

# LifeRamp Rescue System

6601-10, 6601-15, 6601-30

6601-50, 6601-80

Manual #6623



**TULMAR**  
ENGINEERED FOR PROTECTION

**Tulmar Safety Systems**

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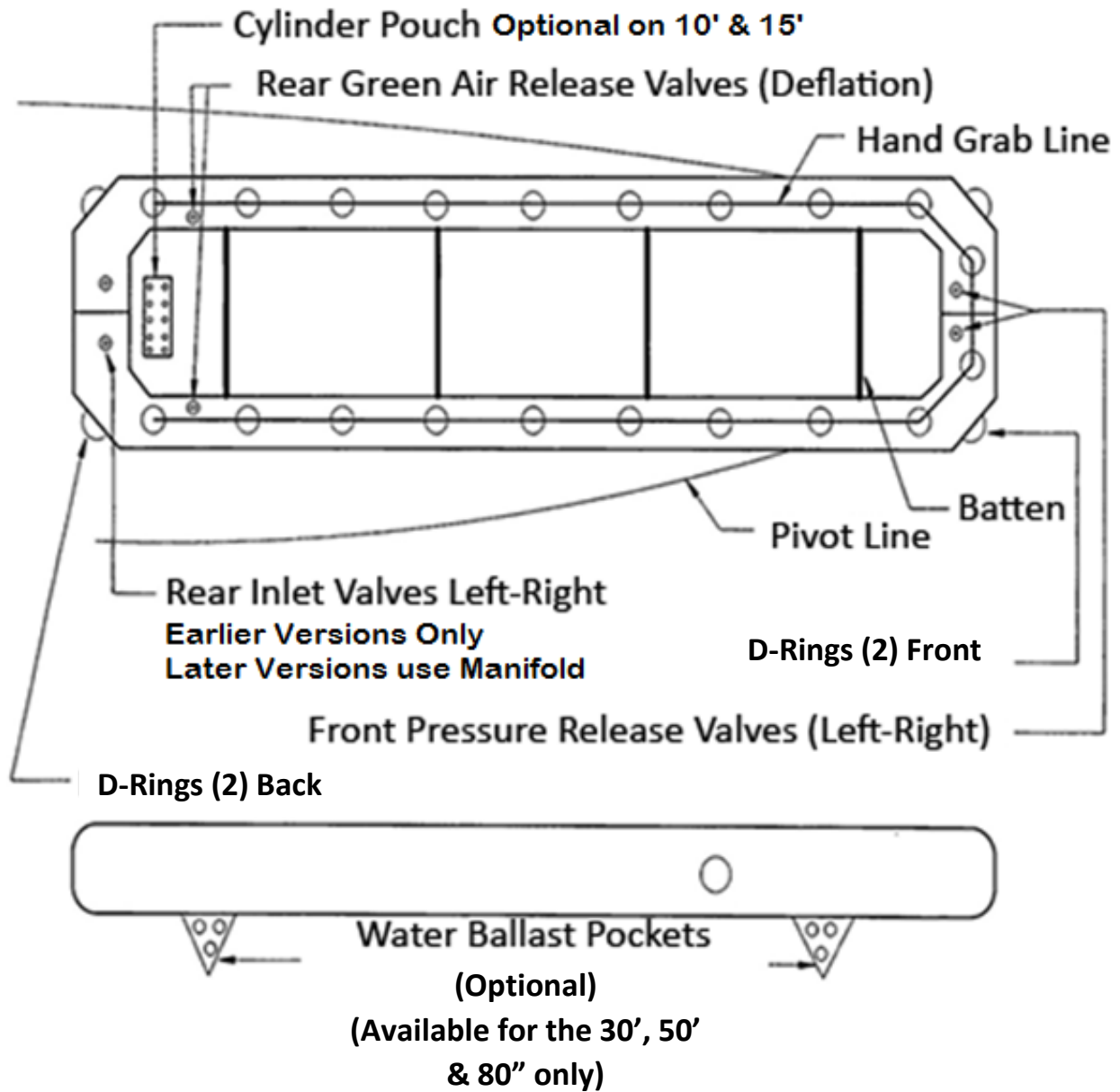
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## **1.0 OVERVIEW AND COMPONENTS**

