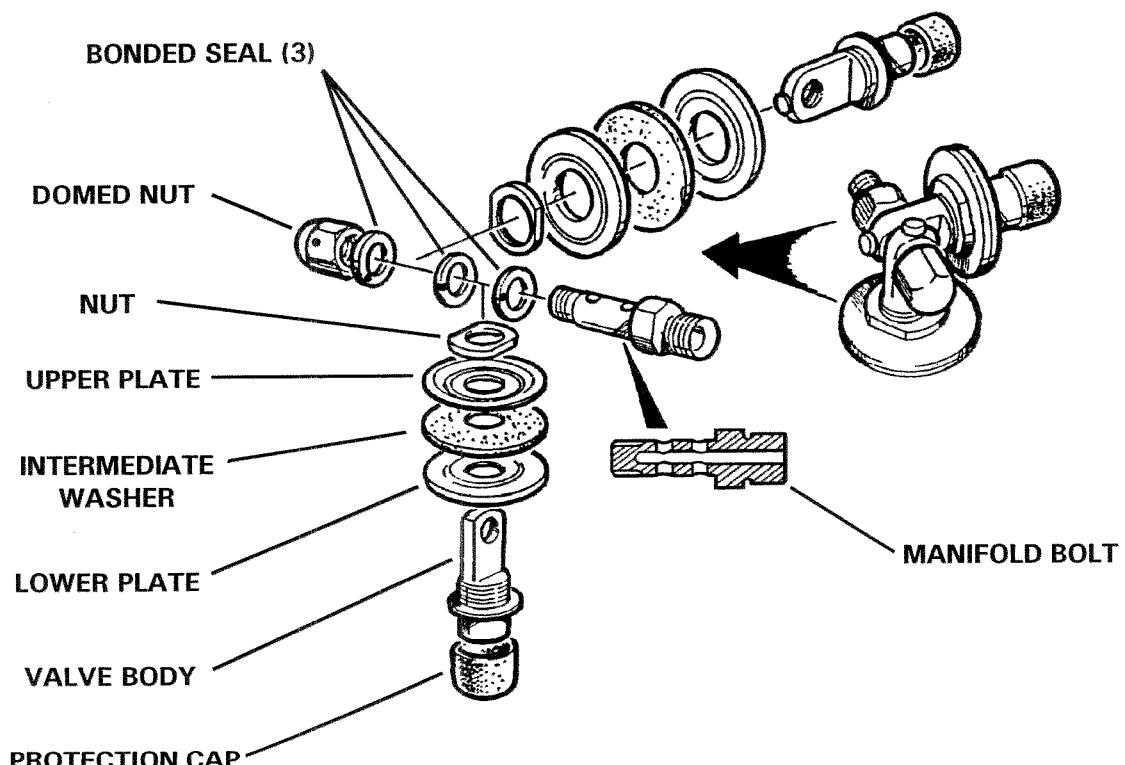
5. Arch Transfer Valve

- a. In this case two slits must be made, one in the buoyancy tube and one in the arch.
- b. Remove the valve through the slit in the buoyancy tube.
- c. The slit in the arch allows access for the spanner and manipulation of the annular nut and washer.
- d. Re-assembly is the reverse of this procedure, ensuring the slits are re-made in accordance with repair procedures; torque the nut to 16.5Nm.

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LEAFIELD INLET CHECK VALVE
FIGURE 604b



RFD INLET CHECK VALVE
FIGURE 604a

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G. Rigid Containers

Classification of Repairs

1. Only minor repairs to glass reinforced plastic (GRP) containers are permitted and these are listed below. When damage exceeds these limits the container is to be returned to an approved glass fibre repair depot for major repair.

Minor Repairs

WARNING:

WHEN ABRADING GLASS FIBRE SURFACES ENSURE THAT HANDS, ARMS AND FACE ARE PROTECTED. WEAR A FACE MASK.

Gelcoat

2. This is the outer surface of the container. Damage to the gelcoat does not affect GRP, although it may expose it to view. Where the gelcoat only is damaged, repair with a proprietary GRP filler, such as Isopon, and proceed as follows:
 - a. Clean the damaged area with acetone to remove all contamination.
 - b. Trowel the plastic filler in until it is proud of the adjacent surface of the container.
 - c. Cover with cello tape or similar adhesive tape and allow to harden.
 - d. Remove the tape and abrade the repaired area to blend with the container surface.
3. To apply paint to the container, proceed as follows:
 - a. Fill any cracks or voids in the gelcoat with plastic filler.
 - b. Remove any loose labels.
 - c. Wash the container with a solution of detergent and water and rinse with clean water.
 - d. Remove grease, tar etc. with a suitable solvent, e.g. coal tar naptha.

- e. Spray paint one coat of white epimide or polyurethane paint or an approved alternative.

Note:

A container requires approximately 0.2 litre of paint.

4. Replace damaged or illegible labels and re-stencil illegible markings.

Major Repairs

5. A major repair is required for any damage to a container that is more serious than damage to the gelcoat only. Major repairs to the glass fibre containers are not permitted except by specially trained and approved personnel. The limits of repair are given below. When container damage reaches these limits no attempt at repair is to be made, and the damaged shell or shells of the container must be replaced.

Repair Limits

6. The limits of repair are:

- a. Holes or penetrating damage (i.e. through the glass fibre mat) over an area of more than 77 square centimetres on the outer surface of the container.
- b. Holes or penetrating damage over an area of more than 58 square centimetres on the inner surface of the container.
- c. Breakage of the rims on either half of the container shell.

Note:

The limits above, apply to the TOTAL area of damage, so that if, for example, repair is required at both ends of the container, then the permissible areas of repair for each end must not TOGETHER total more than the prescribed limits.

RFD SEASAVA plus X SERVICE MANUAL

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CHAPTER 7

EMERGENCY PACKS AND EQUIPMENT

<u>Section</u>	<u>Page</u>
A. Emergency Equipment (Typical Contents)	702
B. General	703
C. Equipment Bag Preparation	703
D. Other Equipment.....	703

Note:

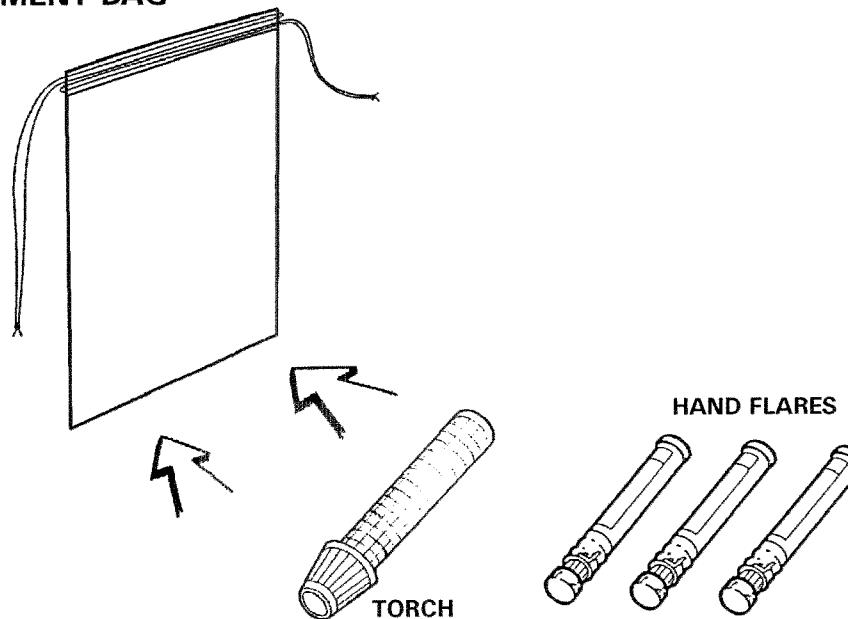
For Inspection Procedures for Emergency Equipment refer to Chapter 4-0 for details.

CHAPTER 7

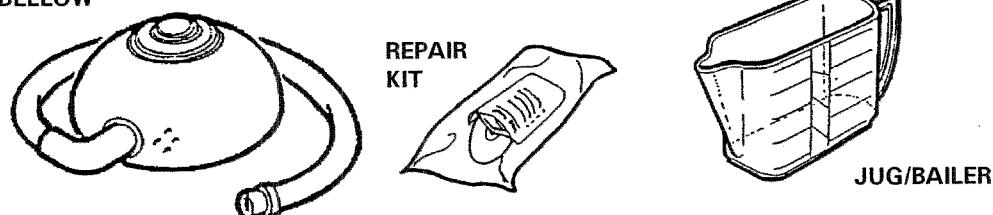
EMERGENCY PACKS AND EQUIPMENT

A. Emergency Equipment - Typical Contents

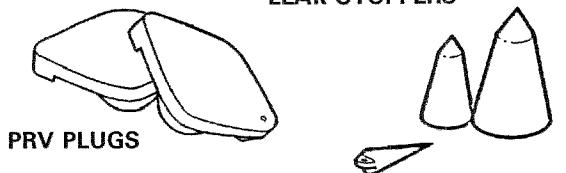
EQUIPMENT BAG



BELLOW



LEAK STOPPERS



SPONGES



**Figure 701
(ORC PACK ILLUSTRATED)**

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B. General

Each SEASAVA plus X liferaft is packed complete with an emergency pack stowed inside an equipment bag. The contents of this emergency pack are illustrated in Figure 701.

C. Equipment Bag Preparation

The manner and order of packing of the equipment bag contents are not subject to special control. It is suggested, however, that the bellow is inserted first, followed by the various small items and, lastly, by the jug/bailer. The bag and contents shall be well protected by the folded liferaft, when installed properly as described in Chapter 8.

D. Other Equipment

A number of emergency items are packed within the liferaft ready for immediate use. These are the immediate action leaflet, paddles, rescue line and quoit, and the drogue. Seasickness tablets are sealed in a polythene bag and secured to the rainwater catchment tube.

RFD SEASAVAplus X SERVICE MANUAL

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CHAPTER 8

ASSEMBLY AND REPACKING

<u>Section</u>	<u>Page</u>
A. General	803
B. Preparation of Component Parts	803
C. Packing in a Valise (Pre-1997 method)	806
D. Packing in a Container (Pre-1997 method)	808
E. Packing in a Valise (1997 onward)	823
F. Packing in a Container (1997 onward)	825

RFD SEASAVA plus X SERVICE MANUAL

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CHAPTER 8

ASSEMBLY AND REPACKING

A. Introduction and General

1. The final, operational, assembly of liferafts is dealt with in separate sections, though Section B - the preparation of constituent parts - is common to all styles of product. Sections C and D describe the packing method for valise and container employed pre-1997 and which must still be employed on a particular liferaft configuration (see the notes at the start of each section). In all other cases, henceforwards, Sections E and F are to be followed.
2. The work area and packing table must be clean, dry and free from sharp projections, with a smooth working surface, preferably of vinyl material.
3. Special Tools, Equipment and Materials:
Refer to Chapter 10 for the list of relevant items that are required during preparation and the assembly and repacking of the liferaft.
4. In the description of packing, components which are listed within the Illustrated Parts List (Chapter 11) appear in *italic print*.
5. Throughout this chapter, all 'ties' are bowlines unless stated otherwise, and are to be served with 25mm wide adhesive tape or as otherwise detailed. The ends of nylon cords are to be heat sealed to prevent fraying.

B. Preparation of Component Parts

For each liferaft carry out the following operations (Figure 801):

1. Fit adaptors and female couplings to the *inflate/deflate valves*.
2. Fit a plug, tail (male coupling) to a low pressure air line, and to the manometer feed line. Connect the low pressure air line to each inflate/deflate valve as necessary, and slowly inflate the liferaft to approximately 1400mm Water Gauge.

Note:

Inflation of the liferaft is essential to ensure correct fitting and rigging of the equipment, and to ensure that the liferaft is the correct shape for packing after deflation.

3. Tie the end of the tethering cord of the *floating safety knife* to the inner lifeline using a running bowline. Ensure the blade protection piece is in place and wind the excess tethering cord around the handle of the knife before securing the knife to the inner lifeline using two turns of breaking thread in two places.
4. Tie off the *anti-seasickness tablets* in their *labelled bag*, the log cards and the *immediate action leaflet* to the rain-water tube using 22.5kgf cord. Fit the *rubber plug* to the rain-water catchment tube.
5. If the *drogue assembly* has been unrolled for any reason, it must be reassembled as follows (Figure 802):
 - a. Flake the six attached cords and the single streaming line into the body of the drogue until approximately 1 metre of line remains outside.
 - b. Roll up the drogue from the ends. Stop the drogue from unrolling by temporarily securing it with two elastic bands.
 - c. Tie the streaming line to the drogue/painter loop patch.
 - d. Tie the rolled drogue about the nearest outer lifeline loop patch using 2 turns of 3.2kgf linen breaking thread and a reef knot on either side of the loop patch. Carefully cut and discard the elastic bands.
6. If the *rescue line and quoit* has been dismantled for any reason, it must be reassembled as follows (Figure 803):
 - a. Construct a simple winding jig. Leaving 1220mm free, wind the line 25 times around the posts, finishing at the post furthest away from the spare line. Temporarily secure the wound line with ties or adhesive tape.
 - b. Take the line diagonally across the jig to the bottom of the remaining front post, and wind the line a further 25 times around the posts finishing with approximately 460mm of spare line. Temporarily secure.
 - c. Attach the quoit to the end of the line where winding started.
 - d. Bring the 460mm end back to the same end as the quoit. Remove the ties or adhesive tape and push all the line into the polythene sheath.

- e. Tie in the spare end of line using a bowline, and tape over the bowline and the flying end with 25mm adhesive tape. Flake the loose line with the attached quoit along the polythene sheath and, using 3.2kgf linen breaking thread, tie through the quoit, around the sheath and through the inner lifeline to one side of the loop patch. Repeat this operation on the other side of the loop patch.
7. Check that the doorway is properly furled and is secured with the tie tapes.
8. Tie off a 1000mm line of 238kgf nylon cord (for the emergency pack), using a running bowline, to the inner lifeline between the two loop patches adjacent to the doorway on the right-hand side. Tie off two 1000mm pieces of 22.5kg cord (for the paddles) similarly.
9. Screw the *inflation hose* onto the *inlet manifold bolt* (torque at 16.3Nm). Fit the *valve protection tube*, securing with 25mm adhesive tape.
10. Deflate the liferaft on the packing table with the open doorway facing the table edge. As deflation progresses, fold the canopy and arch tube evenly; flatten the buoyancy chambers to keep their hexagonal shape.
11. Prepare the cylinder assembly:

WARNING:

BEFORE USE, ENSURE THAT INADVERTENT DEPLOYMENT OF THE OPERATING HEAD IS PREVENTED BY TAPING BACK SECURELY THE OPERATING CABLE (OR ENSURING THE SAFETY PIN IS FITTED ON LEAFIELD OPERATING HEADS).

ENSURE THAT NO OPERATING HEAD IS ATTACHED TO A CYLINDER UNLESS A RECOIL CAP IS FITTED TO THE CYLINDER OUTLET.

- Thanner components: remove the valve safety cap and screw in the *knife & knifeway assembly* (hand tight), then screw the *operating head* onto the valve - torque to 60 NM (special tools are required).
- Leafield components: remove the valve safety cap and locate the *operating head* onto the valve. Fit the clamp and tighten the clamp screw until the operating head can just be turned on the valve by hand.

More extensive information regarding the respective inflation equipment should be sought from the associated publications.

C. Packing in a Valise (Pre-1997 Method)

Check the size of liferaft and the part number of the gas cylinder - this method now applies only to 6 person liferafts using cylinder PN 41682001.

1. When packing the liferaft into a valise, we advise you to use a packing jig. You can make this packing jig yourself. Its internal dimensions are slightly larger than the dimensions of the valise: 730mm long x 430 wide x 230 high
2. Place the valise into the packing jig, the larger part lowermost.
3. Place the valise and the packing jig between the deflated liferaft and the edge of the packing table. The painter exit hole must face towards the left-hand side.
4. Put the painter sachet on the bottom of the valise. Identify the free and the liferaft ends of the painter (Figure 804). Put the sachet in the position shown. Attach it to the side of the valise with 50mm black adhesive tape.
5. Tie the free end of the painter to the elastic loop on the inner side of the painter exit patch of the valise (Figure 804).
6. Put the encapsulating bag into the valise as shown in Figure 805.
7. Tie the liferaft end of the painter through the eyelet in the encapsulating bag conduit (Figure 805).
8. Open the encapsulating bag and push it out to fill the corners of the valise. Fold the upper edges over the sides of the packing jig.
9. Attach the inflation cylinder assembly to the underside of the floor of the liferaft using the retention straps. Secure the neck to the loop patch using two turns of 238kg nylon cord tied using a reef knot and tape the flying ends. Attach the hose; torque at 19Nm.
10. Pull the edge of the liferaft nearest the packing jig up and over the width of the valise so that the inflation cylinder rests in the valise towards the rear of the packing jig (Figure 806). The operating head shall be facing the painter exit hole in the valise. The part of the liferaft draped over the front edge of the packing jig shall be folded over the emergency pack later. Push the liferaft into all of the corners of the valise/packing jig.
11. Permanently attached to the inner side of the encapsulating bag, there is a painter link line and a short lightweight (238kg) firing line. Tie off the flying end of the link line to the painter patch on the liferaft. Attach the firing line to the operating head cable using a bowline at the point marked on the line with black ink - this point is approximately 25mm from the bowline knot attachment to the bag (Figure 807).

CAUTION:

TAKE CARE TO PREVENT INADVERTENT DEPLOYMENT OF THE INFLATION CYLINDER.

12. Put the paddles into the liferaft between the cylinder and the front of the packing jig (Figure 806). Orientate them paddle to paddle and back to back thus minimising pack volume. Tie them using the 23 kgf. terylene cords provided earlier (Paragraph B8).
13. Put the emergency pack on top of the paddles with the bellow to the left-hand side. Tighten the equipment bag pull cords and tie them to the 238 kgf. nylon cord provided.
14. Remove air from the liferaft by suction through the inflate/deflate valves. Await the formation of hard creases before re-fitting the plugs to the inflate/deflate valves.
15. Fold back the part of the liferaft draped over the front of the packing jig on top of the emergency pack and the paddles.
16. Fold the sides of the liferaft in line with the edges of the valise. Make one additional fold (Figure 808).
17. Roll the folded liferaft, starting from the rear, into the valise. Position the righting strap below the A8 evacuation valve in the encapsulation bag; it will allow air to flow out of the valve when vacuum is applied.
18. Pull the open edges of the encapsulating bag together. Heat seal the open edges of the encapsulating bag starting from the existing seal at the top conduit across the width of the bag (Figure 809). The positions of the heat seals are already marked on each encapsulating bag. Immediately prior to forming the last seal, introduce a vacuum line into the bag and evacuate the bag sufficient for the pack to fit the valise.
19. Close the valise around the liferaft. Provided the encapsulating bag is evacuated correctly, the closure velcro tapes shall mate evenly.
20. Confirm that the markings on the valise are correct.

D. Packing in a Container (Pre-1997 Method)

Check the size of liferaft and the part number of the gas cylinder - this method now applies only to 6 person liferafts using cylinder PN 41682001.

1. Put the lower half of the *fibreglass container* on the packing table between the table edge and the deflated liferaft. The painter exit hole must be to the left.
2. Put the *painter sachet* into the lower half of the container. Identify the free end and the liferaft ends of the painter (Figure 804). Put it in the position shown. Attach it to the container with 50mm black adhesive tape.
3. A *grommet* is already attached to the painter. Apply silicone grease to the groove in the grommet before pushing the grommet into the hole in the lower half of the container.
4. Put the *encapsulating bag* into the container as shown in Figure 805.
5. Tie the liferaft end of the painter through the eyelet in the encapsulating bag conduit (Figure 805).
6. Open the encapsulating bag. Fold its edges over the sides of the container.
7. Attach the inflation cylinder assembly to the underside of the floor of the liferaft using the retention straps, observing the correct orientation (operating head to the left). Secure the neck to the loop patch using two turns of 238kg nylon cord tied using a reef knot and taping the flying ends. Attach the inflation hose; torque at 19Nm.
8. Pull the edge of the liferaft nearest the packing jig up and over the width of the container so that the inflation cylinder rests in the container towards the rear. The operating head shall be facing the painter exit hole. Any part of the liferaft draped over the front edge of the container shall be folded back over the emergency pack later.
9. Permanently attached to the inner side of the encapsulating bag, there is a painter link line and a short lightweight (238kg) firing line. Tie off the flying end of the link line to the painter patch on the liferaft. Attach the firing line to the operating head cable using a bowline at the point marked on the line with black ink - this point is approximately 25mm from the bowline knot attachment to the bag (Figure 807).

CAUTION:

TAKE CARE TO PREVENT INADVERTENT DEPLOYMENT OF THE INFLATION CYLINDER.

10. Put the paddles into the liferaft between the cylinder and the front of the container (Figure 806). Orientate them paddle to paddle and back to back thus minimising pack volume. Tie them using the 23 kgf. terylene cords provided earlier (Paragraph B8).
11. Put the emergency pack on top of the paddles with the bellow to the left-hand side. Tighten the equipment bag pull cords and tie them to the 238 kgf. nylon cord provided.
12. Remove air from the liferaft by suction through the inflate/deflate valves. Await the formation of hard creases before fitting the plugs to the inflate/deflate valves.
13. Fold back any part of the liferaft draped over the front of the container on top of the emergency pack and the paddles.
14. Fold the sides of the liferaft in line with the edges of the container. Make one additional fold (Figure 808).
15. Roll the folded liferaft, starting from the rear, into the container..
16. Pull the open edges of the encapsulating bag together. Heat seal the open edges of the encapsulating bag starting from the existing seal at the top conduit across the width of the bag (Figure 809). The positions of the heat seals are already marked on each encapsulating bag. Immediately prior to forming the last seal, introduce a vacuum line into the bag and evacuate the bag sufficient for the pack to fit the container.
17. Put the top half of the container in place on top of the packed liferaft.
18. Put four metal tubes on the flanges of the container (Figure 810). Attach them temporarily with double sided adhesive tape. Put a strap around the container and the metal tubes. Tighten the strap and lock it by tightening the crimp. This will hold the halves of the container together while the sealing strip is attached.
19. The *sealing strip* will join the flanges of the upper and lower halves of the container. It will attach to an area 75 mm. wide on each flange of the upper and lower halves of the container.
 - Apply masking tape around the flanges of the container to mark the 75 mm. wide area (Figure 810).
 - Make this area rough by rubbing it with grade 100 abrasive paper.
 - Clean the rough area with toluene.
 - Apply *primer* and allow it to dry.
20. Cut a length of *sealing strip*.
The length of the strip will be 2.6 metres.
Buff the flat inner surface no more than one day prior to use.

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22. Apply three coats of *adhesive solution* to the rough area of the flanges of the container. Apply three coats of adhesive solution to the buffed side of the sealing strip. Let the first coat become dry before you apply the second coat. Let the second coat become dry before you apply the third coat. Wait for the third coat to become tacky.
23. Cut a piece of *RFD258 strip* 180mm long (x 50mm wide). Attach it to the flanges of the container at the place where the ends of the sealing strip will meet (Figure 810).
24. Fit the sealing strip. Start at the place where the piece of RFD258 is attached to the container.
25. When the sealing strip is attached to the whole circumference of the flange, cut the finishing end of the sealing strip to join its starting end. The gap between the two ends of the sealing strip shall not be more than 4 mm.
26. Make the ends of the sealing strip rough using grade 100 abrasive paper in the area of the piece of RFD258. Clean this area with toluene and apply adhesive solution and, when this becomes tacky, fold the flying ends of the piece of RFD258 over the sealing strip joint.
27. Apply a coat of Cold Dip coating over the whole length of the sealing strip.
28. Let the adhesive solution cure for at least two hours. Then remove the strap and the metal tubes. Remove the masking tape.
29. Confirm that the markings on the container are correct.

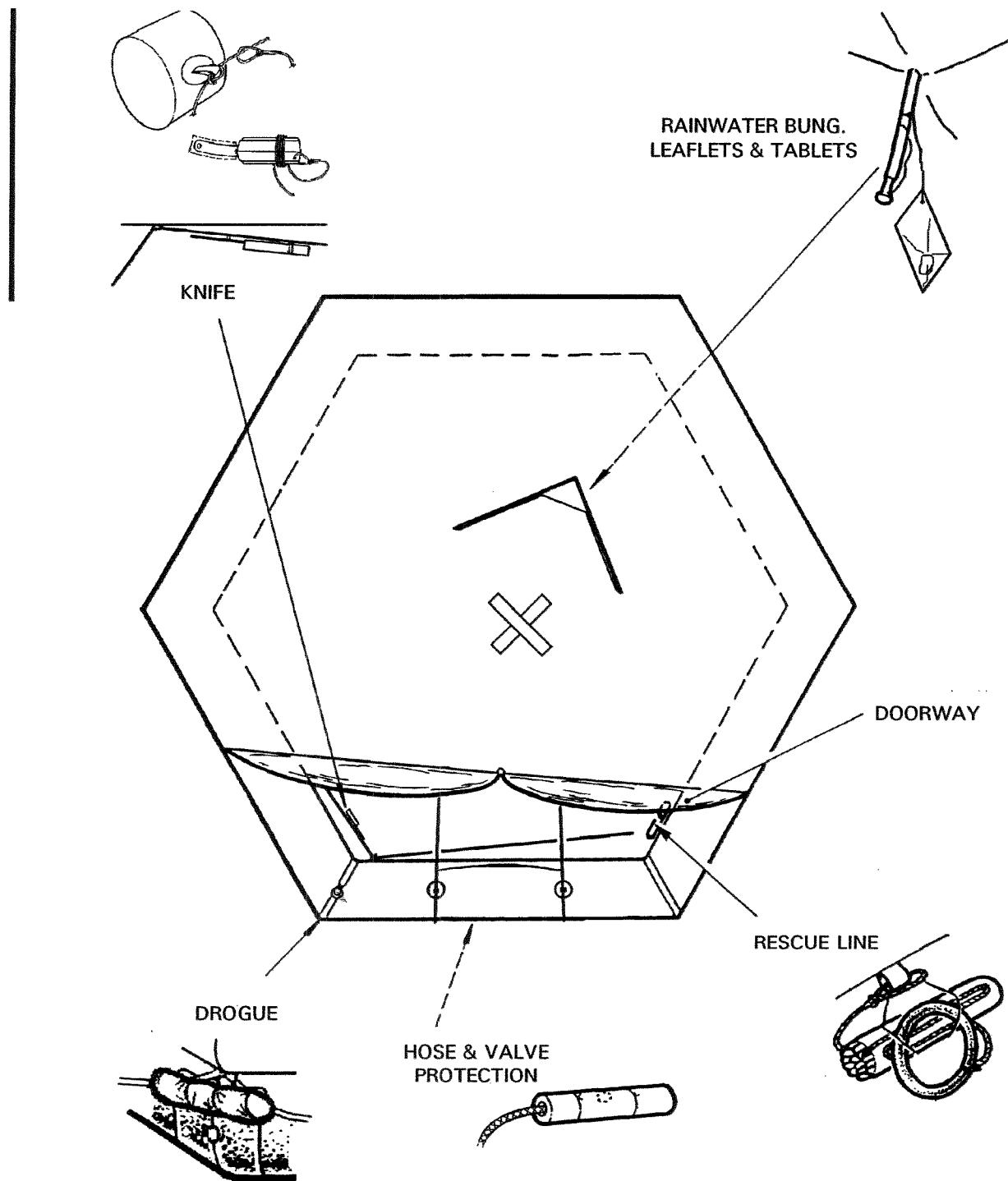


Figure 801
PREPARATION FOR PACKING

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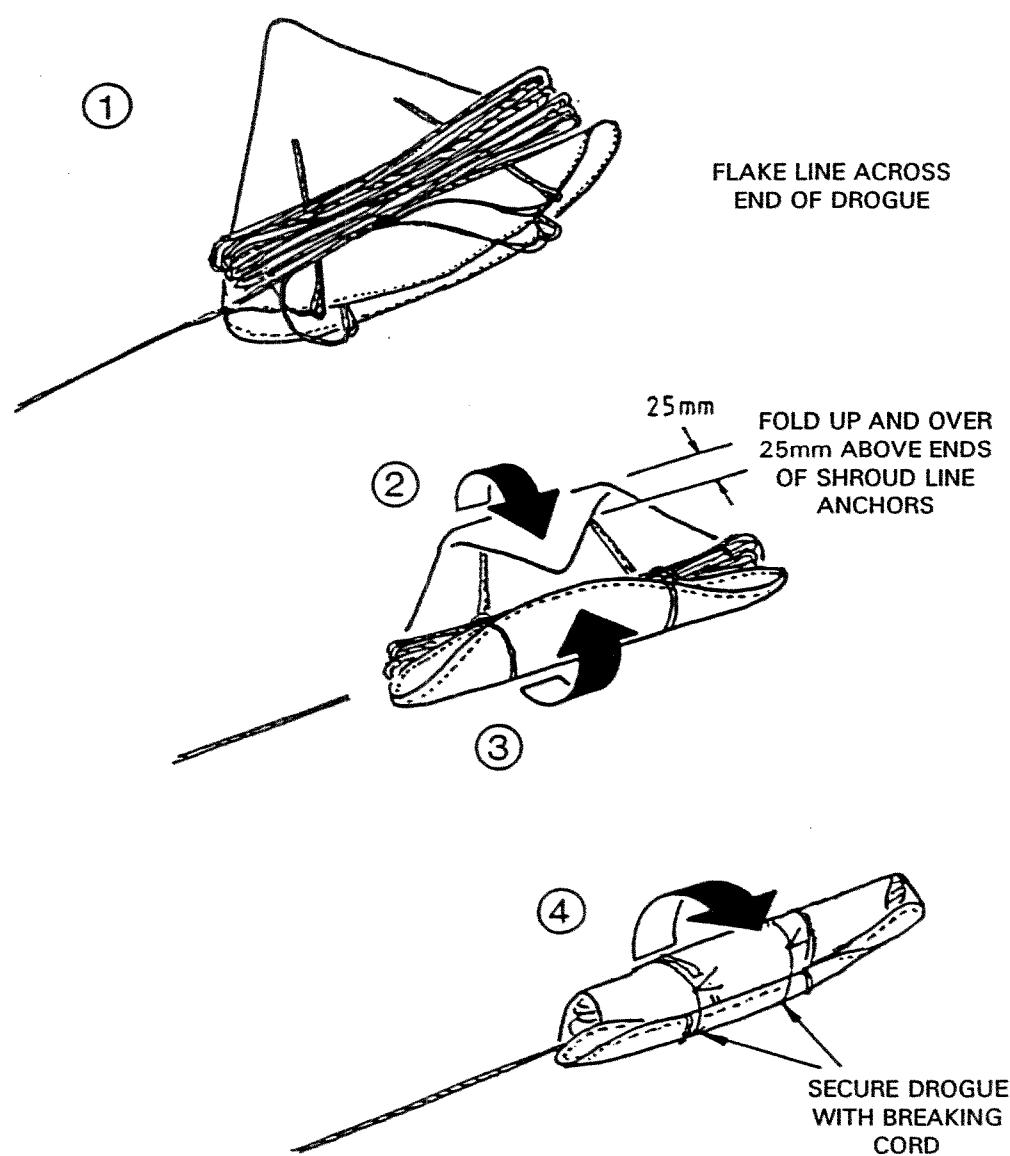


Figure 802
PREPARATION OF THE DROGUE

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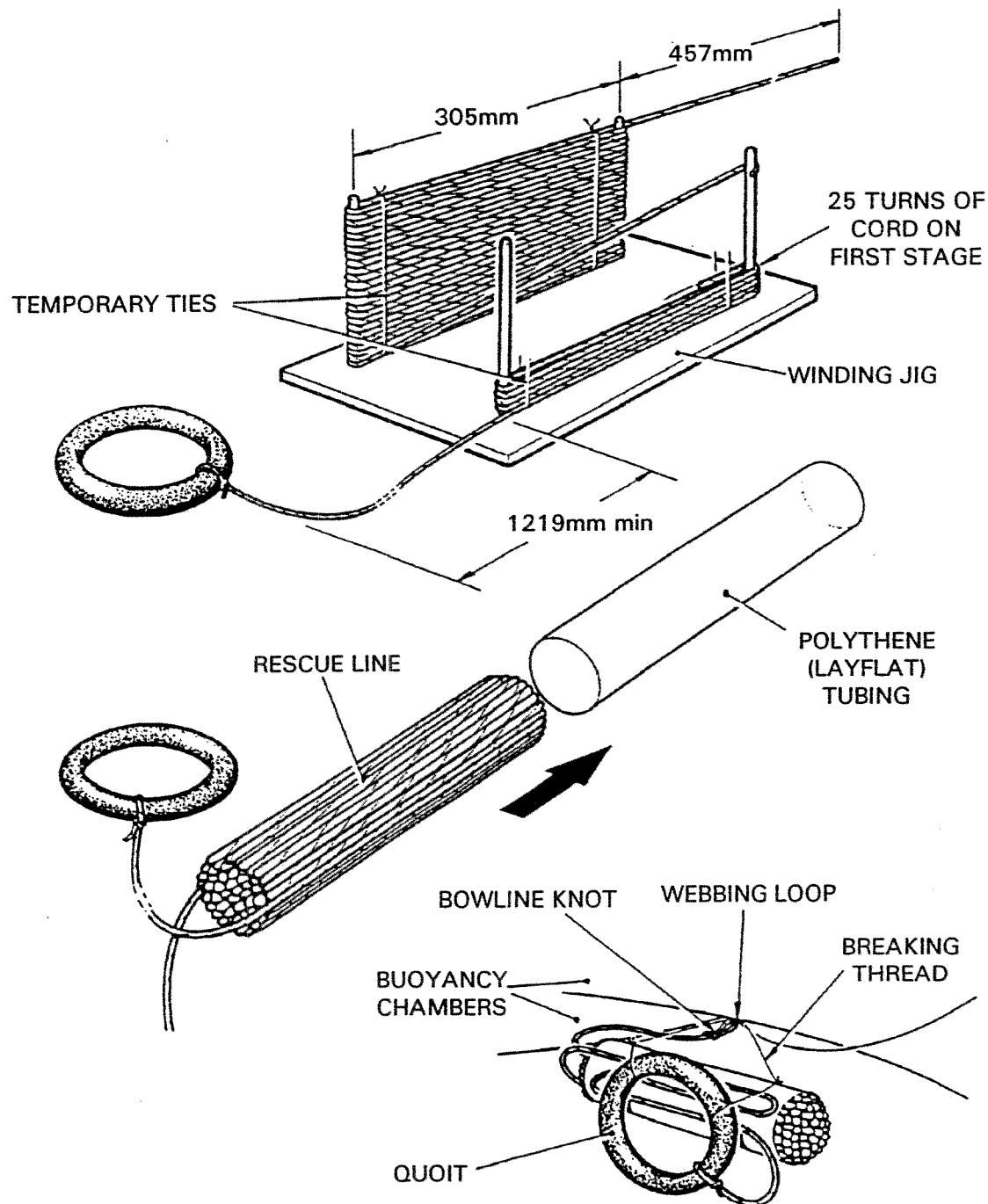


Figure 803
REASSEMBLY OF RESCUE LINE AND QUOIT

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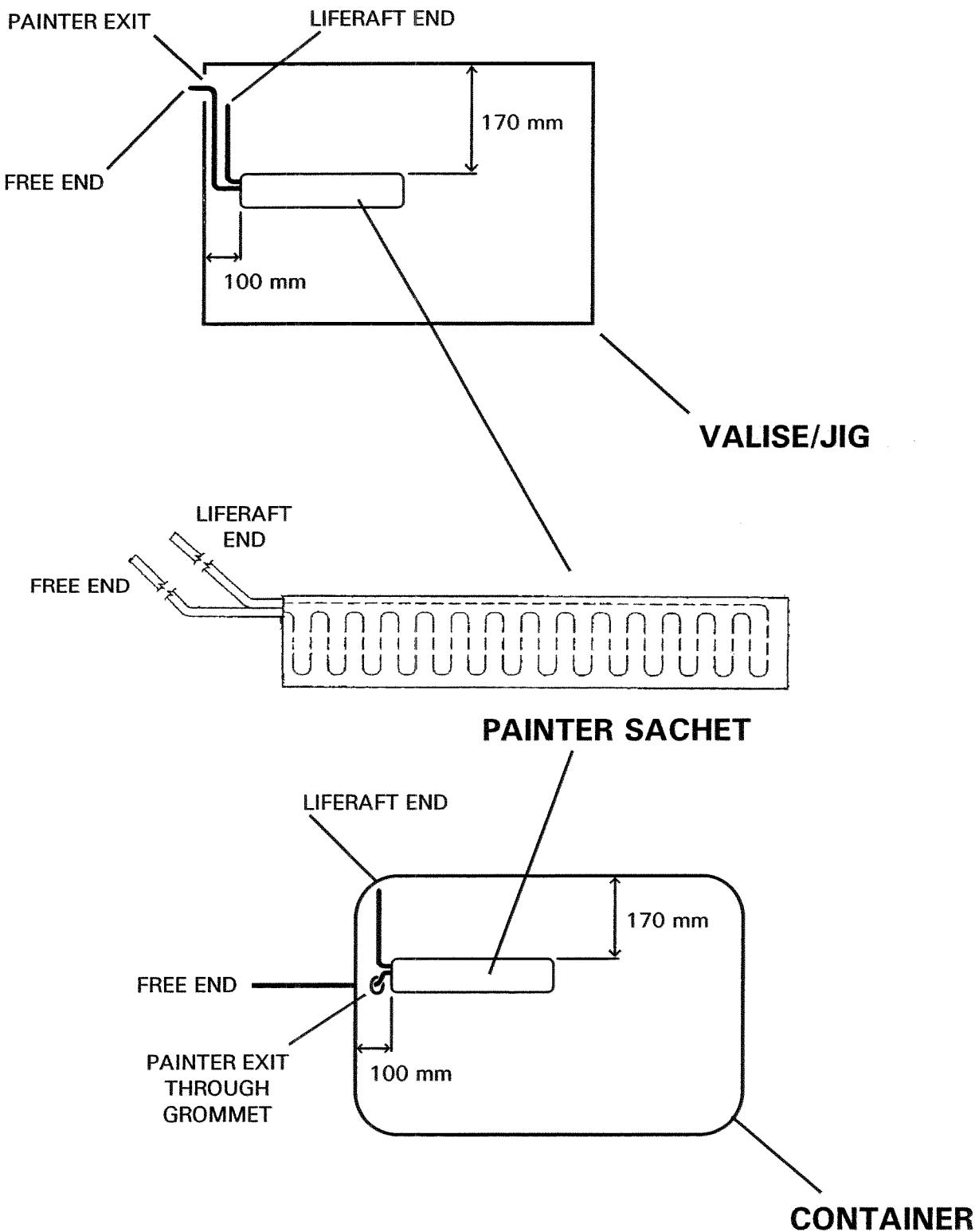


Figure 804
PAINTER SACHET AND LOCATIONS IN VALISE AND CONTAINER
(6 PERSON LIFERAFTS USING GAS CYLINDER PN 41682001 ONLY)

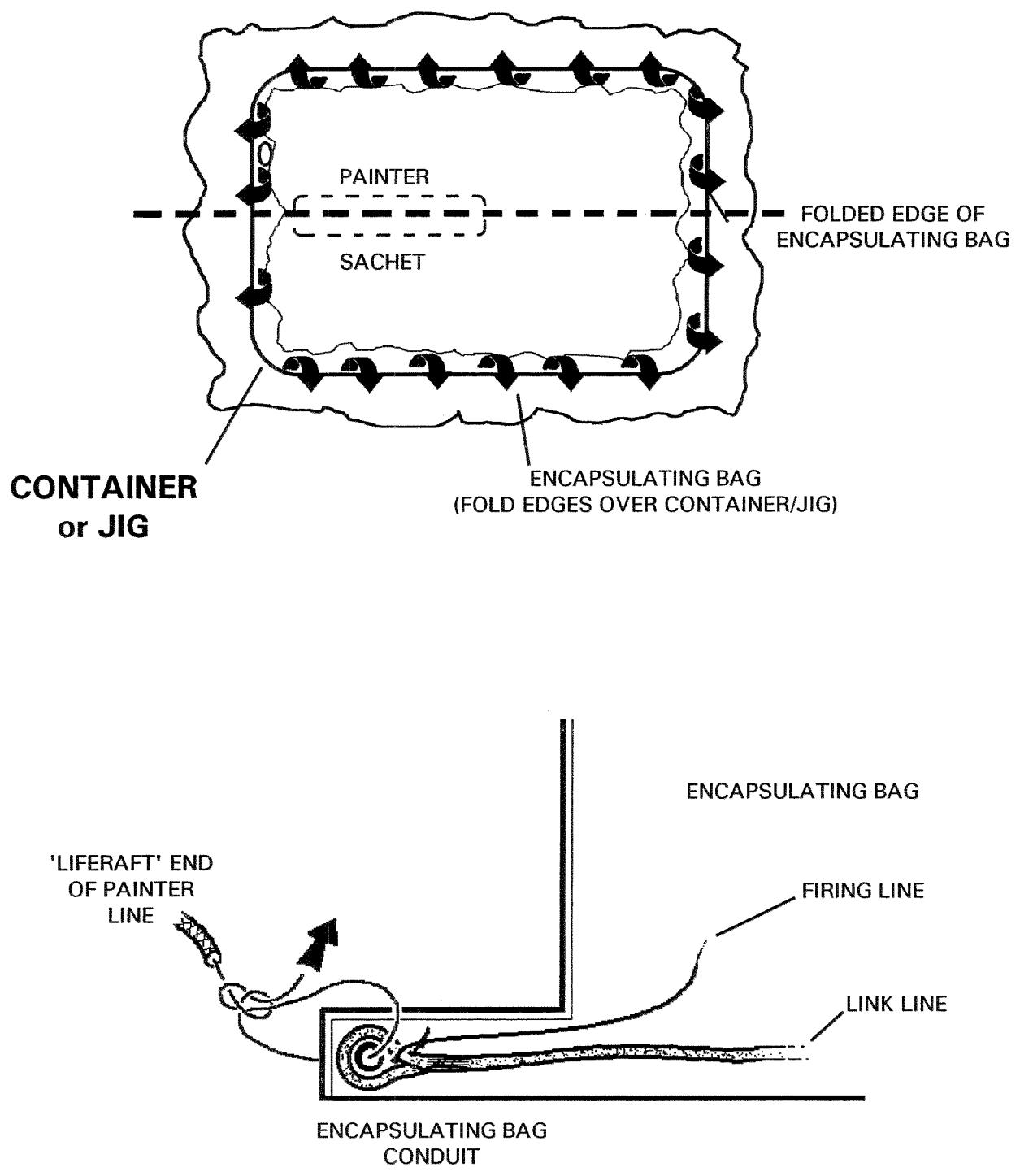
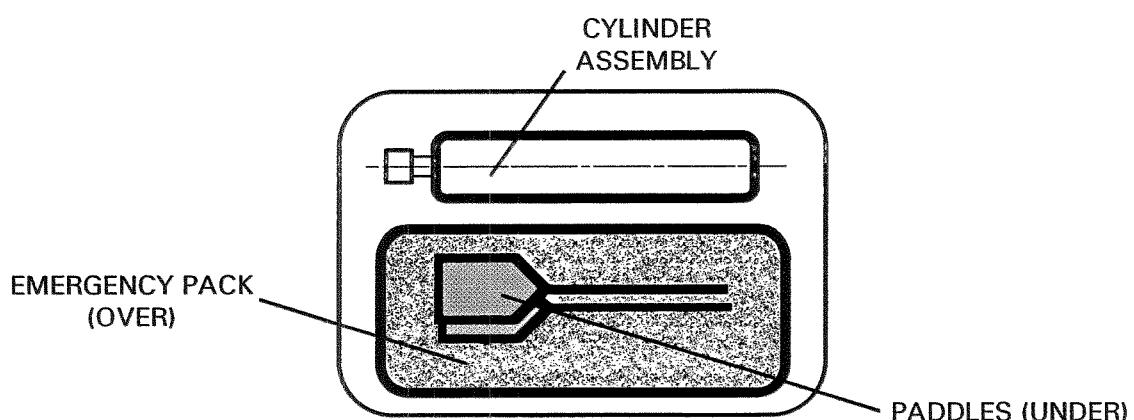
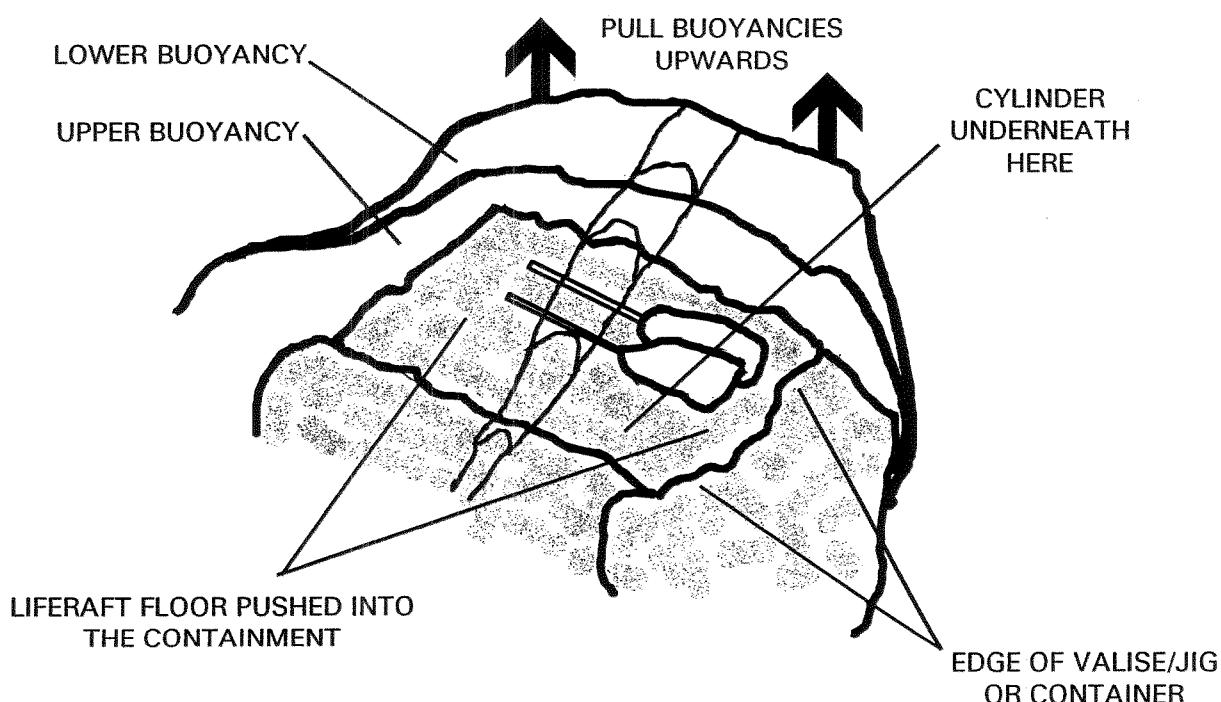
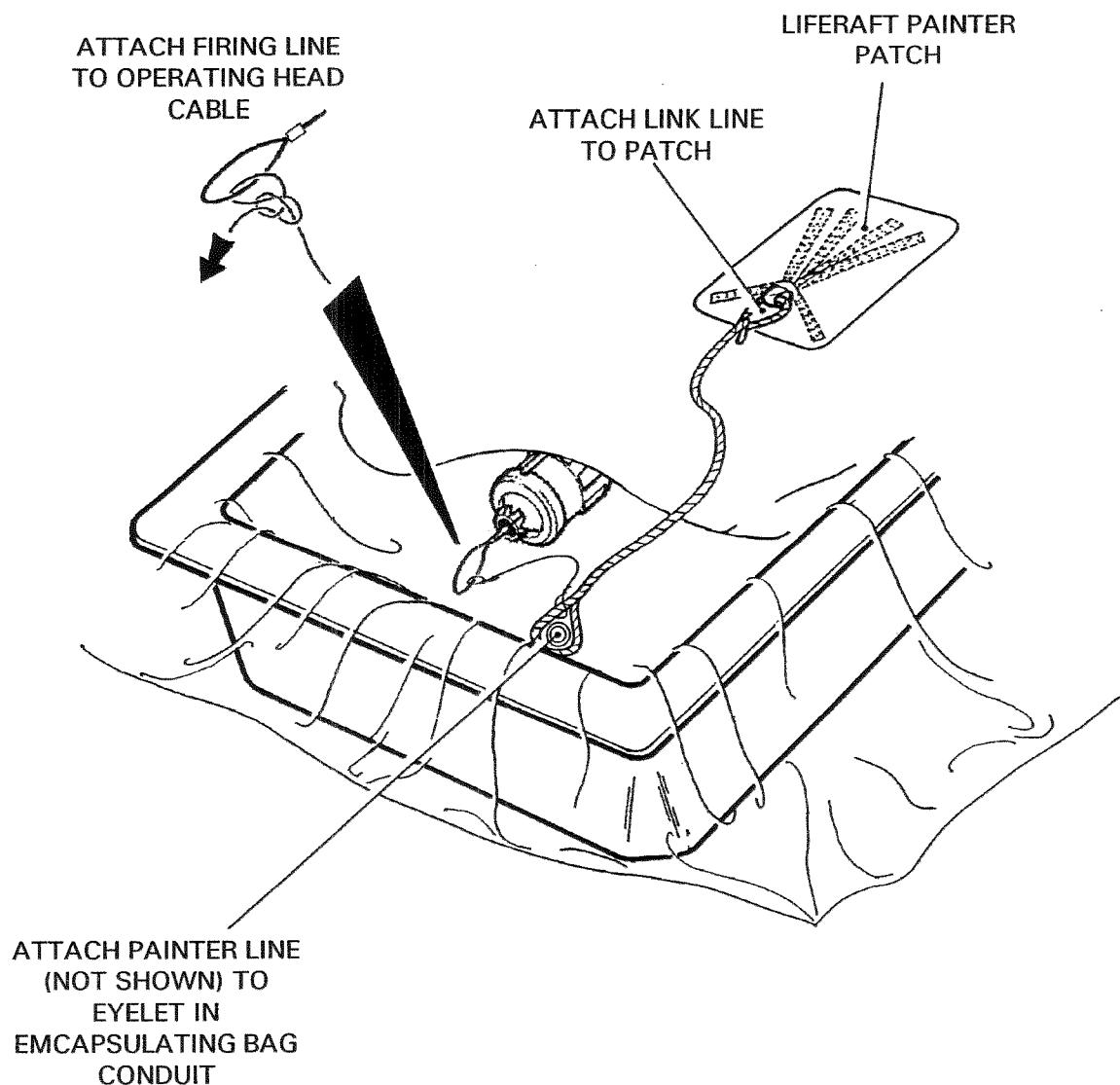