## 1.1. LIFERAMP PARTS OVERVIEW



## 1.2. COMPONENTS

1. The LifeRamp is constructed from neoprene with chlorosulfonated polyethylene (CSM) as an extra layer on the outer and underneath portions of the ramp for added protection. (Earlier versions of the LifeRamp were made from urethane coated nylon). The neoprene fabric currently used is tested to MIL-C-17415 for resistance to accelerated weathering, ageing and low temperature.
2. Fiberglass battens are used on the floor and are removable for shipping. Quantity is based on length of the LifeRamp.
3. Two (2) Pivot Lines: one located on the left, and one located on the right.
4. One (1) Cylinder Carrier, located at the rear of the LifeRamp. Standard on the 30-, 50-, and 80-foot LifeRamp models.
  - Cylinder carrier is an option on the 10- and 15- foot LifeRamp models.
5. Two (2) pressure release valves located at the front end. Release at 2.8 psi  $\pm$  0.1 psi.
6. Two (2) topping-up valves used to deflate the LifeRamp. To deflate: remove the valves using the socket tool or insert a finger into the center of the valve & push in.
7. CGA fitting and hoses for 4.5 and 2.2 air cylinders, and quick release fitting.
8. One (1) socket tool used for removing the topping up valves. (This is kept in the pouch of the carry bag).
9. One (1) repair kit located in the carry bag.
10. One (1) user manual.
11. (Optional) Water Ballast Pockets. Only on 30-, 50- and 80-foot model.
  - **2 Water Ballasts on the 30-foot LifeRamp**
  - **3 Water Ballasts on the 50-foot LifeRamp**
  - **4 Water Ballasts on the 80-foot LifeRamp**



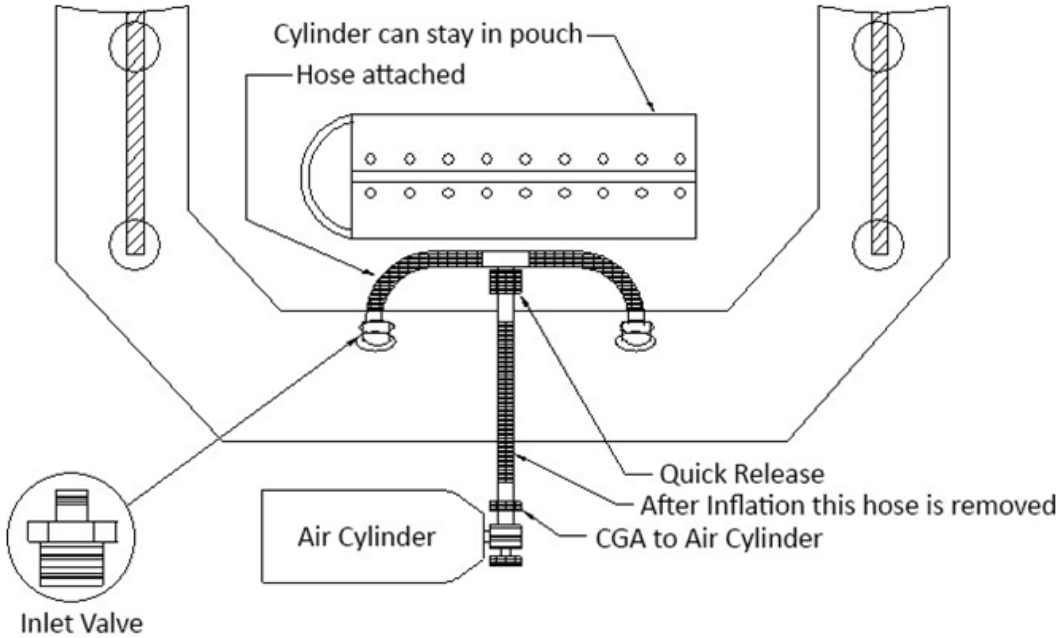
Socket Tool for Valves  
P/N 6366



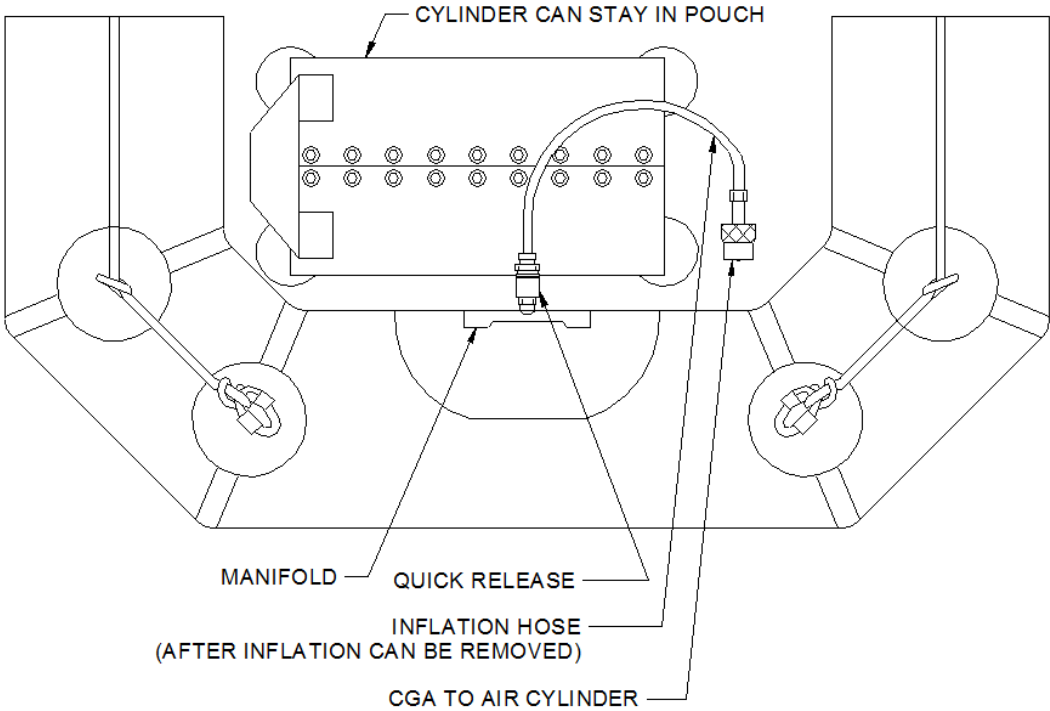
Inflation Hose Assembly  
P/N 6601-003

# 1.2.1 REAR SECTION INFLATION SYSTEM

## Earlier Versions of LifeRamp



## Later Versions of LifeRamp





## 2.0 PREPARING FOR INFLATION



## 2.1 BASIC SETUP

The LifeRamp can now be unroll for inflation.



Remove LifeRamp from its Valise



Unroll the LifeRamp

## 2.2 INSTALLING THE INFLATION SYSTEM

1. Install the inflation hose assembly to your air cylinder.
2. With earlier versions of LifeRamp (versions without the manifold):
  - a. Install the left and right hoses at the fill fitting on the ramp, the male end should face inward.
  - b. To adjust the left and right hose after on, you will need a 3/8" Allen wrench to loosen the top portion of the inlet valve, then line it up and tighten the Allen fitting. Once these are installed, they will remain on and you only need to detach the air cylinder at the quick release connector.
3. Please review the Air Cylinder Reference Chart on page 20 for recommended ramp size vs. air cylinder requirements for best performance.

**ENSURE THE PIVOT LINES ARE LAYING ON THE FLOOR PRIOR TO UNROLLING THE LIFERAMP.**

4. **Option:** The cylinder carrier is designed to accept various sized cylinders. The air cylinder can be left installed in the pouch for fast inflation. If you decide not to keep the air cylinder inside the pouch, you can leave the loose ends of the pivot lines in the pouch.