Figure 805
ENCAPSULATING BAG INSTALLATION IN VALISE AND CONTAINER
(6 PERSON LIFERAFTS USING GAS CYLINDER PN 41682001 ONLY)

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**Figure 806
RELATIVE POSITIONS OF MAIN ITEMS
(6 PERSON LIFERAFTS USING GAS CYLINDER PN 41682001 ONLY)**



**NOTE! FOR THE SAKE OF CLARITY, THE LINES ARE SHOWN WITH
CONSIDERABLY MORE SLACKNESS THAN IS ACTUALLY THE CASE**

**Figure 807
ATTACHMENT OF THE PAINTER, LINK & FIRING LINES**

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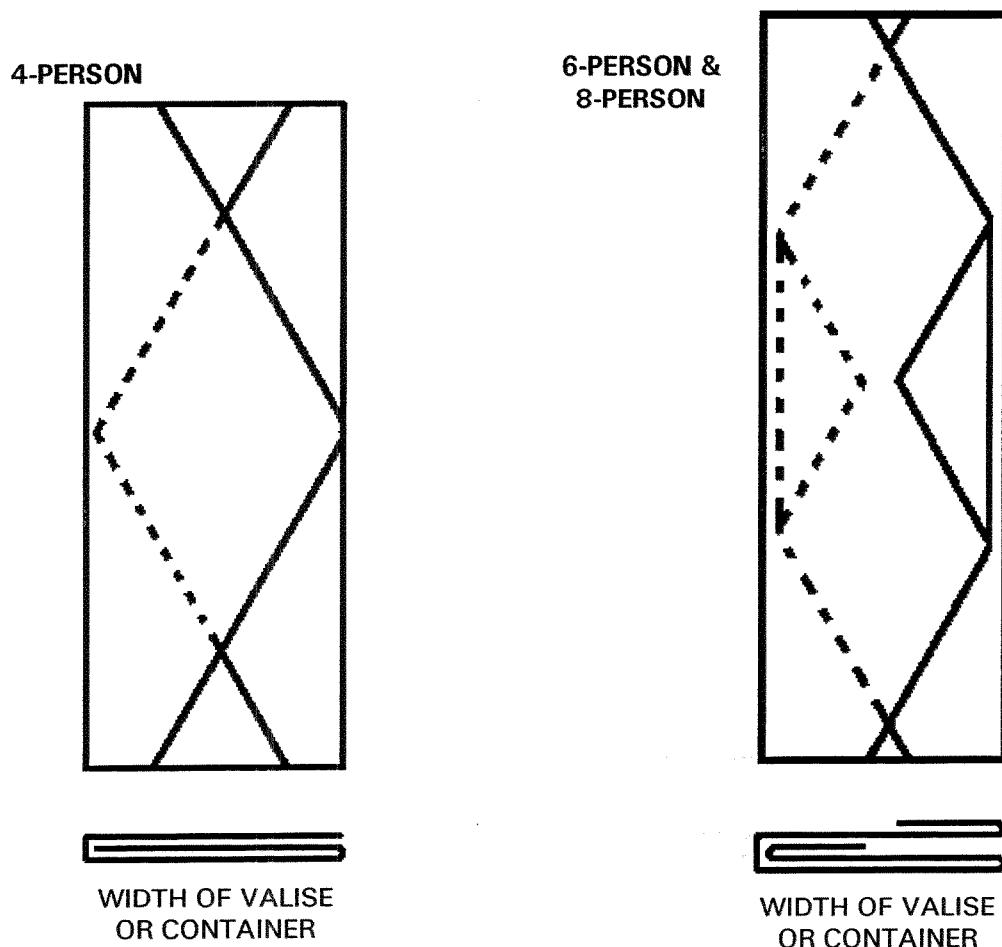


Figure 808
FOLDING THE LIFERAFTS

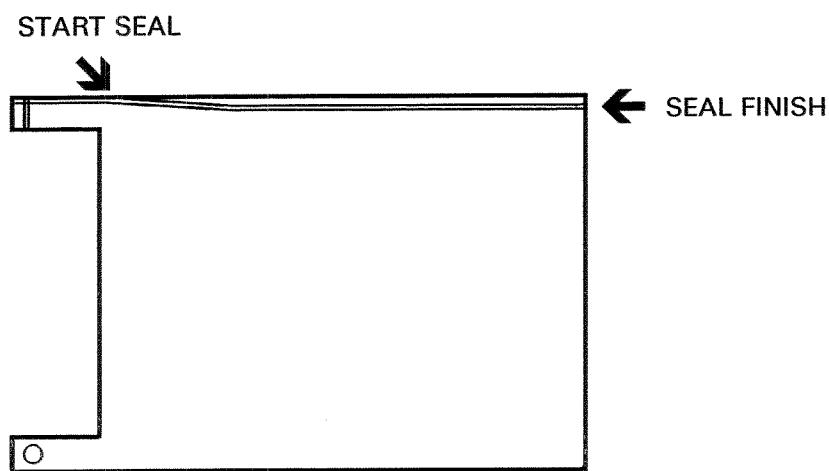
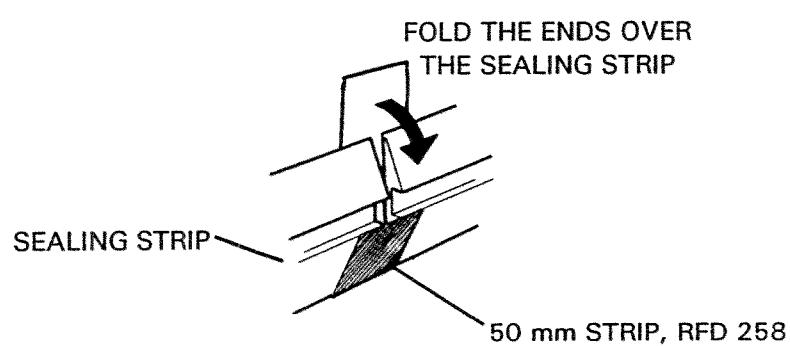
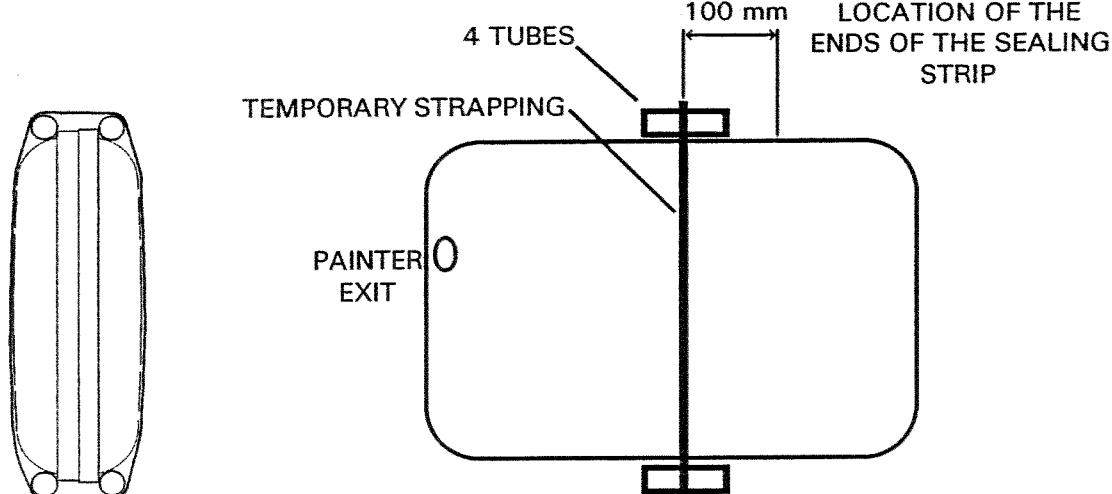
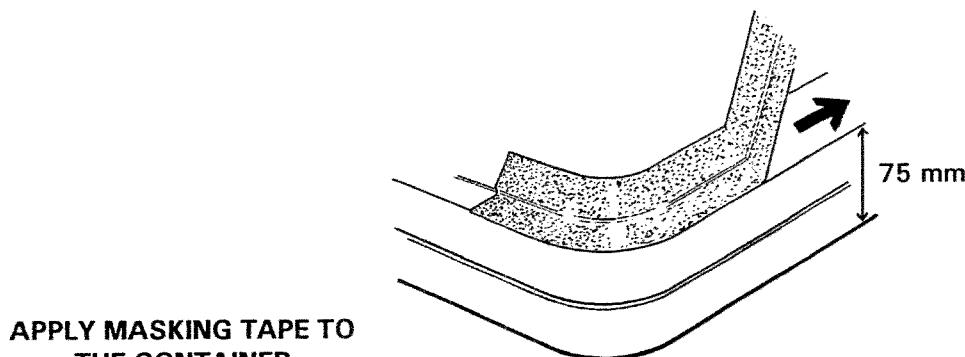


Figure 809
SEALING THE ENCAPSULATING BAG

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**Figure 810
CLOSING THE CONTAINER**

RFD SEASAVAplus R SERVICE MANUAL

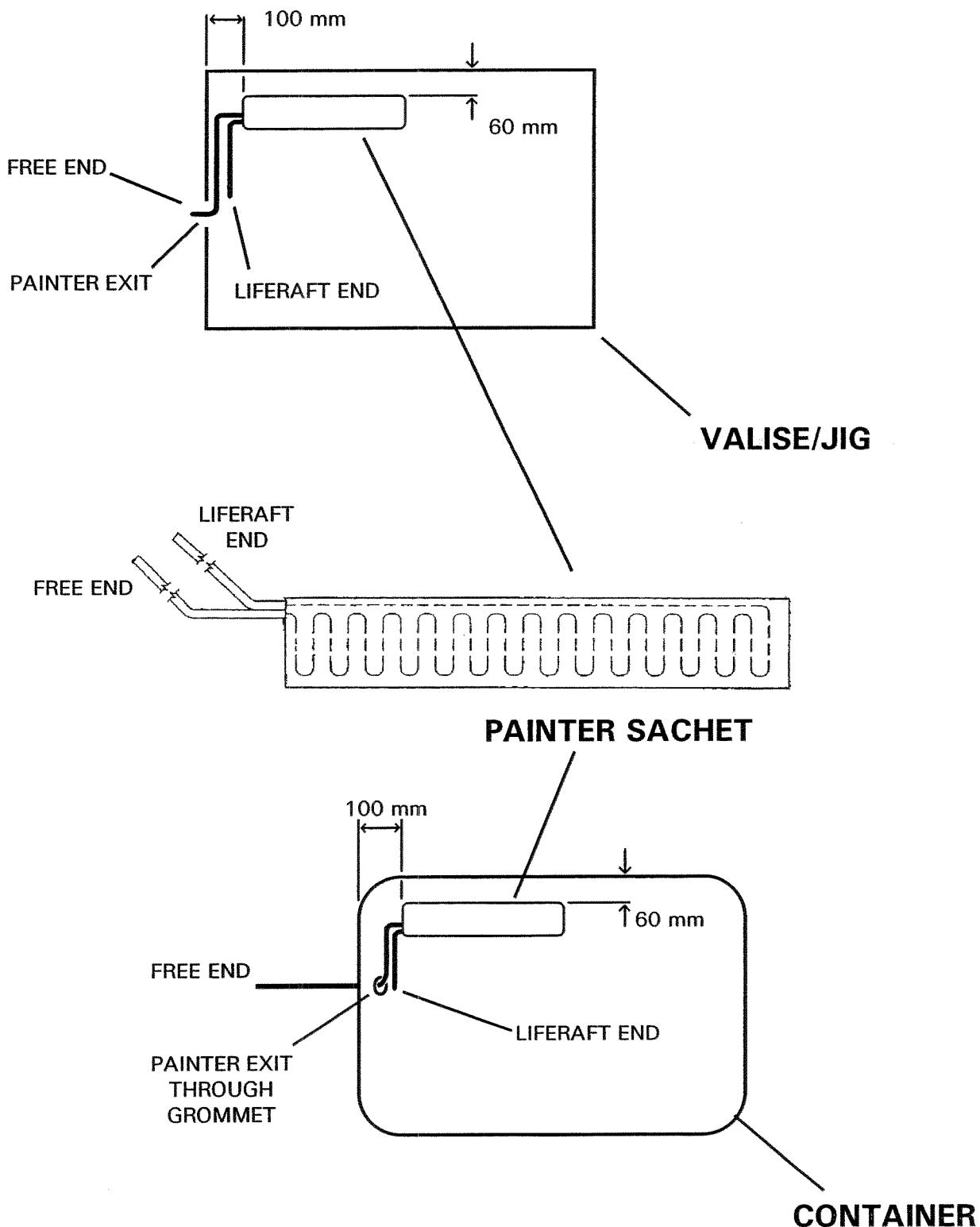


Figure 811
PAINTER SACHET AND LOCATIONS IN VALISE AND CONTAINER

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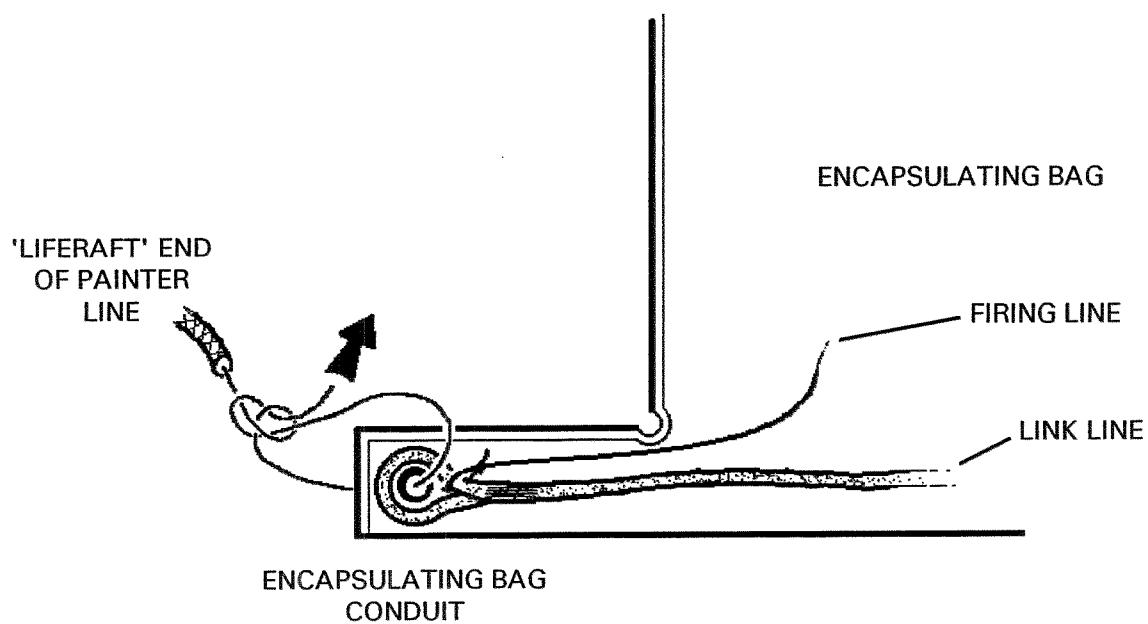
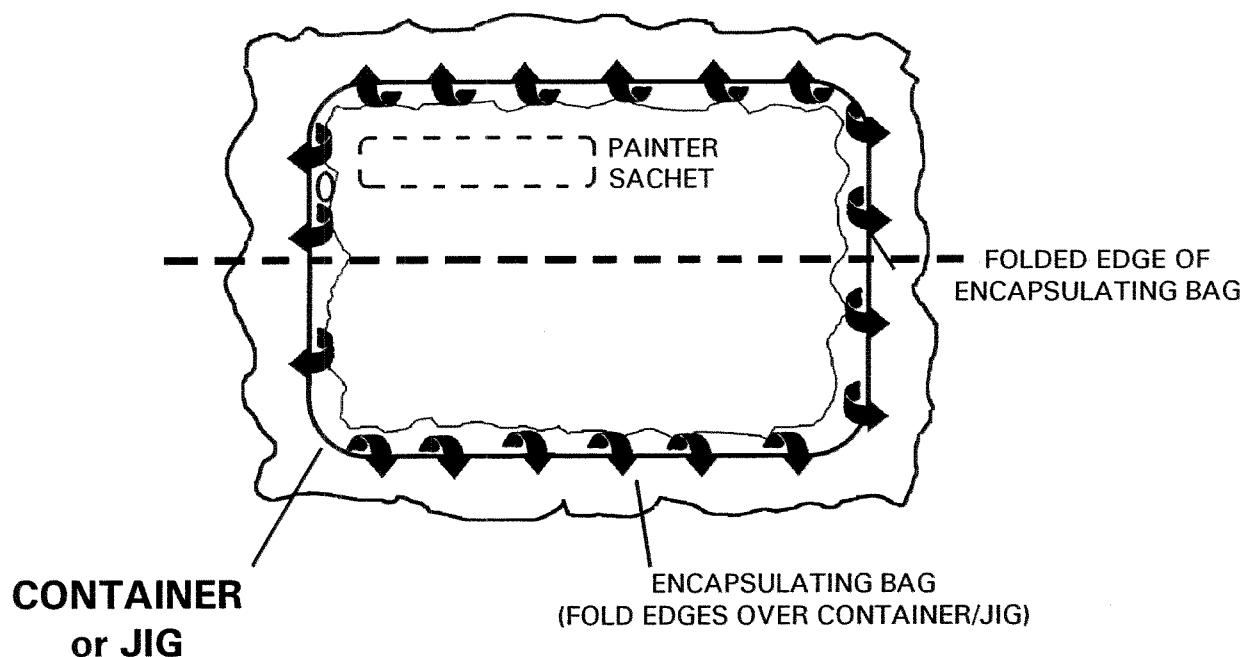