Installing the Air Cylinder



## 3.0 INFLATION

## Inflation

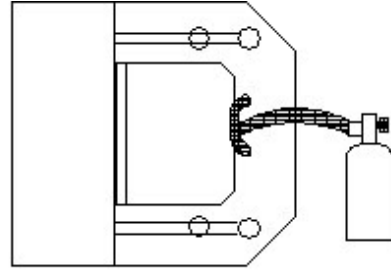
1. LifeRamp is inflated from the rear manifold, quick connect filling ONLY. The inflation hoses assembly (p/n 6601-003) can be removed after inflating. The inflation hose only needs to be connected to the quick connect fitting at inflation time.
2. To begin, release air pressure slowly from the air cylinder then increase pressure as the ramp rolls out.
3. Fill the ramp until both chambers are firm and you hear the pressure release valves vent off air at the forward end. The cylinder and hoses can be left installed should you need extra air.
4. Water ballast pockets (Optional): The pockets are located on the underside of the ramp floor. At deployment, they will fill with water automatically. Small holes are located at the bottom of the water pockets for drainage. Alternatively, the ramp can be flipped over when out of the water to drain the water more quickly.
5. Install the two pivot lines (left and right) onto the D-Rings, 3 to 15 feet from the front (according to the LifeRamp size). The pivot lines are tied using a bowline knot. Tape the loose ends of the bowline knots.
6. Pivot lines are laid out on the floor. After inflation, they can be pulled out to guide the ramp from left to right. They are attached to Hooks that snap into the forward (side) D-Rings. After inflation, lay the lines inside the floor area prior to rolling up the ramp.



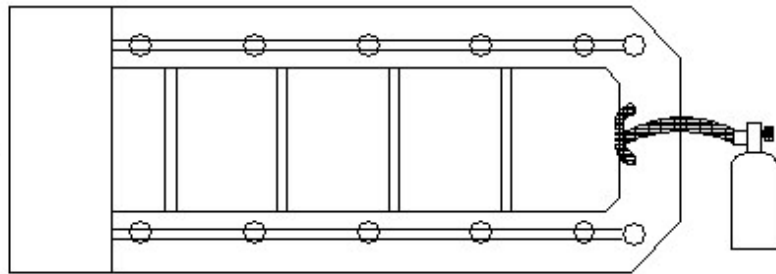
Tape used to Secure Knot  
on the Pivot Line

# ROLL-OUT INFLATION

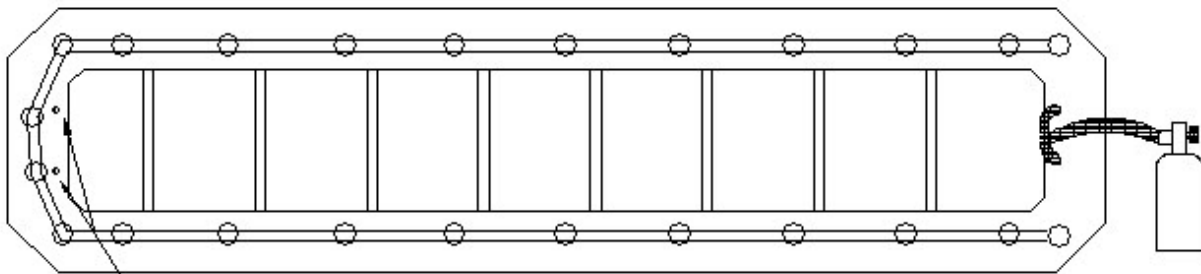
Air Pressure  
start slowly then increase



At this stage  
increase air pressure



REAR SECTION



Valves will vent off extra air, then close the cylinder valve



## 4.0 DEFLATION

## Deflation

**NOTE:** The ramp should be tested, cleaned, and dried prior to stowage.

1. To deflate the LifeRamp, air is released by means of the topping up valves located at the rear of the ramp. Insert a finger into the center of the valve and push in. Air will flow out. To release the air quicker, unscrew the valve using the supplied socket tool (p/n 6366).
2. Roll up the ramp from the front with the VALVES REMOVED, keeping a tight roll to remove all the air.
3. When rolling up the ramp, keep the hand grab (yellow cord) inside the air chamber area, so the hand grabs do not interfere with the next inflation. Also keep the pivot lines inside the LifeRamp.
4. When the ramp has been completely rolled up, re-install the topping up valves. Stow the socket tool in the carry bag pouch. The ramp can be placed in its valise, ready for inflation.