Figure 812
ENCAPSULATING BAG INSTALLATION IN VALISE AND CONTAINER

RFD SEASAVAplus R SERVICE MANUAL

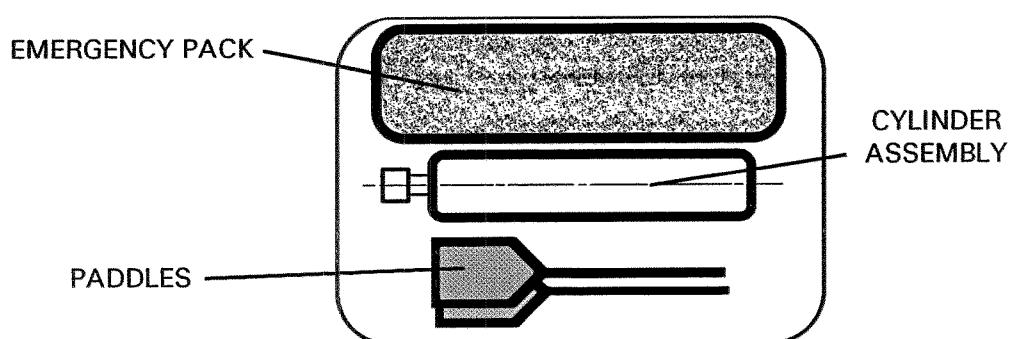
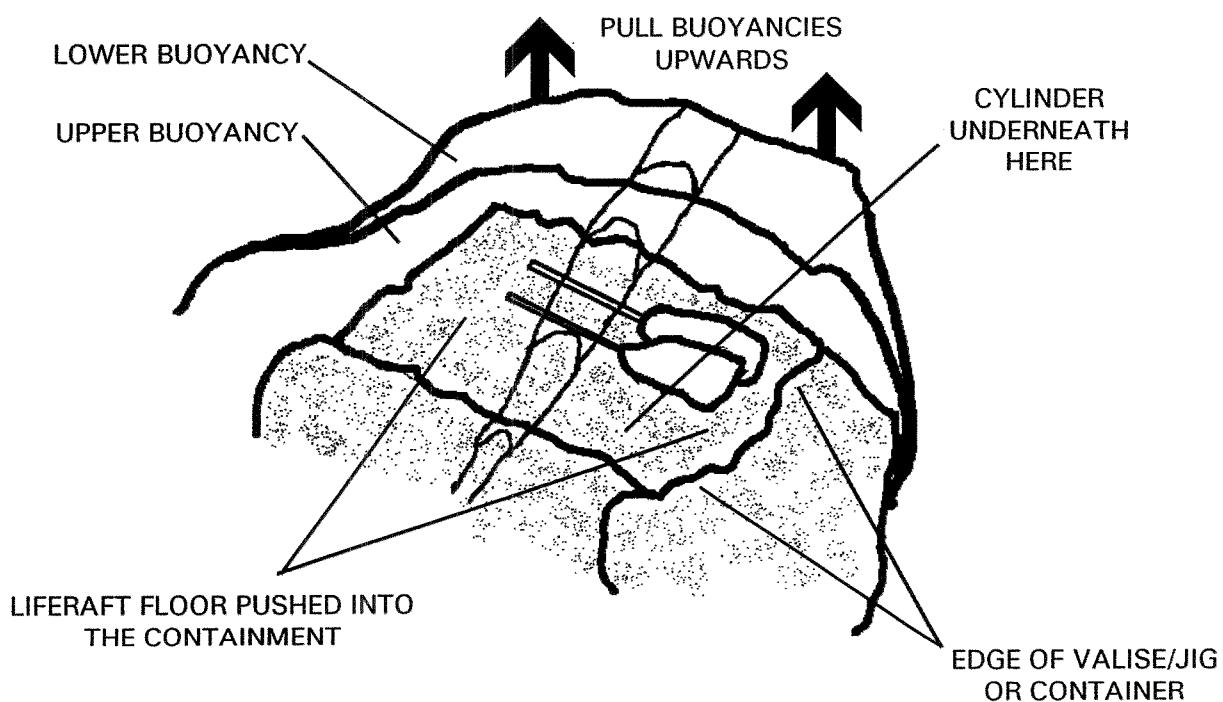


Figure 813
RELATIVE POSITIONS OF MAIN ITEMS

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E. Packing in a Valise (1997 Onward)

Note! This method does not apply to 6 person liferafts using cylinder PN 41682001 - See Section C.

1. When packing a liferaft into a valise, we advise you to use a packing jig. You can make this packing jig yourself. Its internal dimensions are slightly larger than the dimensions of the valise:
 - Seasava Plus R (4 & 6 Person): 730mm long x 430 wide x 230 high
 - Seasava Plus R (8 Person): 770mm long x 430 wide x 230 high
2. Put the valise into the packing jig, the larger part lowermost and place the packing jig between the deflated liferaft and the edge of the packing table. The painter exit must be facing towards the left-hand side.
3. Put the painter sachet on the bottom of the valise. Identify the free and the liferaft ends of the painter (Figure 811). Put the sachet in the position shown. Attach it to the side of the valise with 50mm black adhesive tape.
4. Tie the free end of the painter to the elastic loop on the inner side of the painter exit patch of the valise (Figure 811).
5. Put the encapsulating bag into the valise as shown in Figure 812.
6. Tie the liferaft end of the painter through the eyelet in the encapsulating bag conduit (Figure 812).
7. Open the encapsulating bag and push it out to fill the corners of the valise. Fold the upper edges over the sides of the packing jig.
8. Attach the inflation cylinder assembly to the underside of the floor of the liferaft using the retention straps. Secure the neck to the loop patch using two turns of 238kg nylon cord tied using a reef knot and tape the flying ends. Attach the hose; torque at 19Nm.
9. Pull the edge of the liferaft nearest the packing jig up and over the width of the valise so that the inflation cylinder rests in the valise in the centre of the packing jig (Figure 811). The operating head shall be facing the painter exit hole in the valise. The part of the liferaft draped over the front edge of the packing jig shall be folded over the paddles later. Push the liferaft into all of the corners of the valise/packing jig.

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10. Permanently attached to the inner side of the encapsulating bag, there is a painter link line and a short lightweight (238kg) firing line. Tie off the flying end of the link line to the painter patch on the liferaft. Attach the firing line to the operating head cable using a bowline at the point marked on the line with black ink - this point is approximately 25mm from the bowline knot attachment to the bag (Figure 807).

CAUTION:

TAKE CARE TO PREVENT INADVERTENT DEPLOYMENT OF THE INFLATION CYLINDER.

11. Put the paddles into the liferaft between the cylinder and the front of the packing jig (Figure 813). Orientate them paddle to paddle and back to back thus minimising pack volume. Tie them using the 23 kgf. terylene cords provided earlier (Paragraph B8).
12. Put the emergency pack behind the cylinder with the bellow to the left-hand side. Tighten the equipment bag pull cords and tie them to the 238 kgf. nylon cord provided.
13. Remove air from the liferaft by suction through the inflate/deflate valves. Await the formation of hard creases before fitting the plugs to the inflate/deflate valves.
14. Fold back the part of the liferaft draped over the front of the packing jig on top of the paddles.
15. Fold the sides of the liferaft in line with the edges of the valise. For 6-person and 8-person liferafts, make additional folds (Figure 808).
16. Roll the folded liferaft, starting from the rear, into the valise.
17. Pull the open edges of the encapsulating bag together. Heat seal the open edges of the encapsulating bag starting from the existing seal at the top conduit across the width of the bag (Figure 809).
18. Connect a vacuum hose into the middle of the raft roll via the conduit provided in the top corner of the encapsulating bag. Extract the vacuum hose when the liferaft has reduced in size to fit the valise and quickly heat seal the open edges of the conduit.
19. Close the valise around the liferaft. Provided the encapsulating bag is evacuated correctly, the closure velcro tapes shall mate evenly.
20. Confirm that the markings on the valise are correct.

F. Packing in a Container (1997 Onward)

Note! This method does not apply to 6 person liferafts using cylinder PN 41682001 - See Section D.

1. Put the lower half of the *fibreglass container* on the packing table between the table edge and the deflated liferaft. The painter exit hole must be to the left.
2. Put the *painter sachet* into the lower half of the container. Identify the free end and the liferaft ends of the painter (Figure 811). Put it in the position shown. Attach it to the container with 50mm black adhesive tape.
3. A *grommet* is already attached to the painter. Apply silicone grease to the groove in the grommet before pushing the grommet into the hole in the lower half of the container.
4. Put the *encapsulating bag* into the container as shown in Figure 812.
5. Tie the liferaft end of the painter through the eyelet in the encapsulating bag conduit (Figure 812).
6. Open the encapsulating bag. Fold its edges over the sides of the container.
7. Attach the inflation cylinder assembly to the underside of the floor of the liferaft using the retention straps, observing the correct orientation (operating head to the left). Secure the neck to the loop patch using two turns of 238kg nylon cord tied using a reef knot and taping the flying ends. Attach the inflation hose; torque at 19Nm.
8. Pull the edge of the liferaft nearest the packing jig up and over the width of the container so that the inflation cylinder rests in the container at the centre. The operating head shall be facing the painter exit hole. Any part of the liferaft draped over the front edge of the container shall be folded back over the paddles later.
9. Permanently attached to the inner side of the encapsulating bag, there is a painter link line and a short lightweight (238kg) firing line. Tie off the flying end of the link line to the painter patch on the liferaft. Attach the firing line to the operating head cable using a bowline at the point marked on the line with black ink - this point is approximately 25mm from the bowline knot attachment to the bag (Figure 807).

CAUTION:

TAKE CARE TO PREVENT INADVERTENT DEPLOYMENT OF THE INFLATION CYLINDER.

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10. Put the paddles into the liferaft between the cylinder and the front of the container (Figure 813). Orientate them paddle to paddle and back to back thus minimising pack volume. Tie them using the 23 kgf. terylene cords provided earlier (Paragraph B8).
11. Put the emergency pack behind the cylinder with the bellow to the left-hand side. Tighten the equipment bag pull cords and tie them to the 238 kgf. nylon cord provided.
12. Remove air from the liferaft by suction through the inflate/deflate valves. Await the formation of hard creases before fitting the plugs to the inflate/deflate valves.
13. Fold back any part of the liferaft draped over the front of the container on top of the paddles.
14. Fold the sides of the liferaft in line with the edges of the container. For 6-person and 8-person liferafts, make additional folds (Figure 808).
15. Roll the folded liferaft, starting from the rear, into the container.
16. Pull the open edges of the encapsulating bag together. Heat seal the open edges of the encapsulating bag starting from the existing seal at the top conduit across the width of the bag (Figure 809).
17. Connect a vacuum hose into the middle of the raft roll via the conduit provided in the top corner of the encapsulating bag. Extract the vacuum hose when the liferaft has reduced in size to fit the container and quickly heat seal the open edges of the conduit.
18. Put the top half of the container in place on top of the packed liferaft.
19. Put four metal tubes on the flanges of the container (Figure 810). Attach them temporarily with double sided adhesive tape. Put a strap around the container and the metal tubes. Tighten the strap and lock it by tightening the crimp. This will hold the halves of the container together while the sealing strip is attached.
20. The *sealing strip* will join the flanges of the upper and lower halves of the container. It will attach to an area 75 mm. wide on each flange of the upper and lower halves of the container.
 - Apply masking tape around the flanges of the container to mark the 75 mm. wide area (Figure 810).
 - Make this area rough by rubbing it with grade 100 abrasive paper.
 - Clean the rough area with toluene.
 - Apply *primer* and allow it to dry.
21. Cut a length of *sealing strip*.

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The length of the strip will be:

- 2.3 metres for 4-person liferafts
- 2.6 metres for 6-person liferafts
- 2.6 metres for 8-person liferafts

Buff the flat inner surface no more than one day prior to use.

22. Apply three coats of *adhesive solution* to the rough area of the flanges of the container. Apply three coats of adhesive solution to the buffed side of the sealing strip. Let the first coat become dry before you apply the second coat. Let the second coat become dry before you apply the third coat. Wait for the third coat to become tacky.
23. Cut a piece of *RFD258 strip* 180mm long (x 50mm wide). Attach it to the flanges of the container at the place where the ends of the sealing strip will meet (Figure 810).
24. Fit the sealing strip. Start at the place where the piece of RFD258 is attached to the container.
25. When the sealing strip is attached to the whole circumference of the flange, cut the finishing end of the sealing strip to join its starting end. The gap between the two ends of the sealing strip shall not be more than 4 mm.
26. Make the ends of the sealing strip rough using grade 100 abrasive paper in the area of the piece of RFD258. Clean this area with toluene and apply adhesive solution and, when this becomes tacky, fold the flying ends of the piece of RFD258 over the sealing strip joint.
27. Apply a coat of Cold Dip coating over the whole length of the sealing strip.
28. Let the adhesive solution cure for at least two hours. Then remove the strap and the metal tubes. Remove the masking tape.
29. Confirm that the markings on the container are correct.

RFD SEASAVAplus R SERVICE MANUAL

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RFD SEASAVAplus X SERVICE MANUAL

CHAPTER 9

STORAGE CONDITIONS AND INSTRUCTIONS

<u>Section</u>	<u>Page</u>
A. General	903
B. Procedure	903
C. Storage Limiting Period	904

RFD SEASAVAplus X SERVICE MANUAL

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CHAPTER 9

STORAGE CONDITIONS AND INSTRUCTIONS

A. General

Liferafts must be stored in a room that can be maintained at an even temperature of 15 to 21 degrees Celcius, is free from direct sunlight, and has a dry atmosphere free from corrosive fumes or other harmful contamination.

B. Procedure

1. Remove components that are easily detachable and fit transit and recoil caps to cylinders as necessary.
2. Evacuate the liferaft until the fabric creases are sharp and well defined .
3. Fold the liferaft to a manageable size, enclose it in stiff water-proof paper and store it above floor level, preferably on slatted shelving to permit air circulation.
4. Tie a label to the liferaft recording the following:
 - a. Liferaft Type, Mark and Serial Number.
 - b. Date of last inflation test.
 - c. Date of last service.
 - d. Date of last component overhaul.
5. Store the liferaft accessories - except filled gas cylinders - with the liferaft.
6. Fit transit and recoil caps to the cylinders and delivery hoses. Store filled cylinders in accordance with local regulations.

C. Storage Limiting Period (Recommendation)

1. Following a service, the storage limiting period for the liferaft is 12 months, provided that storage conditions complies with approved standards (Paragraph A above) and meet with the concurrence of the Approval Authority of the country concerned. At the end of that period the liferaft must be:
 - a. Unfolded and inspected before further storage.
 - b. Tested and serviced prior to being operationally packed for installation on vessel stowages.
2. Tested liferafts not operationally packed and placed in store (for more than 60 days) must be re-tested before being operationally packed and installed on a vessel.

CHAPTER 10

SPECIAL TOOLS, EQUIPMENT AND MATERIALS

<u>Section</u>	<u>Page</u>
A. Special Tools.....	1003
B. Equipment and Materials	1004

RFD SEASAVAplus X SERVICE MANUAL

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CHAPTER 10

SPECIAL TOOLS, EQUIPMENT AND MATERIALS

A. Equipment and Special Tools	Part No.
1. Vacuum Cleaner c/w Hose	—
2. Water Manometer (2540mm gauge)	11307019
Digital Pressure Gauge (Alternative)	06182009
3. Thermometer (hang on manometer)	—
4. Rubber Tubing - 3m x 9mm i/d x 12mm o/d	—
(manometer connection)	
5. Dry, Oil-free Air Supply of 5.6 to 7.0	—
kg/cm ² (80 to 100 psig) regulated to	
140 g/cm ² (2 psig) for inflation purposes.	
6. Packing Machine (painter/operating line)	15389001
7. Steel Hand Roller	05290024
8. Spatula (125mm x 25mm x 3mm)	05290055
9. Solution Brushes:	
a. 12mm wide	05290004
b. 25mm wide	05290006
c. 38mm wide	05290007
10. 'Instanair' Couplings:	
a. Coupling - Female	20603001
b. Coupling - Male	05290107
11. Adapter (inflate/deflate valve)	20933001
12. Handle - Torque Spanner (16.3Nm)	03635009
13. Spanner - Open End (3/8" BSP hose connector)	03628009
14. Knifeway Insertion Tool (Thanner)	06193009
15. Operating Head Spanner (Thanner DK88)	06263009

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16. Packing Jig made by Service Station
17. Container Closure Tubes 06631009
18. Tensioning Tool - Container Strap 04876009
19. Crimping Tool - Container Strap 04877009
20. Adapter for Vacuum Hose (See Fig.13) — made from:
No. 5 Leak stopper 05720023
21. Probe - Vacuum 03399046
22. Heat Sealer for Encapsulating Bag 06632009

B. Materials Part No.

1. Adhesive RFD 549: 5 litre Container 02868009
1 litre Container 04929009
2. Primer (Boscolite) 04694126
3. Methyl Ethyl Ketone (MEK) 04528009
4. Toluene Solvent —
5. Self-adhesive Tape Black (50mm wide) 02096012
6. Straps and Crimps: 41423001
7. Fabric - Nylon, Single-ply (canopy) 03398009
8. Fabric - Nylon, Single-ply (buoyancy chamber) 10772009
9. Cord, Nylon, 238kg 00933009
10. Cord, Terylene, 22.5kg 02236006
11. Linen Breaking Thread 02414006
12. Grade 100 Abrasive Paper —
13. White Epimide or White Polyurethane Paint 04694067
14. Cold Dip 04694083
15. Grease, Silicone 09050003

CHAPTER 11

ILLUSTRATED PARTS LIST

<u>Section</u>	<u>Page</u>
A. General.....	1103
B. Introduction.....	1103

RFD **SEASAVA**plus **X** SERVICE MANUAL

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CHAPTER 11

ILLUSTRATED PARTS LIST

A. General

The Illustrated Parts List (I.P.L.) has been prepared for the sole purpose of identifying and/or ordering replacement parts only, it should not be used for any other purpose.

B. Introduction

1. Illustrations

- a. A view of each assembly, exploded as necessary, to show the component parts thereof is provided. Each illustration is assigned a figure number. All illustrated parts are assigned item numbers which correspond to the item numbers on the parts list page(s).
- b. When it is not possible to illustrate on the basic illustration all variants of an assembly, additional illustrations will be provided. The additional illustrations will bear the same figure number as the basic illustration, but will be suffixed by a letter, taken in alpha sequence, A through Z (except I and O). When additional illustrations are used it will be indicated in 'FIG-ITEM' column of the parts list.

2. Item Numbering

- a. In each illustration the items are numbered from 1 and, as a general rule, continue in increments of 5, eg. 5, 10, 15 etc, to enable new items to be inserted into the sequence without the necessity for the complete renumbering of subsequent items.
- b. All item numbers will be basic numbers (ie. 5, 10 etc), however, should variants and/or alternatives to the basic part be required, they will be shown as alpha numbers (ie. 10A, 10B, 10C etc) using alpha sequence variants excepting I and O.

RFD SEASAVAplus X SERVICE MANUAL

3. Non-Illustrated Items

Some item numbers in the parts list are preceded by a hyphen (-), eg. - 30. This indicates that this item number will not be found on the illustration, either because it is not policy to illustrate such an item, eg. breaking thread, or, because the item is not illustrated in the form in which it is listed (ie. the particular item may be listed as an assembly, but illustrated 'exploded', in order to show the component parts that may be procurable.

4. Part Number

The part number quoted in this column (in the majority of cases), will be the 8 (eight) numeric digit RFD Part Number assigned for that particular item.

5. Nomenclature

A brief description of the item is included, this includes a descriptive noun plus any additional descriptive words which help in the identification of the item. Extra useful information, such as dimensions, materials etc. may also be included.

6. Used On Column

This alpha-numeric code indicates the applicability of sub-assemblies and parts to their next higher assembly or sub-assembly. If an item is applicable to all units the USED ON column (on the parts list page) will be left blank.

ITEM	PART No.	NOMENCLATURE	USED ON	QTY
5A	00012340	ASSEMBLY		1
5B	00012341	ASSEMBLY (variant)		1
5C	00012342	ASSEMBLY (variant)		1
5D	00012343	ASSEMBLY (variant)		1
10A	98760001	.DETAIL PART	5A	1
10B	98760002	.DETAIL PART	5AB	1
10C	98760003	.DETAIL PART	5C	1

EXAMPLE OF USED ON CODES

Table 1101

7. Quantity (QTY) Column

- a. In this column 'RF' indicates that an item is 'Reference Only' at this location. In other words, it is already listed for spares purposes in another illustration as part of another assembly or sub-assembly.
- b. 'AR' means, 'As Required'. It is usually applied to items such as cordage, where quantity requirements may vary from assembly to assembly.
- c. The number quoted in this column against each item is the quantity of that item required per assembly, per sub-assembly or per sub-sub-assembly as applicable.