### IMPORTANT

The rear valves must be in place and tight prior to the next inflation, if not the LifeRamp will not inflate properly during next use.

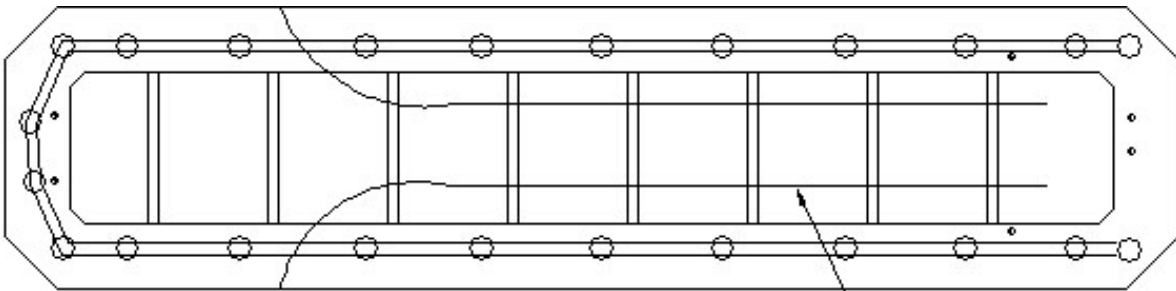


Using Socket Tool P/N 6366



Rolling up the LifeRamp

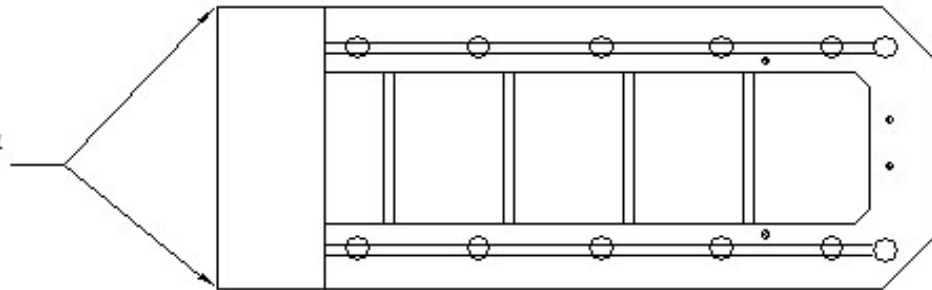
## DEFLATION AND ROLLUP



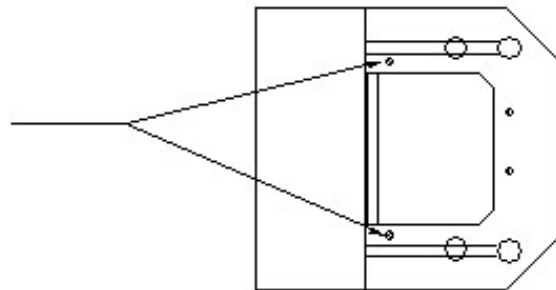
Remove green valves using socket tool which will release the air from the chambers, and then roll up the LifeRamp

Pivot Lines

Keep roll tight & uniform at ends



When roll up is complete re-insert green valves and tighten using socket tool



REAR SECTION





## **5.0 CARE AND MAINTENANCE**

## Care and Maintenance

The LifeRamp is a dependable, low-maintenance product. In order to prolong the lifespan of the LifeRamp and for proper deployment at next inflation, please observe the following instructions carefully.

### 6.1 CARE INSTRUCTIONS

1. After each use of the LifeRamp all debris should be cleaned from the inside floor and under the air chambers. If the ramp is muddy or contains a lot of sand, it should be rinsed off with a hose, including the valves and surrounding area.
2. After rinsing, dry the LifeRamp with a sponge prior to rolling up.
3. When cleaning dirt or grease spots, use a mild soap and sponge.
4. The inflation hose fittings and the quick release occasionally need to be lubricated to prevent corrosion and to provide easy coupling with the hoses.

### 6.2 DUAL-CHECK DUAL-SPRING MANIFOLD MAINTENANCE

**Note:** It is recommended that the O-Ring (p/n 6458-101) on the End Plug be replaced every 5 years.

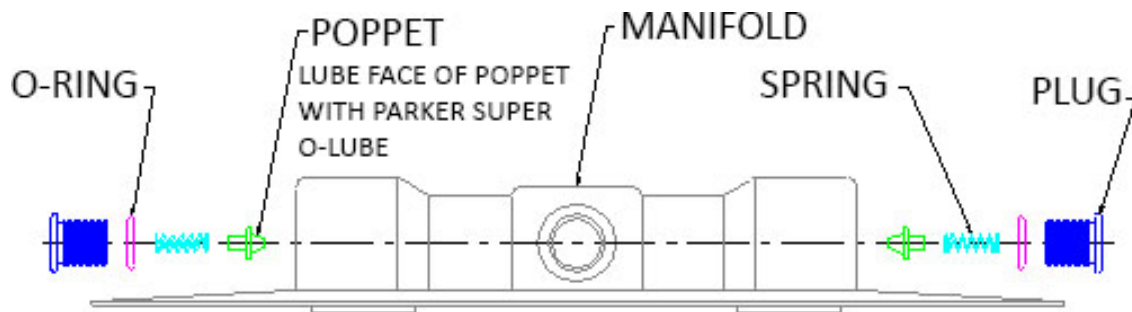
1. Remove the End Plug with a ¼" Allen wrench.
2. Remove the spring and poppet from inner cavity.
3. Clean the inside cavity of the manifold. Be careful not to scratch the seal surface.
4. Clean and inspect the poppet for damage. Do not reuse any damaged parts. Ensure that all parts are clean and dry prior to reassembly.
5. Replace the End Plug O-Ring if needed and apply a light coat of DC-55 grease to the O-Ring.
6. Apply a light coat of Parker Super-O-Lube to the seal surface of the poppet.

7. Reassemble with caution to be sure that the poppet and spring are in the correct position.
8. Torque the End Plug snug.
9. Repeat steps 1-8 for the second side of the manifold.

### 6.2.1 TOOLS & SUPPLIES REQUIRED:

- 1/4" Allen Wrench
- Parker Super-O-Lube (grease)
- Dow Corning DC-55 O-Ring Lubricant & Sealant

#### Dual-Check Dual-Spring Manifold





**INSTRUCTIONS FOR USE**

**PREPARE SURFACE**

1. Thoroughly dry off the surface to be repaired.

2. Thoroughly clean the surface with acetone and sand with 60-grit sandpaper.

3. Apply a thin layer of epoxy to the surface to be repaired. Allow to cure for 24 hours. Apply a second layer of epoxy to the surface to be repaired. Allow to cure for 24 hours.

**APPLY PATCHES**

4. Peel the patches from the backing and apply to the surface. Press the patches into the surface. Allow to cure for 24 hours.

**FINISHING**

5. Use fine sandpaper to sand the surface to a smooth finish.

**SAFETY PRECAUTIONS**

Always wear eye protection when using epoxy. Avoid contact with skin. Wash hands thoroughly with soap and water after use.

Terms Valid Through to: **SEP 2014**

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## 6.0 REPAIRS

## Repairs

Occasional repairs may be required to maintain the LifeRamp in its optimal service condition. Please follow these instructions carefully.