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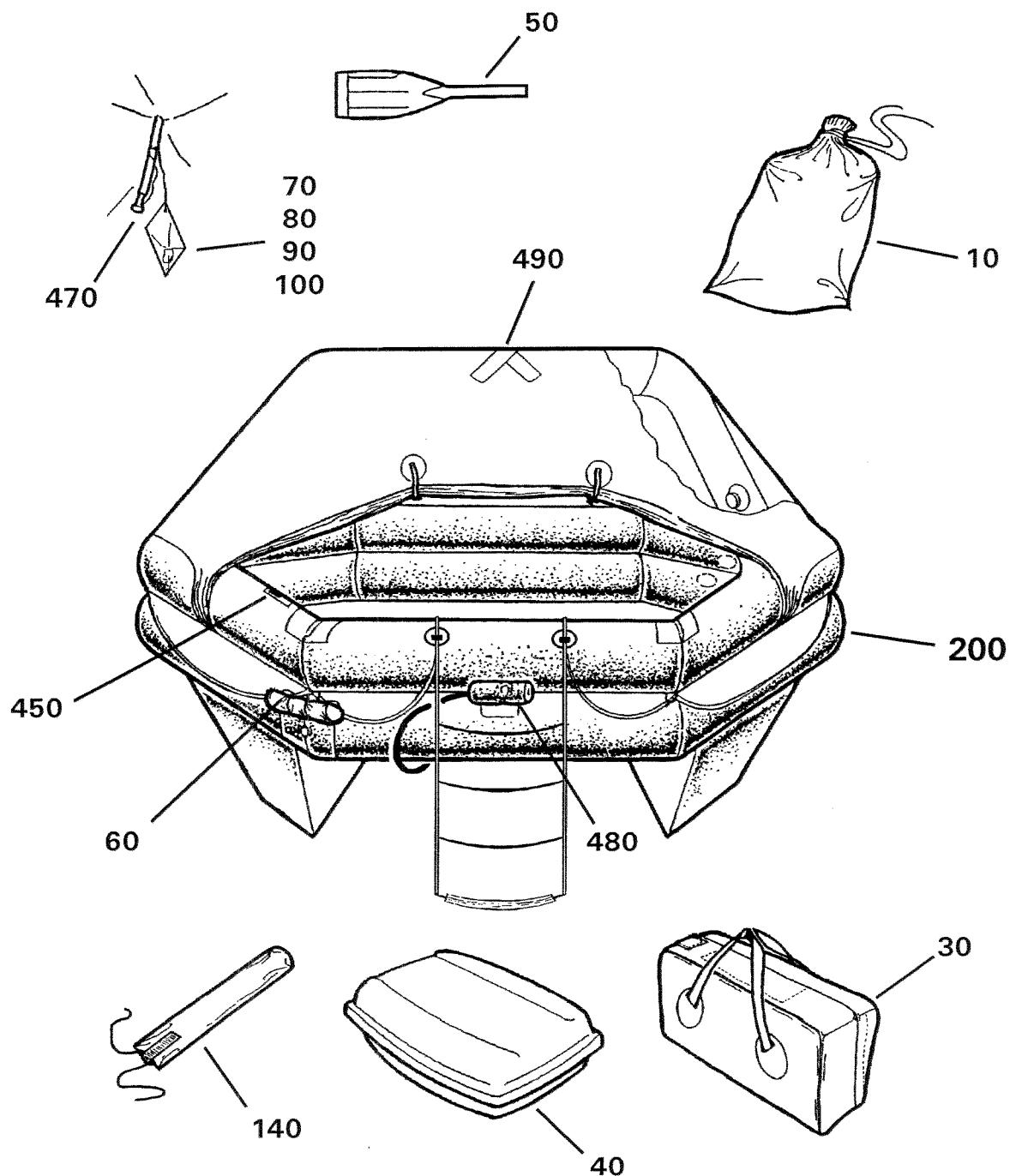
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CHAPTER 11

ILLUSTRATED PARTS LIST

- SEASAVApplus X 4 PERSON: Start at page 1108
- SEASAVApplus X 6 PERSON: Start at page 1110
- SEASAVApplus X 8 PERSON: Start at page 1112
- SEASAVApplus R 4 PERSON: Start at page 1122
- SEASAVApplus R 6 PERSON: Start at page 1124
- SEASAVApplus R 8 PERSON: Start at page 1126
- SEASAVApplus X Mk3 4 PERSON: Start at page 1128
- SEASAVApplus X Mk3 6 PERSON: Start at page 1130
- SEASAVApplus X Mk3 8 PERSON: Start at page 1132

RFD SEASAVAplus X SERVICE MANUAL



SEASAVApplus X 4 PERSONS
Figure 1

RFD SEASAVAplus X SERVICE MANUAL

FIG ITEM	PART No.	NOMENCLATURE	USED ON	QTY
		123456		
PL1				
—1A	00007183	L/R - 4 PERSON, XMY, VALISE		RF
—1B	00007184	L/R - 4 PERSON, XMY, CONTAINER		RF
—1C	00007188	L/R - 4 PERSON, RFD, VALISE		RF
—1D	00007189	L/R - 4 PERSON, RFD, CONTAINER		RF
—10A	NDSA + X-1	.EQUIPMENT INSTL, INFLATION		1
—10B	NDSA + X-4	.EQUIPMENT INSTL, INFLATION (alternates - for details see Fig. 4)		1
20	00005212	.EQUIPMENT PACK, EMERGENCY (for details see Fig. 5)		1
30A	42698001	.VALISE, XMY, SIZE 1	1A	1
30B	42698005	.VALISE, RFD, SIZE 1	1C	1
40A	00018497	.CONTAINER INSTL, LIFERAFT, XMY (for details see Fig. 6)	1B	1
40B	00018500	.CONTAINER INSTL, LIFERAFT, RFD (for details see Fig. 6)	1D	1
50	05122009	.PADDLE, 510mm		2
60	15367002	.DROGUE		1
70	01174009	.TABLETS, SEASICKNESS (Contents 60)		1
80	13404001	.BAG, PLASTIC		1
90	21199001	.LABEL, SEASICKNESS		1
100	42732011	.LEAFLET, IMMEDIATE ACTION		2
—120	42875001	.LEAFLET, LAUNCHING		1
—130	01999069	.COVER, OPERATING HEAD		1
140A	20940001	.SACHET, PAINTER, 10Mtr	1AC	1
—140B	42955001	.SACHET, PAINTER, 10Mtr	1BD	1
—150	05569009	..GROMMET, CONTAINER EXIT		
—180A	42537001	.BAG, ENCAPSULATING (Obsolete - replaced by 180B)		
—180B	43395001	.BAG, ENCAPSULATING		1
200A	42651001	.LIFERAFT, SEASAVApplus X, 4 PERS.	10A	1
200B	42651002	.LIFERAFT, SEASAVApplus X, 4 PERS.	10B	1
—370	05720120	..RESCUE LINE and QUOIT		1
—380	20611001	..LABEL, CUTTING THE PAINTER		1
—390	20613001	..LABEL, RIGHT HERE		1
—380	20614001	..LABEL, DOORWAY CLOSURE		1
—390	41629001	..LABEL, BOARDING		1
—400	20431001	..VALVE, A8, INFLATE/DEFLATE		3
—410	05126009	..VALVE, A8, TRANSFER		1
—420	06398009	..VALVE, PRESSURE RELIEF		2
450	04503009	..KNIFE, FLOATING, SAFETY		1
470	05390001	..PLUG, RUBBER $\frac{5}{16}$ in.		1
480	20653011	..TUBE, VALVE PROTECTION		1
490	04760009	..TAPE, RETRO-REFLECTIVE		AR

— (Item Not Illustrated)

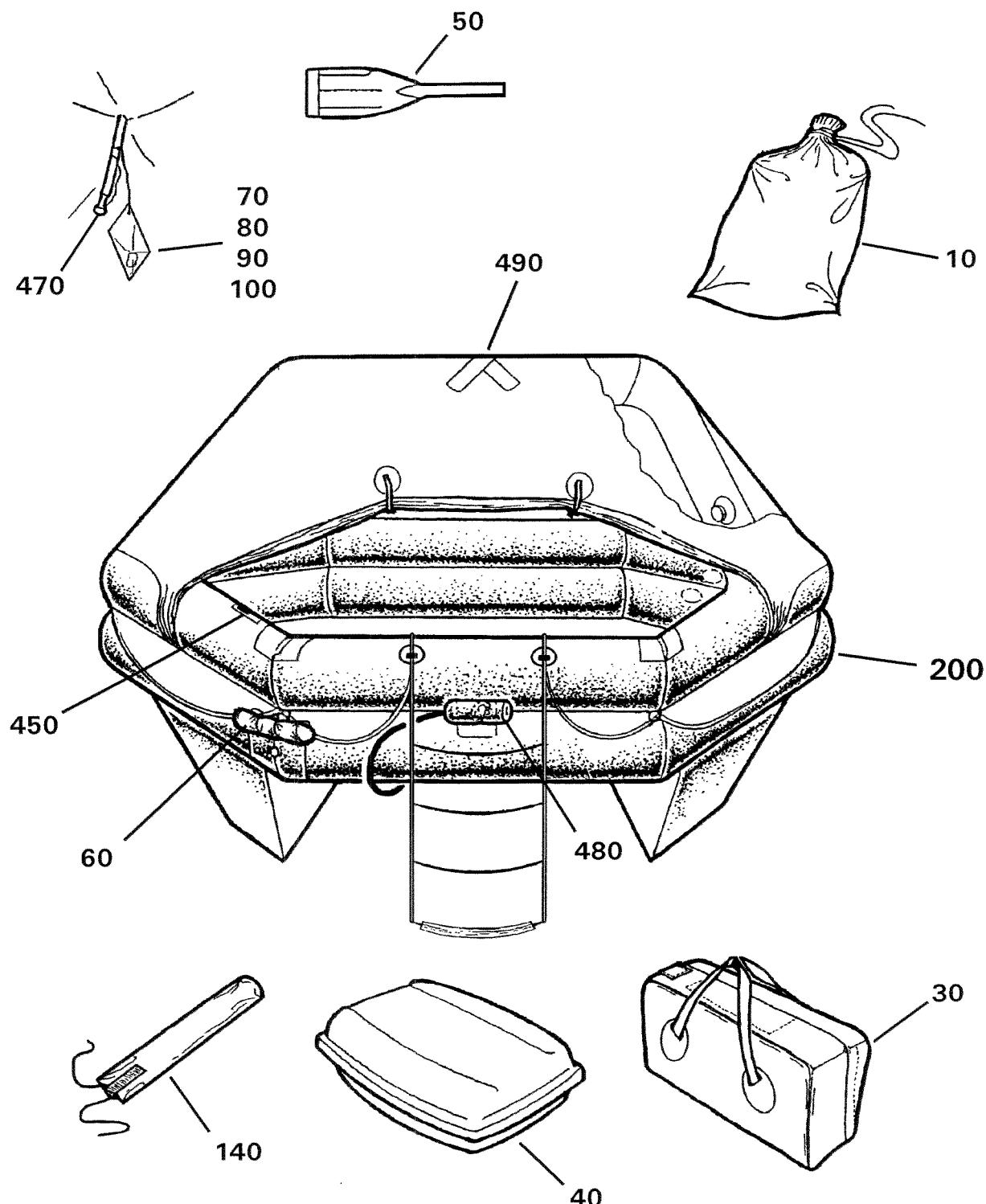
PARTS LIST

202-0

Page 1109

Apr/97

RFD SEASAVAplus X SERVICE MANUAL



SEASAVApplus X 6 PERSONS
Figure 2

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FIG ITEM	PART No.	NOMENCLATURE	USED ON	QTY
PL2		123456		
—1A	00008343	L/R - 6 PERSON, XMY, VALISE	RF	
—1B	00008344	L/R - 6 PERSON, XMY, CONTAINER	RF	
—1C	00008353	L/R - 6 PERSON, RFD, VALISE	RF	
—1D	00008354	L/R - 6 PERSON, RFD, CONTAINER	RF	
—10A	NDSA + X-2	.EQUIPMENT INSTL, INFLATION		1
—10B	NDSA + X-5	.EQUIPMENT INSTL, INFLATION (alternates - for details see Fig. 4)		1
20	00005212	.EQUIPMENT PACK, EMERGENCY (for details see Fig. 5)		1
30A	42698002	.VALISE, XMY, SIZE 2	A	1
30B	42698006	.VALISE, RFD, SIZE 2	C	1
40A	00018498	.CONTAINER INSTL, LIFERAFT, XMY (for details see Fig. 6)	B	1
40B	00018501	.CONTAINER INSTL, LIFERAFT, RFD (for details see Fig. 6)	D	1
50	05122009	.PADDLE, 510mm		2
60	15367002	.DROGUE		1
70	01174009	.TABLETS, SEASICKNESS (Contents 60)		1
80	13404001	.BAG, PLASTIC		1
90	21199001	.LABEL, SEASICKNESS		1
100	42732011	.LEAFLET, IMMEDIATE ACTION		2
—120	42875001	.LEAFLET, LAUNCHING		1
—130	01999069	.COVER, OPERATING HEAD		1
140A	20940001	.SACHET, PAINTER, 10Mtr	1AC	1
—140B	42955001	.SACHET, PAINTER, 10Mtr	1BD	1
—150	05569009	..GROMMET, CONTAINER EXIT		
—180A	42537001	.BAG, ENCAPSULATING (Obsolete - replaced by 180B)		
—180B	43395002	.BAG, ENCAPSULATING		1
200A	42652001	.LIFERAFT, SEASAVApplus X, 6 PERS.	10A	1
200B	42652002	.LIFERAFT, SEASAVApplus X, 6 PERS.	10B	1
—370	05720120	..RESCUE LINE and QUOIT		1
—380	20611001	..LABEL, CUTTING THE PAINTER		1
—390	20613001	..LABEL, RIGHT HERE		1
—380	20614001	..LABEL, DOORWAY CLOSURE		1
—390	41629001	..LABEL, BOARDING		1
—400	20431001	..VALVE, A8, INFLATE/DEFLATE		3
—410	05126009	..VALVE, A8, TRANSFER		1
—420	06398009	..VALVE, PRESSURE RELIEF		2
450	04503009	..KNIFE, FLOATING, SAFETY		1
470	05390001	..PLUG, RUBBER $\frac{5}{16}$ in.		1
480	20653011	..TUBE, VALVE PROTECTION		1
490	04760009	..TAPE, RETRO-REFLECTIVE	AR	

— (Item Not Illustrated)

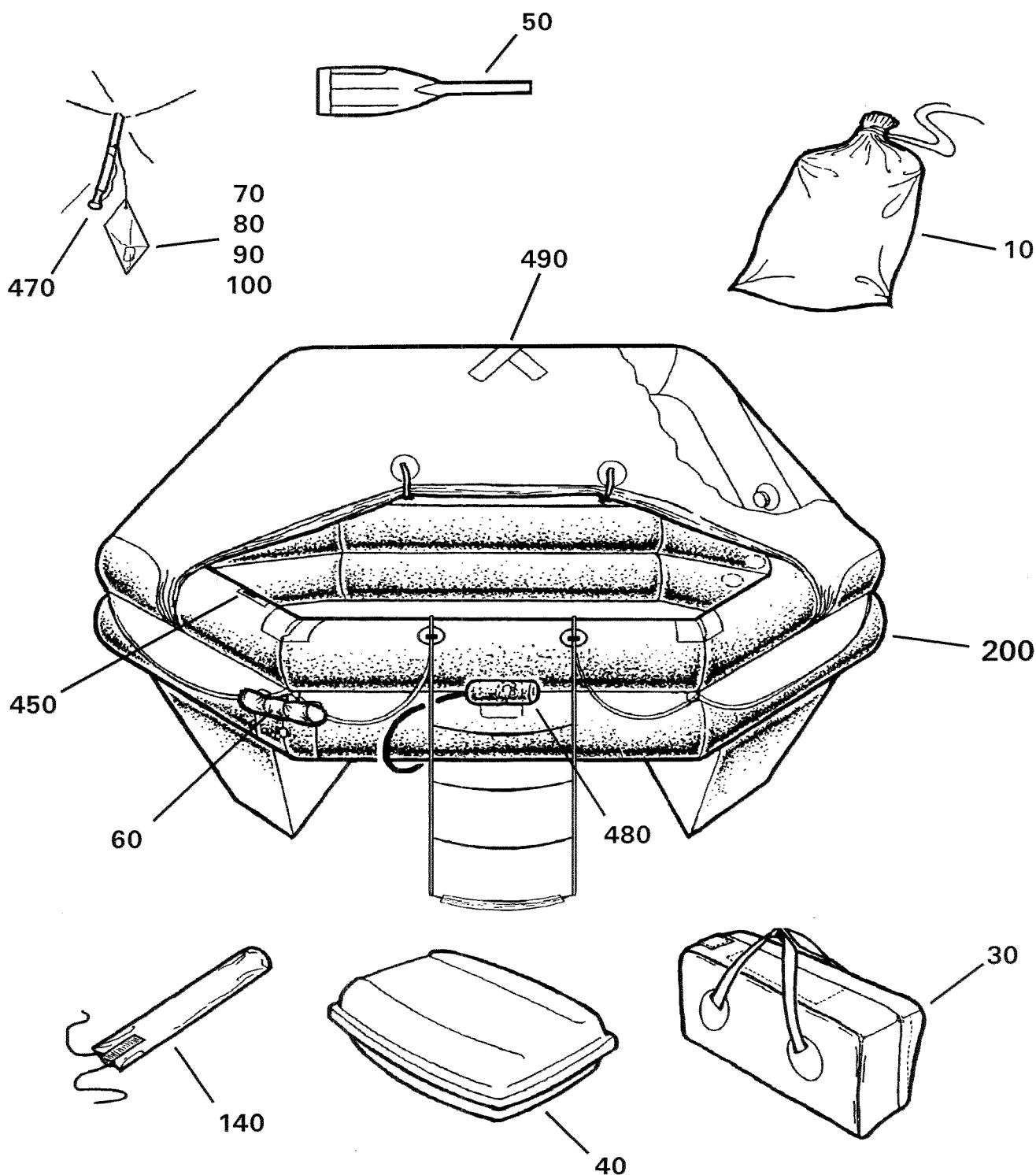
PARTS LIST

202-0

Page 1111

Apr/97

RFD SEASAVAplus X SERVICE MANUAL



SEASAVApplus X 8 PERSONS
Figure 3

RFD SEASAVAplus X SERVICE MANUAL

FIG ITEM	PART No.	NOMENCLATURE	USED ON	QTY
		123456		
PL3				
—1A	00009311	L/R - 8 PERSON, XMY, VALISE		RF
—1B	00009312	L/R - 8 PERSON, XMY, CONTAINER		RF
—1C	00009319	L/R - 8 PERSON, RFD, VALISE		RF
—1D	00009320	L/R - 8 PERSON, RFD, CONTAINER		RF
—10A	NDSA + X-3	.EQUIPMENT INSTL, INFLATION		1
—10B	NDSA + X-6	.EQUIPMENT INSTL, INFLATION (alternates - for details see Fig. 4)		1
20	00005212	.EQUIPMENT PACK, EMERGENCY (for details see Fig. 5)		1
30A	42698003	.VALISE, XMY, SIZE 3	A	1
30B	42698007	.VALISE, RFD, SIZE 3	C	1
40A	00018499	.CONTAINER INSTL, LIFERAFT, XMY (for details see Fig. 6)	B	1
40B	00018502	.CONTAINER INSTL, LIFERAFT, RFD (for details see Fig. 6)	D	1
50	05122009	.PADDLE, 510mm		2
60	15367002	.DROGUE		1
70	01174009	.TABLETS, SEASICKNESS (Contents 60)		1
80	13404001	.BAG, PLASTIC		1
90	21199001	.LABEL, SEASICKNESS		1
100	42732011	.LEAFLET, IMMEDIATE ACTION		2
—120	42875001	.LEAFLET, LAUNCHING		1
—130	01999069	.COVER, OPERATING HEAD		1
140A	20940001	.SACHET, PAINTER, 10Mtr	1AC	1
—140B	42955001	.SACHET, PAINTER, 10Mtr	1BD	1
—150	05569009	..GROMMET, CONTAINER EXIT		
—180A	42537001	.BAG, ENCAPSULATING (Obsolete - replaced by 180B)		
—180B	43395002	.BAG, ENCAPSULATING		1
200A	42653001	.LIFERAFT, SEASAVApplus X, 8 PERS.	10A	1
200B	42653002	.LIFERAFT, SEASAVApplus X, 8 PERS.	10B	1
—370	05720120	..RESCUE LINE and QUOIT		1
—380	20611001	..LABEL, CUTTING THE PAINTER		1
—390	20613001	..LABEL, RIGHT HERE		1
—380	20614001	..LABEL, DOORWAY CLOSURE		1
—390	41629001	..LABEL, BOARDING		1
—400	20431001	..VALVE, A8, INFLATE/DEFLATE		3
—410	05126009	..VALVE, A8, TRANSFER		1
—420	06398009	..VALVE, PRESSURE RELIEF		2
450	04503009	..KNIFE, FLOATING, SAFETY		1
470	05390001	..PLUG, RUBBER $\frac{5}{16}$ in.		1
480	20653011	..TUBE, VALVE PROTECTION		1
490	04760009	..TAPE, RETRO-REFLECTIVE	AR	

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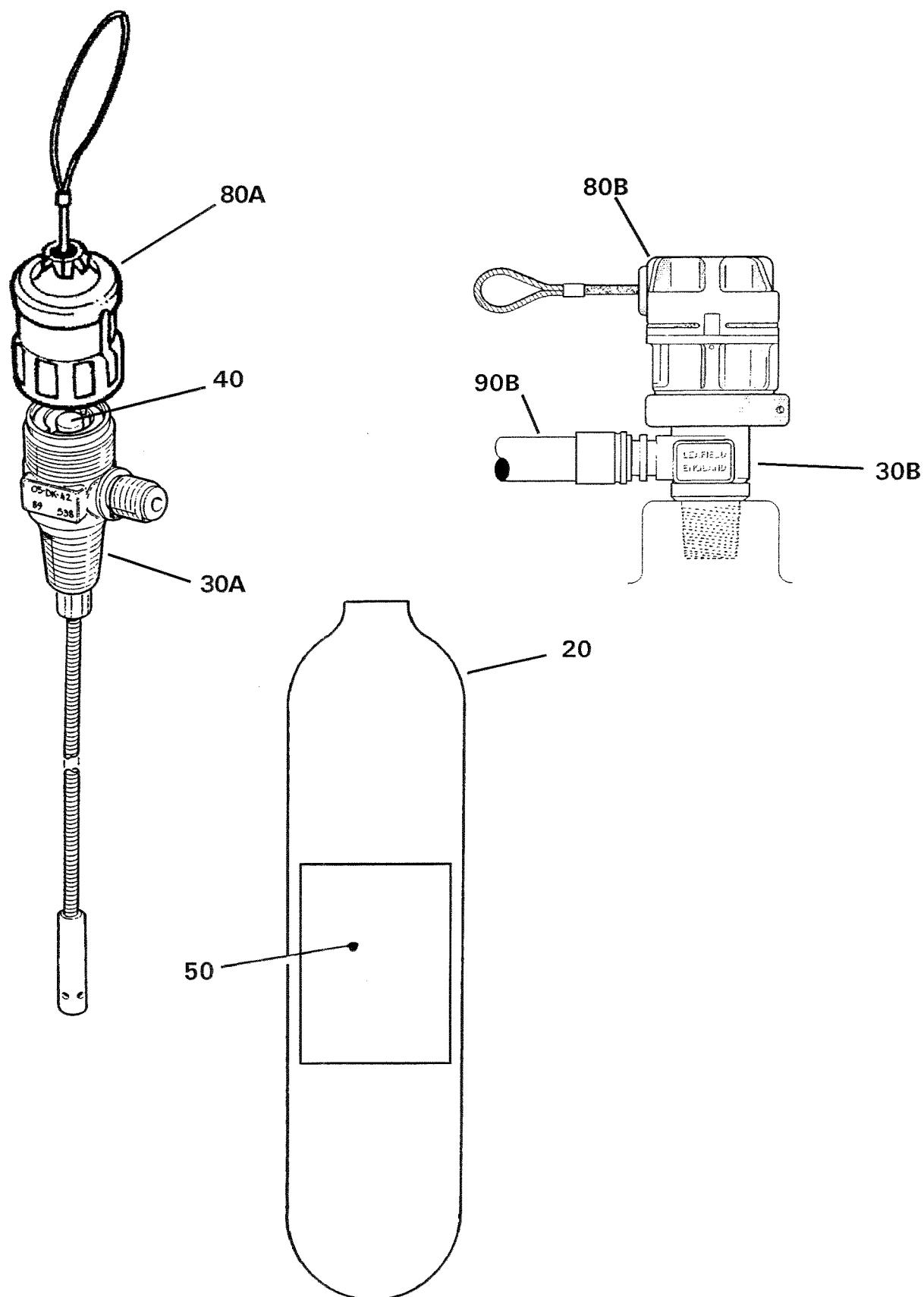
PARTS LIST

202-0

Page 1113

Apr/97

RFD SEASAVAplus X SERVICE MANUAL



EQUIPMENT INSTALLATION INFLATION
Figure 4A

RFD SEASAVAplus X SERVICE MANUAL

FIG ITEM	PART No.	NOMENCLATURE	USED ON	QTY
PL4—		123456		
—1A	NDSA + X-1	EQUIPMENT INST'N INFLATION RFD INLET VALVE (for NHA see Fig. 1)		RF
—1B	NDSA + X-2	EQUIPMENT INST'N INFLATION RFD INLET VALVE (for NHA see Fig. 1)		RF
—1C	NDSA + X-3	EQUIPMENT INST'N INFLATION RFD INLET VALVE (for NHA see Fig. 1)		RF
—1D	NDSA + X-4	EQUIPMENT INST'N INFLATION LEAFIELD VALVE (Alternate to 1A)		RF
—1E	NDSA + X-5	EQUIPMENT INST'N INFLATION LEAFIELD VALVE (Alternate to 1B)		RF
—1F	NDSA + X-6	EQUIPMENT INST'N INFLATION LEAFIELD VALVE (Alternate to 1C)		RF
—10A	41681001	.CYLINDER ASS'Y, CHARGED	1A	1
—10B	42897001	.CYLINDER ASS'Y, CHARGED	1B	1
—10C	41683001	.CYLINDER ASS'Y, CHARGED	1C	1
—10D	41681002	.CYLINDER ASS'Y, CHARGED	1D	1
—10E	42897002	.CYLINDER ASS'Y, CHARGED	1E	1
—10F	41683002	.CYLINDER ASS'Y, CHARGED	1F	1
—10G	41682001	.CYLINDER ASS'Y, CHARGED (Alternate to 10B)	1B	
20A	41711001	..CYLINDER, BARE	10AD	1
20B	42899001	..CYLINDER, BARE	10BE	1
20C	41713001	..CYLINDER, BARE	10CF	1
20D	41712001	..CYLINDER, BARE	10G	1
30A	06192001	..VALVE, CYLINDER, THANNER	10ABCG	1
30B	06529001	..VALVE, CYLINDER, LEAFIELD	10DEF	1
40	06189009	..KNIFE and KNIFEWAY	10ABCG	1
50A	41674001	..LABEL, CYLINDER		1
—60A	06198009	..CAP, SAFETY, THANNER	10ABCG	1
—60B	06558009	..CAP, SAFETY, LEAFIELD	10DEF	1
—70A	06199009	..CAP, RECOIL, THANNER	10ABC	1
—70B	06557009	..CAP, RECOIL, LEAFIELD	10DEFG	1
80A	06288009	.HEAD ASS'Y, OPERATING, DK88	10ABCG	1
80B	06530009	.HEAD ASS'Y, OPERATING, OH1	10DEF	1
—90A	05544009	.HOSE INFLATION, RFD INLET VALVE	1ABC	1
90B	06531009	.HOSE INFLATION, H-L INLET VALVE	1DEF	1

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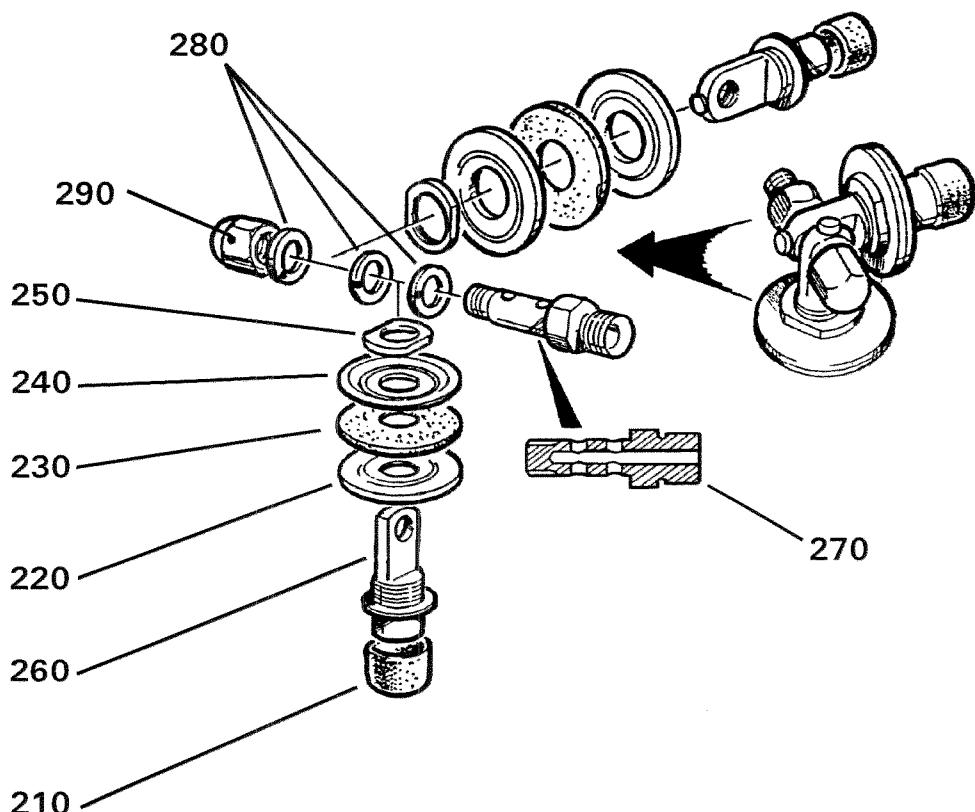
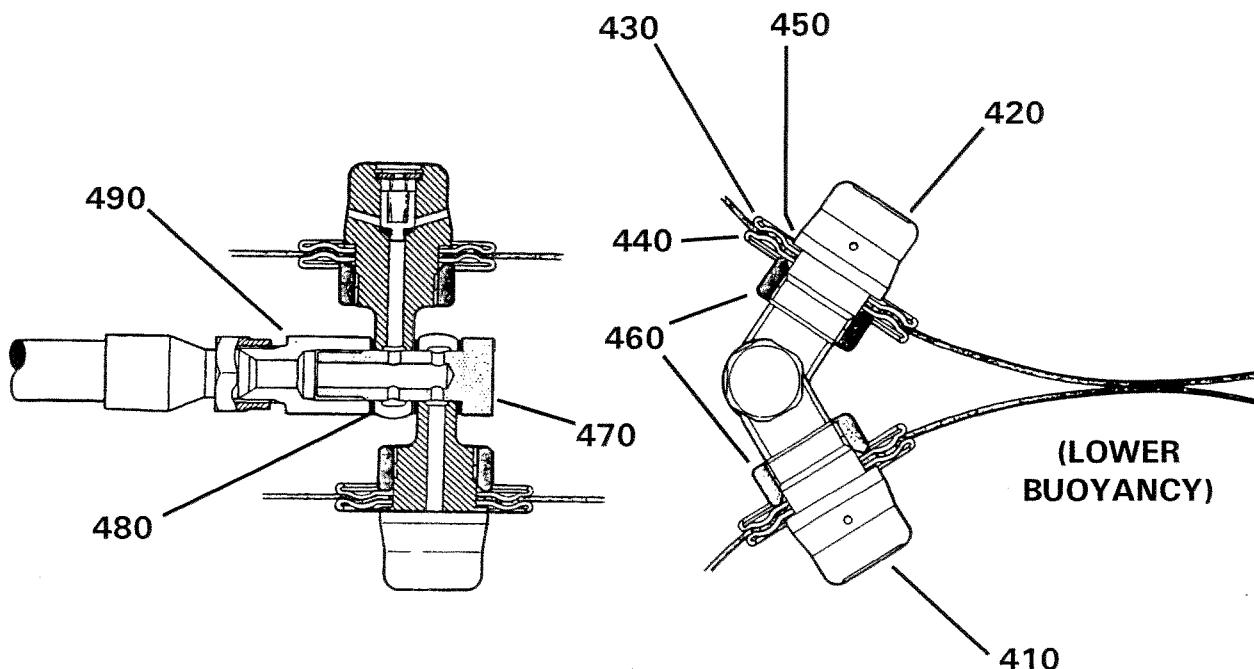
PARTS LIST

202-0

Page 1115

Apr/97

RFD SEASAVAplus X SERVICE MANUAL



EQUIPMENT INSTALLATION INFLATION
Figure 4B

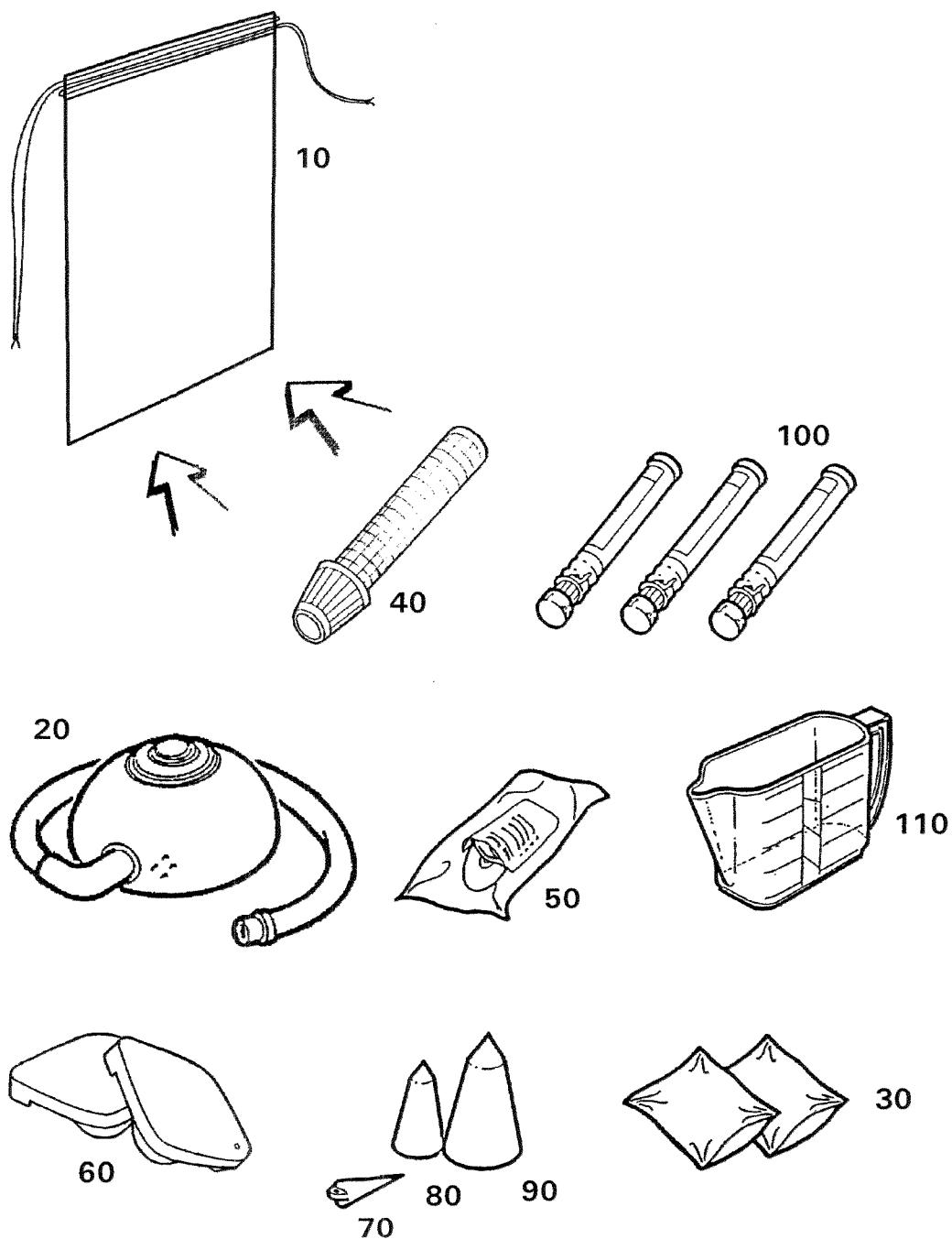
RFD SEASAVAplus X SERVICE MANUAL

FIG ITEM	PART No.	NOMENCLATURE	USED ON	QTY
PL4 (Cont.)				
—				
—200	NO PN	.VALVE ASSY., INLET, RFD		
210	05559009	..CAP, PROTECTION	1ABC	2
220	17784001	..PLATE, LOWER		1
230	04734003	..WASHER, INTERMEDIATE		1
240	17783001	..PLATE, UPPER		1
250	17780001	..NUT, LOCK		1
260	20460001	..BODY, VALVE		1
270	20554001	..BOLT, MANIFOLD		1
280	05131009	..SEAL, BONDED		3
290	17779001	..NUT		1
—400	NO PN	.VALVE ASSY., INLET, LEAFIELD	1DEF	1
410	06559009	..VALVE, CO2, 2.4mm ORIFICE		1
420	06560009	..VALVE, CO2, 2.7mm ORIFICE		1
430	06562009	..PLATE, INNER (FEMALE)		2
440	06561009	..PLATE, OUTER (MALE)		2
450	06636009	..GASKET		2
460	06563009	..NUT, CLAMP		2
470	06533001	..BOLT, BANJO		1
480	06535009	..SEAL, BONDED		3
490	06534009	..ADAPTOR		1

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PARTS LIST
202-0
Page 1117
Dec/96

RFD SEASAVAplus X SERVICE MANUAL



EMERGENCY PACK AND CONTENTS

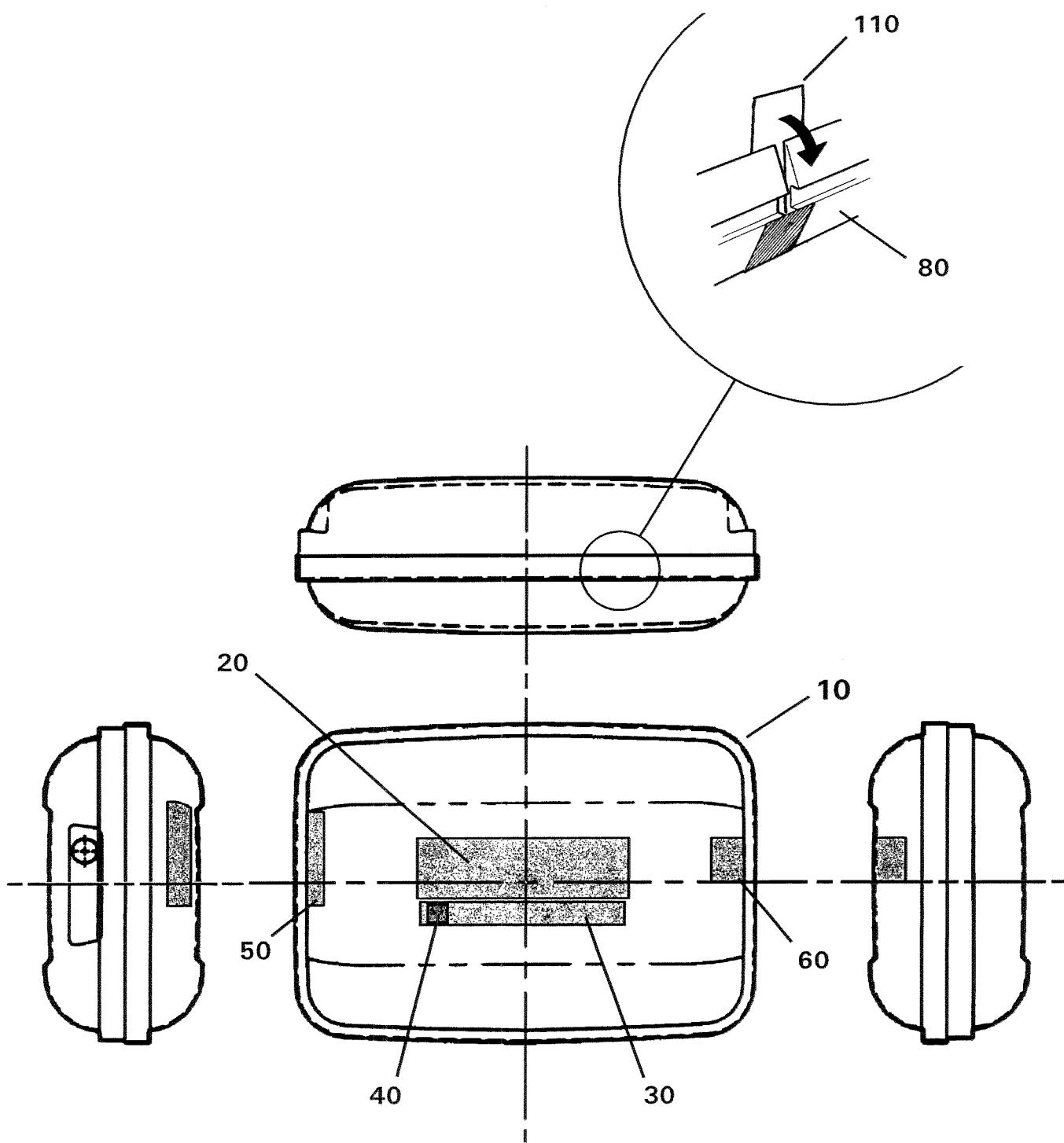
Figure 5

RFD SEASAVAplus X SERVICE MANUAL

FIG ITEM	PART No.	NOMENCLATURE 123456	USED ON	QTY
PL5				
-1	00005212	EQUIPMENT INST'N, EMERGENCY (for NHA see Fig. 1)		1
10	05826020	.BAG, EQUIPMENT		1
20	20557002	..BELLOW (Alt. PN 20557001)		1
30	05720017	..SPONGE, VISCOSE		2
40	05010130	..TORCH. c/w BULB & BATTERIES		1
50	06421009	..KIT, REPAIR (RAMPATCH)		2
60	06400009	..PLUG, RUBBER, PRV		2
70	40318001	..STOPPER, LEAK, No 1		1
80	05720019	..STOPPER, LEAK, No 3		1
90	05720023	..STOPPER, LEAK, No 5		1
100	04597009	..FLARE, HAND		3
110	05720107	..JUG/BAILER		1

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PARTS LIST
202-0
Page 1119
Dec/96



CONTAINER AND LABELS

Figure 6

PARTS LIST

202-0

Page 1120

Dec/96

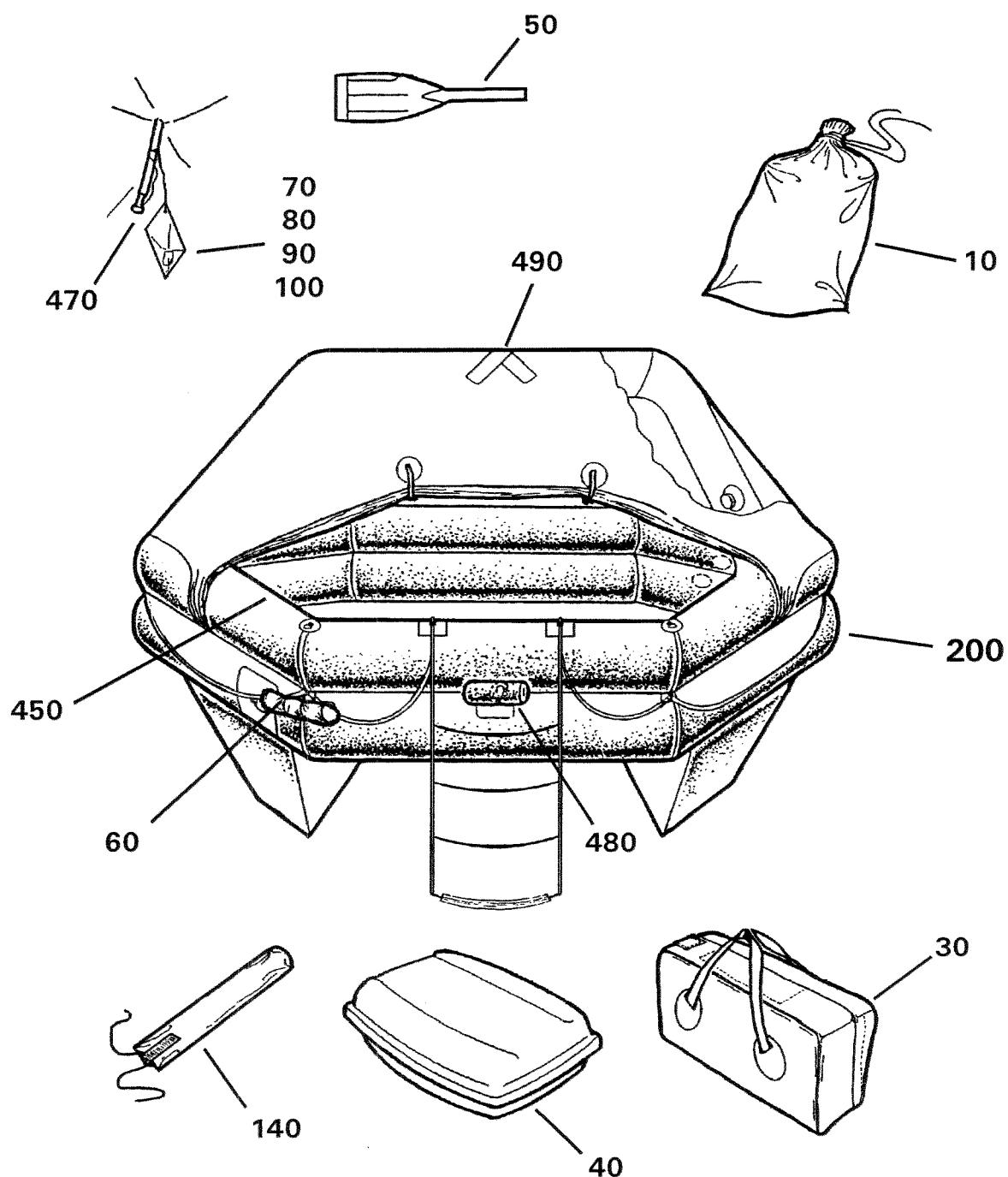
RFD SEASAVAplus X SERVICE MANUAL

FIG ITEM	PART No.	NOMENCLATURE	USED ON	QTY
		123456		
PL6				
—1A	00018497	CONTAINER INST'L, Mk17 Sz. 1, XMY		RF
—1B	00018498	CONTAINER INST'L, Mk17 Sz. 2, XMY		RF
—1C	00018499	CONTAINER INST'L, Mk17 Sz. 3, XMY		RF
—1D	00018500	CONTAINER INST'L, Mk17 Sz. 1, RFD		RF
—1E	00018500	CONTAINER INST'L, Mk17 Sz. 2, RFD		RF
—1F	00018500	CONTAINER INST'L, Mk17 Sz. 3, RFD		RF
10A	42700001	.CONTAINER, GRP, Mk17, Size 1	A,D	1
10B	42700002	.CONTAINER, GRP, Mk17, Size 2	B,E	1
10C	42700003	.CONTAINER, GRP, Mk17, Size 3	C,F	1
20A	42716001	.LABEL, SEASAVApplus X, XMY	A,B,C	1
20B	42867001	.LABEL, SEASAVApplus X, RFD	D,E,F	1
30	20957011	.LABEL, No OF PERSONS		1
40A	20957021	.LABEL, '4'	A,D	1
40B	20957031	.LABEL, '6'	B,E	1
40C	20957041	.LABEL, '8'	C,F	1
50	42717001	.LABEL, INSTRUCTION		1
60	42718001	.LABEL, DATA		1
80	02596015	.SEAL		AR
—90	04694126	.PRIMER, BOSCOLITE		AR
—100	02868009	.ADHESIVE, POLYCHLOROPRENE		AR
110	02021001	.STRIP, 50mm, RFD 258		AR
—120	04694083	.COLD DIP		AR

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PARTS LIST
202-0
Page 1121
Dec/96

RFD SEASAVAplus R SERVICE MANUAL



SEASAVApplus R 4 PERSONS
Figure 7

RFD SEASAVAplus R SERVICE MANUAL

FIG ITEM	PART No.	NOMENCLATURE 123456	USED ON	QTY
PL7				
—1A	00007203	L/R - 4 PERSON, SINGLE FLOOR, (IN VALISE)		RF
—1B	00007204	L/R - 4 PERSON, SINGLE FLOOR (IN CONTAINER)		RF
—1C	00007205	L/R - 4 PERSON, INSULATED FLOOR (IN VALISE)		RF
—1D	00007206	L/R - 4 PERSON, INSULATED FLOOR (IN CONTAINER)		RF
—10	NDSA + X-1	.EQUIPMENT INSTL, INFLATION		1
20	00005212	.EQUIPMENT PACK, EMERGENCY (for details see Fig. 5)		1
30	43388001	.VALISE, SIZE 1	1AC	1
40	00018517	.CONTAINER INSTL, Mk17 Size 1, (for details see Fig. 13)	1BD	1
50	05122009	.PADDLE, 510mm		2
60	15367002	.DROGUE		1
70	01174009	.TABLETS, SEASICKNESS (Contents 60)		1
80	13404001	.BAG, PLASTIC		1
90	21199001	.LABEL, SEASICKNESS		1
100	42732011	.LEAFLET, IMMEDIATE ACTION		2
—120	42875001	.LEAFLET, LAUNCHING		1
—130	01999069	.COVER, OPERATING HEAD		1
140A	20940001	.SACHET, PAINTER, 10Mtr	1AC	1
—140B	42955001	.SACHET, PAINTER, 10Mtr	1BD	1
—150	05569009	..GROMMET, CONTAINER EXIT		1
—180	43395001	.BAG, ENCAPSULATING		1
200A	43368001	.LIFERAFT, SEASAVApplus R, 4 PERS. (SINGLE FLOOR)	1AB	1
200B	43368002	.LIFERAFT, SEASAVApplus R, 4 PERS. (INSULATED FLOOR)	1CD	1
—370	05720120	..RESCUE LINE and QUOIT		1
—380	20611001	..LABEL, CUTTING THE PAINTER		1
—390	20613001	..LABEL, RIGHT HERE		1
—380	20614001	..LABEL, DOORWAY CLOSURE		1
—390	41629001	..LABEL, BOARDING		1
—400	20431001	..VALVE, A8, INFLATE/DEFLATE		3
—410	05126009	..VALVE, A8, TRANSFER		1
—420	06398009	..VALVE, PRESSURE RELIEF		2
450	04503009	..KNIFE, FLOATING, SAFETY		1
470	05390001	..PLUG, RUBBER $\frac{5}{16}$ in.		1
480	20653011	..TUBE, VALVE PROTECTION		1
490	04760009	..TAPE, RETRO-REFLECTIVE		AR

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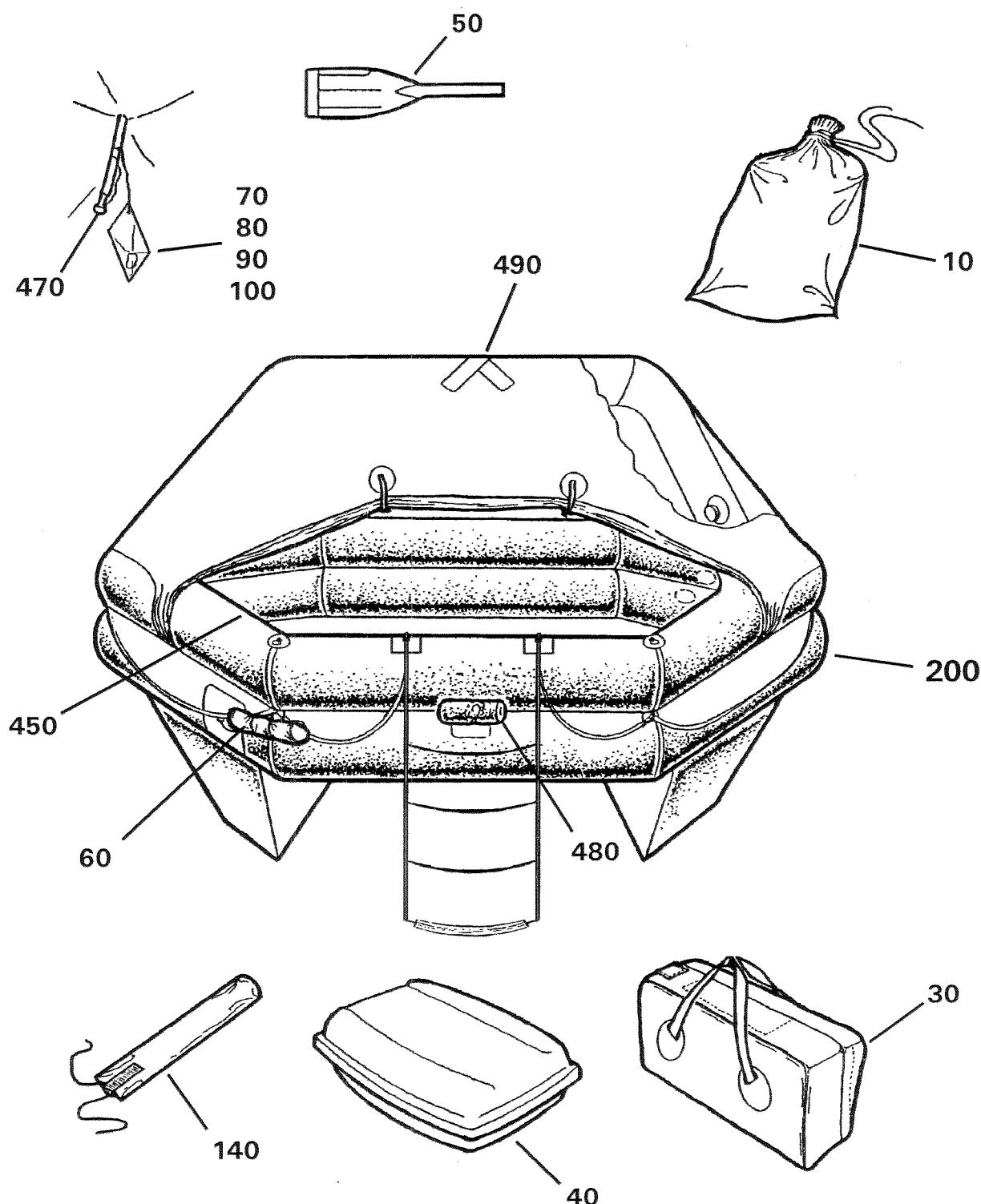
PARTS LIST

202-0

Page 1123

Apr/97

RFD SEASAVAplus R SERVICE MANUAL



SEASAVApplus R 6 PERSONS
Figure 8

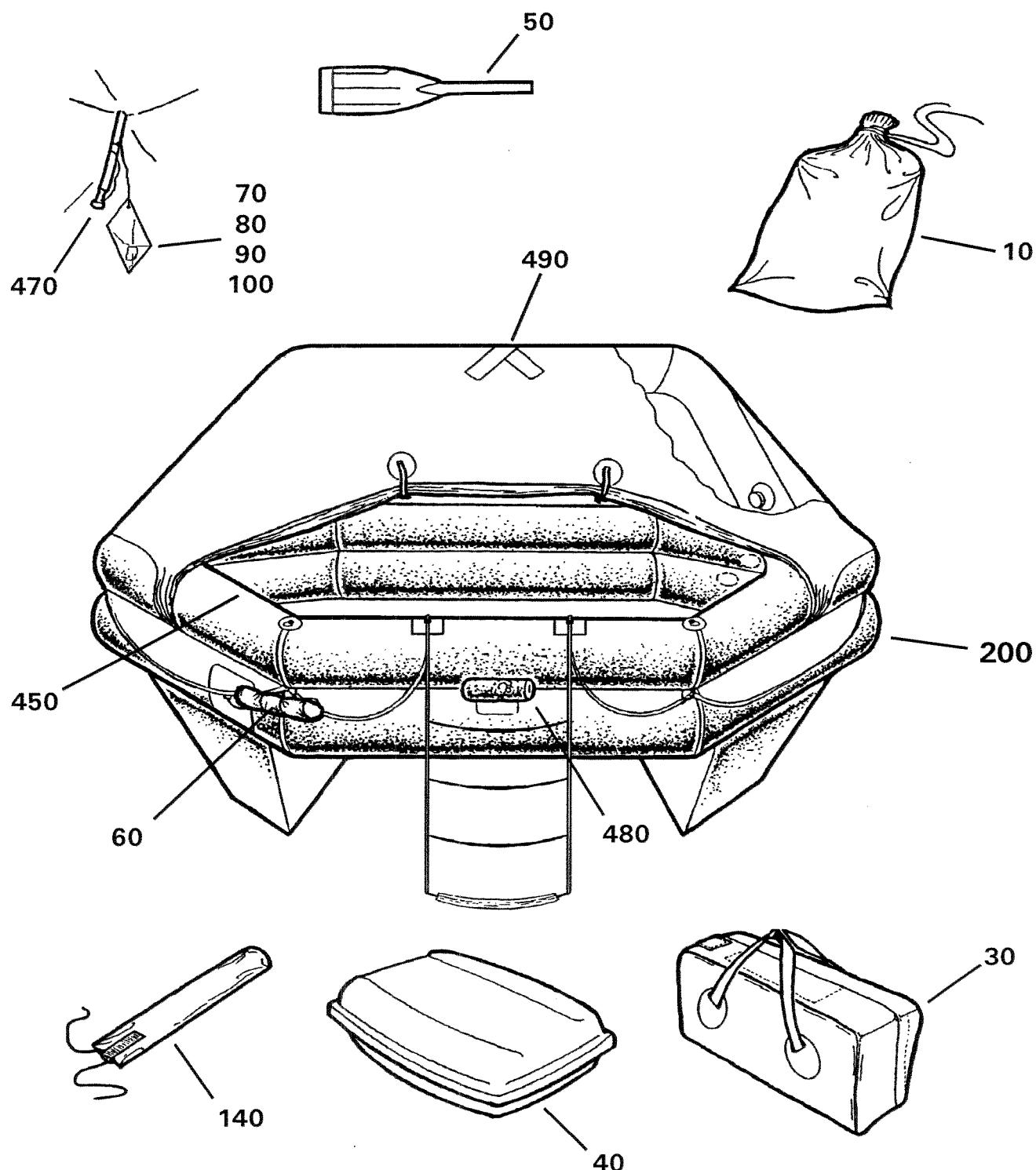
RFD SEASAVAplus R SERVICE MANUAL

FIG ITEM	PART No.	NOMENCLATURE 123456	USED ON	QTY
PL8				
—1A	00008388	L/R - 6 PERSON, SINGLE FLOOR, (IN VALISE)		RF
—1B	00008389	L/R - 6 PERSON, SINGLE FLOOR (IN CONTAINER)		RF
—1C	00008390	L/R - 6 PERSON, INSULATED FLOOR (IN VALISE)		RF
—1D	00008391	L/R - 6 PERSON, INSULATED FLOOR (IN CONTAINER)		RF
—10	NDSA + X-2	.EQUIPMENT INSTL, INFLATION		1
20	00005212	.EQUIPMENT PACK, EMERGENCY (for details see Fig. 5)		1
30	43388002	.VALISE, SIZE 2	1AC	1
40	00018518	.CONTAINER INSTL, Mk17 Size 1, (for details see Fig. 13)	1BD	1
50	05122009	.PADDLE, 510mm		2
60	15367002	.DROGUE		1
70	01174009	.TABLETS, SEASICKNESS (Contents 60)		1
80	13404001	.BAG, PLASTIC		1
90	21199001	.LABEL, SEASICKNESS		1
100	42732011	.LEAFLET, IMMEDIATE ACTION		2
—120	42875001	.LEAFLET, LAUNCHING		1
—130	01999069	.COVER, OPERATING HEAD		1
140A	20940001	.SACHET, PAINTER, 10Mtr	1AC	1
—140B	42955001	.SACHET, PAINTER, 10Mtr	1BD	1
—150	05569009	..GROMMET, CONTAINER EXIT		1
—180	43395002	.BAG, ENCAPSULATING		1
200A	43369001	.LIFERAFT, SEASAVApplus R, 6 PERS. (SINGLE FLOOR)	1AB	1
200B	43369002	.LIFERAFT, SEASAVApplus R, 6 PERS. (INSULATED FLOOR)	1CD	1
—370	05720120	..RESCUE LINE and QUOIT		1
—380	20611001	..LABEL, CUTTING THE PAINTER		1
—390	20613001	..LABEL, RIGHT HERE		1
—380	20614001	..LABEL, DOORWAY CLOSURE		1
—390	41629001	..LABEL, BOARDING		1
—400	20431001	..VALVE, A8, INFLATE/DEFLATE		3
—410	05126009	..VALVE, A8, TRANSFER		1
—420	06398009	..VALVE, PRESSURE RELIEF		2
450	04503009	..KNIFE, FLOATING, SAFETY		1
470	05390001	..PLUG, RUBBER $\frac{5}{16}$ in.		1
480	20653011	..TUBE, VALVE PROTECTION		1
490	04760009	..TAPE, RETRO-REFLECTIVE		AR

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PARTS LIST
202-0
Page 1125
Apr/97

RFD SEASAVAplus R SERVICE MANUAL



SEASAVApplus R 8 PERSONS
Figure 9

RFD SEASAVAplus R SERVICE MANUAL

FIG ITEM	PART No.	NOMENCLATURE 123456	USED ON	QTY
PL9				
—1A	00009344	L/R - 8 PERSON, SINGLE FLOOR, (IN VALISE)		RF
—1B	00009345	L/R - 8 PERSON, SINGLE FLOOR (IN CONTAINER)		RF
—1C	00009346	L/R - 8 PERSON, INSULATED FLOOR (IN VALISE)		RF
—1D	00009347	L/R - 8 PERSON, INSULATED FLOOR (IN CONTAINER)		RF
—10	NDSA + X-3	.EQUIPMENT INSTL, INFLATION		1
20	00005212	.EQUIPMENT PACK, EMERGENCY (for details see Fig. 5)		1
30	43388003	.VALISE, SIZE 3	1AC	1
40	00018519	.CONTAINER INSTL, Mk17 Size 2, (for details see Fig. 13)	1BD	1
50	05122009	.PADDLE, 510mm		2
60	15367002	.DROGUE		1
70	01174009	.TABLETS, SEASICKNESS (Contents 60)		1
80	13404001	.BAG, PLASTIC		1
90	21199001	.LABEL, SEASICKNESS		1
100	42732011	.LEAFLET, IMMEDIATE ACTION		2
—120	42875001	.LEAFLET, LAUNCHING		1
—130	01999069	.COVER, OPERATING HEAD		1
140A	20940001	.SACHET, PAINTER, 10Mtr	1AC	1
—140B	42955001	.SACHET, PAINTER, 10Mtr	1BD	1
—150	05569009	..GROMMET, CONTAINER EXIT		1
—180	43395002	.BAG, ENCAPSULATING		1
200A	43370001	.LIFERAFT, SEASAVApplus R, 8 PERS. (SINGLE FLOOR)	1AB	1
200B	43370002	.LIFERAFT, SEASAVApplus R, 8 PERS. (INSULATED FLOOR)	1CD	1
—370	05720120	..RESCUE LINE and QUOIT		1
—380	20611001	..LABEL, CUTTING THE PAINTER		1
—390	20613001	..LABEL, RIGHT HERE		1
—380	20614001	..LABEL, DOORWAY CLOSURE		1
—390	41629001	..LABEL, BOARDING		1
—400	20431001	..VALVE, A8, INFLATE/DEFLATE		3
—410	05126009	..VALVE, A8, TRANSFER		1
—420	06398009	..VALVE, PRESSURE RELIEF		2
450	04503009	..KNIFE, FLOATING, SAFETY		1
470	05390001	..PLUG, RUBBER $\frac{5}{16}$ in.		1
480	20653011	..TUBE, VALVE PROTECTION		1
490	04760009	..TAPE, RETRO-REFLECTIVE		AR

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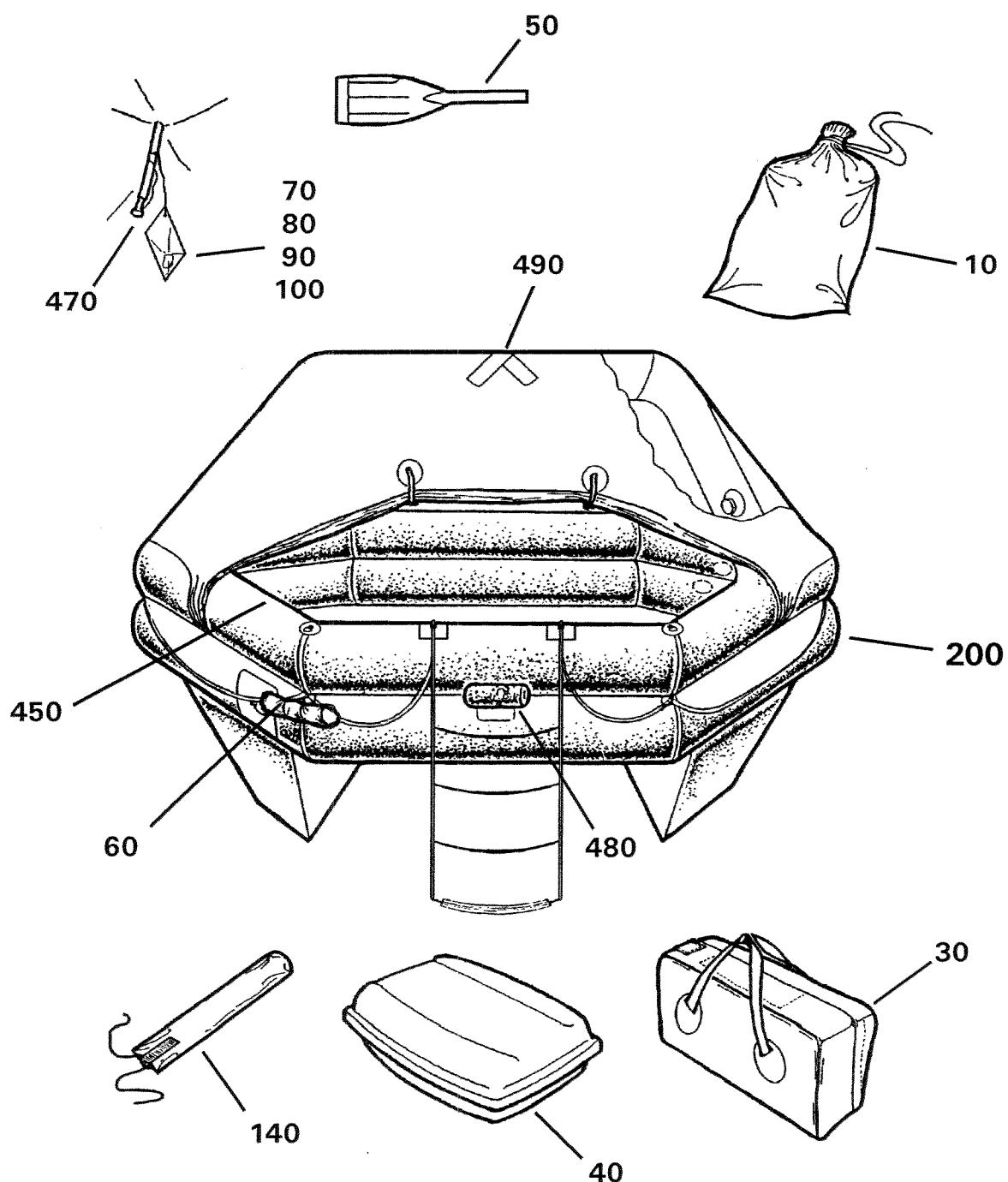
PARTS LIST

202-0

Page 1127

Apr/97

RFD SEASAVAplus R SERVICE MANUAL



SEASAVApplus X Mk3 4 PERSONS
Figure 10

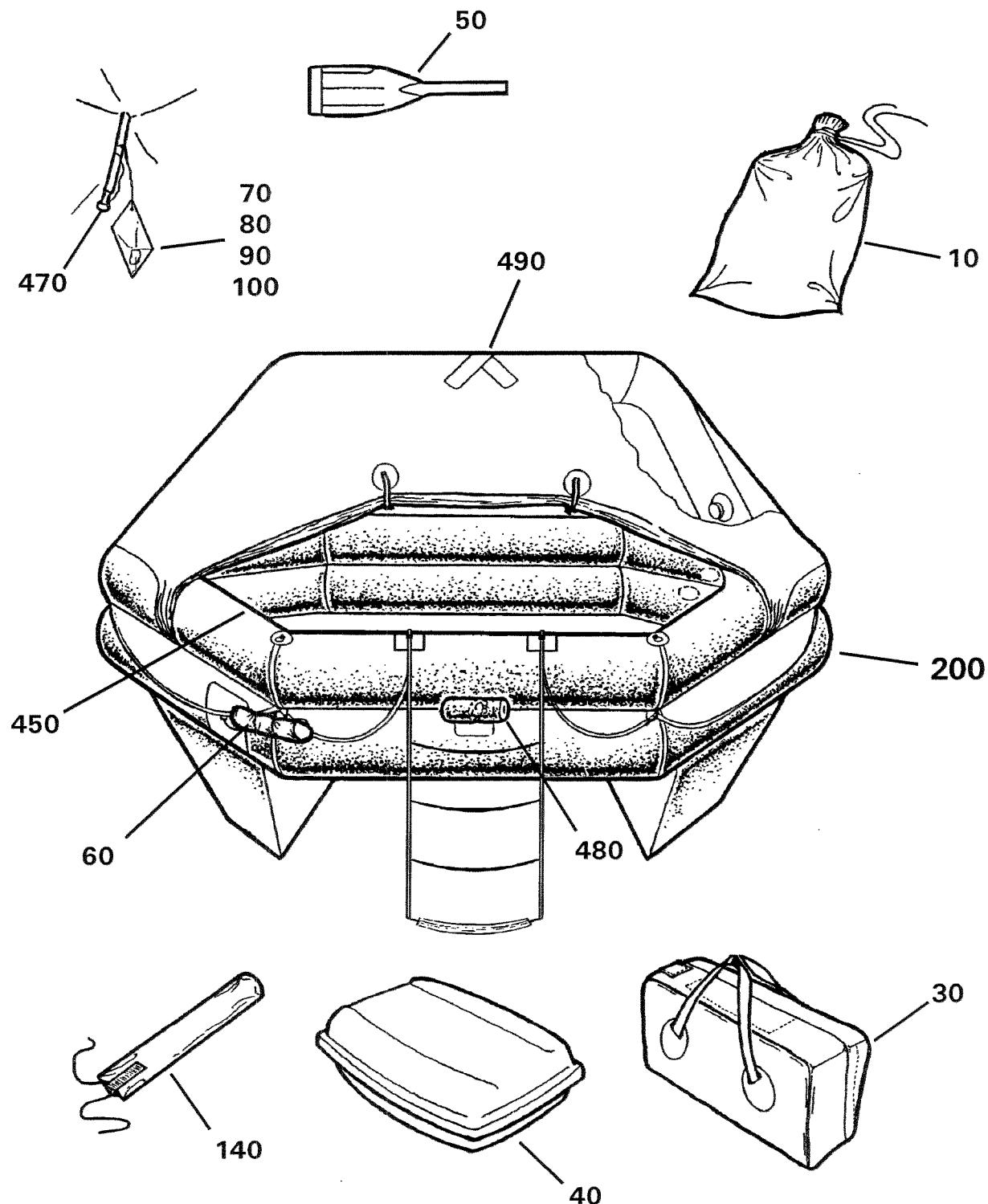
RFD SEASAVAplus R SERVICE MANUAL

FIG ITEM	PART No.	NOMENCLATURE 123456	USED ON	QTY
PL10				
—1A	00007207	L/R - 4 PERSON, INSULATED FLOOR (IN VALISE)		RF
—1B	00007208	L/R - 4 PERSON, INSULATED FLOOR (IN CONTAINER)		RF
—10 20	NDSA + X-1 00005212	.EQUIPMENT INSTL, INFLATION .EQUIPMENT PACK, EMERGENCY (for details see Fig. 5)		1 1
30	43401001	.VALISE, SIZE 1	1A	1
40	00018500	.CONTAINER INSTL, Mk17 Size 1, (for details see Fig. 6)	1B	1
50	05122009	.PADDLE, 510mm		2
60	15367002	.DROGUE		1
70	01174009	.TABLETS, SEASICKNESS (Contents 60)		1
80	13404001	.BAG, PLASTIC		1
90	21199001	.LABEL, SEASICKNESS		1
100	42732011	.LEAFLET, IMMEDIATE ACTION		2
—120	42875001	.LEAFLET, LAUNCHING		1
—130	01999069	.COVER, OPERATING HEAD		1
140A	20940001	.SACHET, PAINTER, 10Mtr	1A	1
—140B	42955001	.SACHET, PAINTER, 10Mtr	1B	1
—150	05569009	..GROMMET, CONTAINER EXIT		1
—180	43395001	.BAG, ENCAPSULATING		1
200	43382001	.LIFERAFT, SEASAVApplus X MK3, 4 PERSON (INSULATED FLOOR)		1
—370	05720120	..RESCUE LINE and QUOIT		1
—380	20611001	..LABEL, CUTTING THE PAINTER		1
—390	20613001	..LABEL, RIGHT HERE		1
—380	20614001	..LABEL, DOORWAY CLOSURE		1
—390	41629001	..LABEL, BOARDING		1
—400	20431001	..VALVE, A8, INFLATE/DEFLATE		3
—410	05126009	..VALVE, A8, TRANSFER		1
—420	06398009	..VALVE, PRESSURE RELIEF		2
450	04503009	..KNIFE, FLOATING, SAFETY		1
470	05390001	..PLUG, RUBBER $\frac{5}{16}$ in.		1
480	20653011	..TUBE, VALVE PROTECTION		1
490	04760009	..TAPE, RETRO-REFLECTIVE	AR	

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PARTS LIST
202-0
Page 1129
Apr/97

RFD SEASAVAplus R SERVICE MANUAL



SEASAVApplus X Mk3 6 PERSONS
Figure 11

RFD SEASAVAplus R SERVICE MANUAL

FIG ITEM	PART No.	NOMENCLATURE 123456	USED ON	QTY
PL11				
—1A	00008392	L/R - 6 PERSON, INSULATED FLOOR (IN VALISE)		RF
—1B	00008393	L/R - 6 PERSON, INSULATED FLOOR (IN CONTAINER)		RF
—10	NDSA + X-2	.EQUIPMENT INSTL, INFLATION		1
20	00005212	.EQUIPMENT PACK, EMERGENCY (for details see Fig. 5)		1
30	43401002	.VALISE, SIZE 2	1A	1
40	00018500	.CONTAINER INSTL, Mk17 Size 1, (for details see Fig. 6)	1B	1
50	05122009	.PADDLE, 510mm		2
60	15367002	.DROGUE		1
70	01174009	.TABLETS, SEASICKNESS (Contents 60)		1
80	13404001	.BAG, PLASTIC		1
90	21199001	.LABEL, SEASICKNESS		1
100	42732011	.LEAFLET, IMMEDIATE ACTION		2
—120	42875001	.LEAFLET, LAUNCHING		1
—130	01999069	.COVER, OPERATING HEAD		1
140A	20940001	.SACHET, PAINTER, 10Mtr	1A	1
—140B	42955001	.SACHET, PAINTER, 10Mtr	1B	1
—150	05569009	..GROMMET, CONTAINER EXIT		1
—180	43395002	.BAG, ENCAPSULATING		1
200	43383001	.LIFERAFT, SEASAVApplus X MK3, 6 PERSON (INSULATED FLOOR)		1
—370	05720120	..RESCUE LINE and QUOIT		1
—380	20611001	..LABEL, CUTTING THE PAINTER		1
—390	20613001	..LABEL, RIGHT HERE		1
—380	20614001	..LABEL, DOORWAY CLOSURE		1
—390	41629001	..LABEL, BOARDING		1
—400	20431001	..VALVE, A8, INFLATE/DEFLATE		3
—410	05126009	..VALVE, A8, TRANSFER		1
—420	06398009	..VALVE, PRESSURE RELIEF		2
450	04503009	..KNIFE, FLOATING, SAFETY		1
470	05390001	..PLUG, RUBBER $\frac{5}{16}$ in.		1
480	20653011	..TUBE, VALVE PROTECTION		1
490	04760009	..TAPE, RETRO-REFLECTIVE		AR

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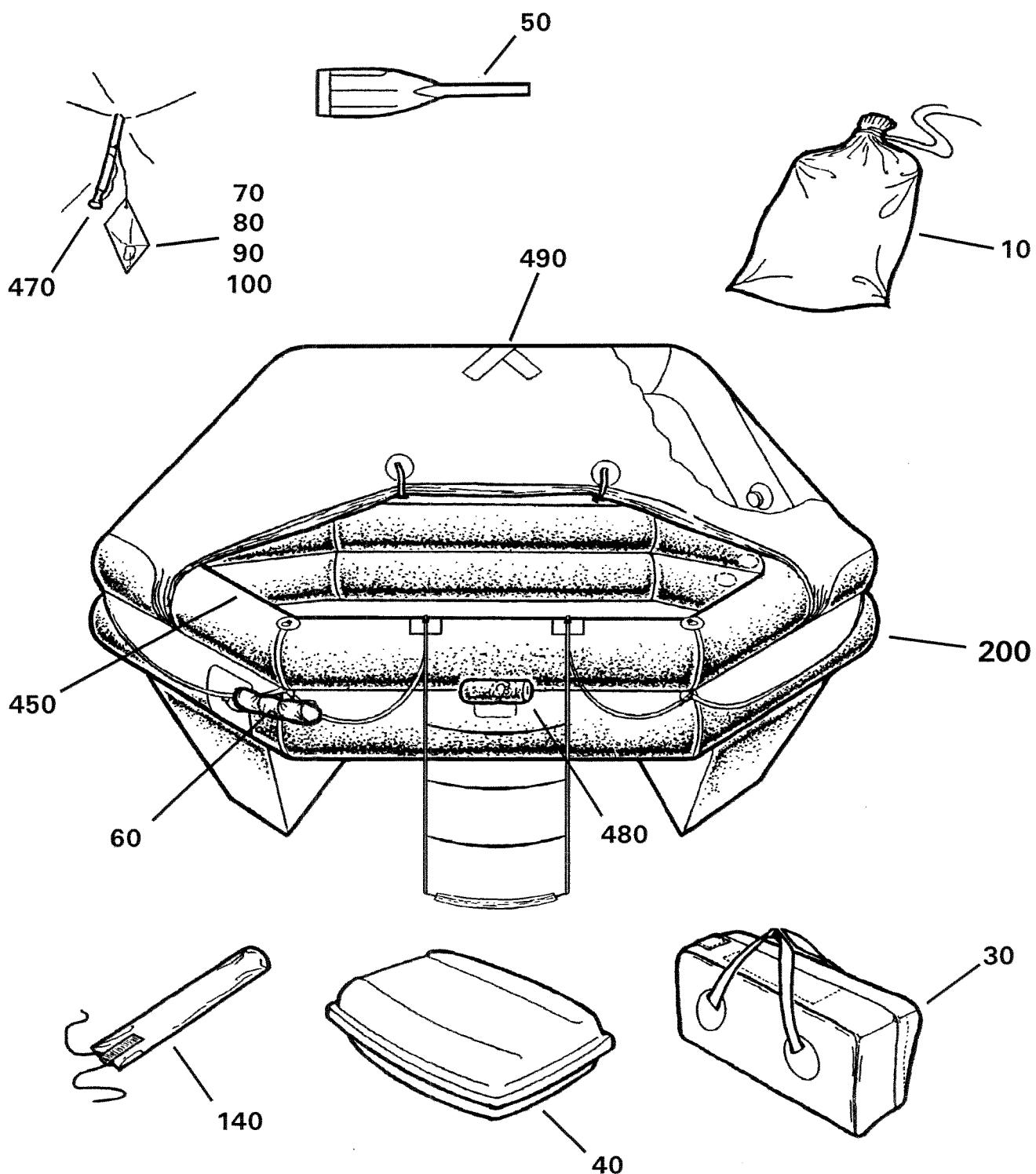
PARTS LIST

202-0

Page 1131

Apr/97

RFD SEASAVAplus R SERVICE MANUAL



SEASAVApplus X Mk3 8 PERSONS
Figure 12

RFD SEASAVAplus R SERVICE MANUAL

FIG ITEM	PART No.	NOMENCLATURE 123456	USED ON	QTY
PL12				
—1A	00009348	L/R - 8 PERSON, INSULATED FLOOR (IN VALISE)		RF
—1B	00009349	L/R - 8 PERSON, INSULATED FLOOR (IN CONTAINER)		RF
—10	NDSA + X-3	.EQUIPMENT INSTL, INFLATION		1
20	00005212	.EQUIPMENT PACK, EMERGENCY (for details see Fig. 5)		1
30	43401003	.VALISE, SIZE 3	1A	1
40	00018501	.CONTAINER INSTL, Mk17 Size 2, (for details see Fig. 6)	1B	1
50	05122009	.PADDLE, 510mm		2
60	15367002	.DROGUE		1
70	01174009	.TABLETS, SEASICKNESS (Contents 60)		1
80	13404001	.BAG, PLASTIC		1
90	21199001	.LABEL, SEASICKNESS		1
100	42732011	.LEAFLET, IMMEDIATE ACTION		2
—120	42875001	.LEAFLET, LAUNCHING		1
—130	01999069	.COVER, OPERATING HEAD		1
140A	20940001	.SACHET, PAINTER, 10Mtr	1A	1
—140B	42955001	.SACHET, PAINTER, 10Mtr	1B	1
—150	05569009	..GROMMET, CONTAINER EXIT		1
—180	43395002	.BAG, ENCAPSULATING		1
200	43384001	.LIFERAFT, SEASAVplus X Mk3, 8 PERSON (INSULATED FLOOR)		1
—370	05720120	..RESCUE LINE and QUOIT		1
—380	20611001	..LABEL, CUTTING THE PAINTER		1
—390	20613001	..LABEL, RIGHT HERE		1
—380	20614001	..LABEL, DOORWAY CLOSURE		1
—390	41629001	..LABEL, BOARDING		1
—400	20431001	..VALVE, A8, INFLATE/DEFLATE		3
—410	05126009	..VALVE, A8, TRANSFER		1
—420	06398009	..VALVE, PRESSURE RELIEF		2
450	04503009	..KNIFE, FLOATING, SAFETY		1
470	05390001	..PLUG, RUBBER $\frac{5}{16}$ in.		1
480	20653011	..TUBE, VALVE PROTECTION		1
490	04760009	..TAPE, RETRO-REFLECTIVE		AR

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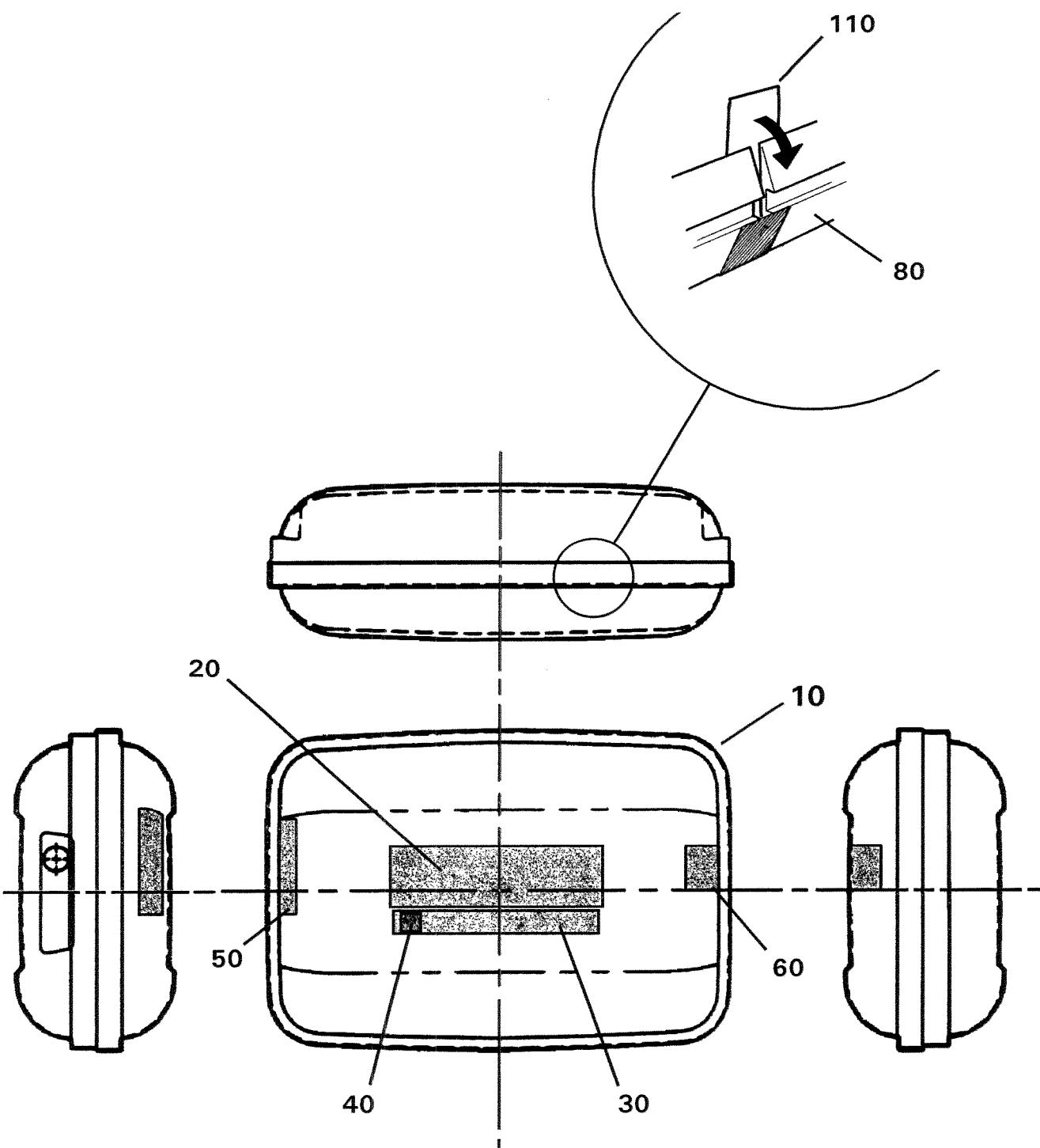
PARTS LIST

202-0

Page 1133

Apr/97

RFD SEASAVAplus R SERVICE MANUAL



CONTAINER AND LABELS
Figure 13

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FIG ITEM	PART No.	NOMENCLATURE 123456	USED ON	QTY
PL13				
—1A	00018517	CONTAINER INST'L, Mk17, 4 Person		RF
—1B	00018518	CONTAINER INST'L, Mk17, 6 Person		RF
—1C	00018519	CONTAINER INST'L, Mk17, 8 Person		RF
10A	42700001	.CONTAINER, GRP, Mk17, Size 1	1A	1
10B	42700001	.CONTAINER, GRP, Mk17, Size 1	1B	1
10C	42700002	.CONTAINER, GRP, Mk17, Size 2	1C	1
20	43380001	.LABEL, SEASAVApplus R		1
30	20957011	.LABEL, No OF PERSONS		1
40A	20957021	.LABEL, '4'	1A	1
40B	20957031	.LABEL, '6'	1B	1
40C	20957041	.LABEL, '8'	1C	1
50	42717001	.LABEL, INSTRUCTION		1
60	42718001	.LABEL, DATA		1
80	02596015	.SEAL		AR
—90	04694126	.PRIMER, BOSCOLITE		AR
—100	02868009	.ADHESIVE, POLYCHLOROPRENE		AR
110	02021001	.STRIP, 50mm, RFD 258		AR
—120	04694083	.COLD DIP		AR

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PARTS LIST

202-0

Page 1135

Apr/97

RFD SEASAVAplus R SERVICE MANUAL

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APPENDIX A1

NECESSARY ADDITIONAL ACTION

<u>Section</u>	<u>Page</u>
A. Introduction	A1-3
B. Floor Modification	A1-3

RFD SEASAVA plus X SERVICE MANUAL

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APPENDIX A1

NECESSARY ADDITIONAL ACTION

A. Introduction

A variety of causes may result in requirements for additional action when a liferaft is being serviced. Normally such circumstances shall have been broadcast by way of service bulletins. There follows details of any such requirements existing at the time of issue of this manual.

B. Floor Modification

Some early liferafts may have a tendency to leak slightly at the points where the kinked buoyancy is joined to the floor. Leakage has been found to occur where several overlaps of fabric cause a change of thickness at a hand stuck joint. In later liferafts the joint was covered using 50mm bias tape. Later again the shape of the floor panel was amended such that 'lobes' extended out at each corner so that the buoyancy kinking patches were covered completely; the use of bias tape is not necessary with this standard of floor.

Upon unpacking the liferaft the floor to buoyancy joint shall be inspected. If the floor is not of the 'lobed' variety but no bias tape is present then tape should be applied as shown at Fig. 1. The materials required are as follows:

Bias tape, 50mm	Part Number 02021001	2.1M per liferaft,
Adhesive, RFD 549	Part Number 02868009	as required.

Standard repair techniques should be employed, paying particular attention to cleaning and preparation. An excess of adhesive showing at the edges of the tape after application is preferred.

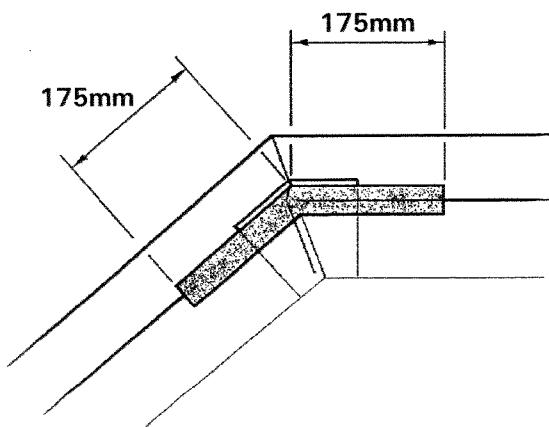


Figure 1

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