### 6.1 CUT OR TEAR REPAIRS

1. Cut a patch large enough to allow 2" of overlap from the edges of the hole (do not patch over a seam if at all possible).
2. Prepare both surfaces (LifeRamp and patch) by scouring with the enclosed EMERY CLOTH or wet/dry sandpaper.
3. Clean both surfaces with thinner/cleaner if possible (do not use oil-based solvents, such as paint thinner). If solvent is not available, clean the buffed (sanded) area by rubbing it vigorously with a clean, dry cloth, or a clean, dry palm (hand).
4. Apply a thin coat of adhesive to both surfaces (LifeRamp and patch). Allow 15-30 for minutes to dry (until it is no longer tacky to the touch), then apply another thin coat of adhesive. Again, allow to dry until the adhesive is no longer tacky to the touch.
5. Align the patch over the hole and press it into place — start at the center and work toward the edges.
6. Roll out the entire patch area with a flat smooth putty knife (no sharp edges). Be sure all air pockets and creases are rolled out.
7. If possible, allow the patch to cure for two hours before use (preferably overnight). If immediate deployment is necessary, inflate the LifeRamp with a slightly lower air pressure than usual.
8. For large cuts or tears, it is recommended to patch both the inside and the outside of the cut or tear.

# 7.0 AIR CYLINDER CHART

## AIR CYLINDER CHART

### RECOMMENDED AIR CYLINDER SIZES

Raft Size	Cylinder Size	No. of Fills	No. of Cylinders
15 Foot LifeRamp	2216 OR 30 minutes 4.5	1	1
		2	1
30 Foot LifeRamp	2216 4.5 4.5 1-Hour	1	1
		1	1
		2	1
50 Foot LifeRamp	2216 4.5 4.5 1-Hour	1	2
		1	1
		1	1
80 Foot LifeRamp	4500 PSI 4.5 1-Hour	1	1
		1	2
<b>SPECIAL CYLINDER 900 CUBIC IN*</b>			
<p><b>* RECOMMENDED</b></p> <p>Air cylinders are not supplied with the LifeRamp</p> <p>We recommend that a cylinder be dedicated to the LifeRamp</p>			

**4.5:** AL T-294S, 285 INCHES CUBED, 4500 PSI.

**4.5: 1-HOUR:** AL T-295S, 550 INCHES CUBED, 4500 PSI.

## 8.0 SPARE PARTS LIST

Part No	Part Description
5513-LR	Repair Kit, Temporary, LifeRamp
6314	Pump Adapter, Top-up Valve, Nylon
63408	Valve, Universal Topping
6341	Valve, Pressure Relief, Hi-flow
6366	Socket Tool
6455	Hose
6601-003	Hose Assembly; for all LifeRamp models. (Includes 6456, 6455, and 6627)
6456	Fitting, Fill, Quick-connect
6457	Fitting, Quick-connect ¼ inch
6602	Valise, 10' LifeRamp
6603	Valise, 15' LifeRamp
6604	Valise, 30' LifeRamp
6605	Valise, 50' LifeRamp
6606	Valise, 80' LifeRamp
6627	SCBA Fill Adapter, CGA 346/347
6601-004	Pivot Line Assy for 10' LifeRamp
6601-005	Pivot Line Assy for 15' LifeRamp
6601-006	Pivot Line Assy for 30' LifeRamp
6601-007	Pivot Line Assy for 50' LifeRamp
6601-008	Pivot Line Assy for 80' LifeRamp
2446	Tape, Special (secure bowline-knot end)
6458-100	End Plug for inflation manifold, aluminum
6458-101	Replacement O-Ring for inflation manifold
6458-102	Compression Spring for inflation manifold
6458-103	Poppet for inflation manifold
7113	Adhesive for repairs

## 9.0 WARRANTY

All properly registered LifeRamp Inflatables are warranted under conditions of normal handling and use, as described in the owner's manual, for a period of TWO YEARS from date of purchase against any defects in material or workmanship.

The exclusive remedy for any item found to be defective under this warranty is limited to the repair, without charge, or at the manufacturer's option, the replacement of any equipment described above which is found to be defective during the respective warranty periods, upon examination at the factory. In order to have any defect corrected, the owner must send notification of the defect to TULMAR SAFETY SYSTEMS Inc., and then TULMAR will then advise the owner where to send the product, freight pre-paid, for repair or replacement.

This warranty shall not apply to any LifeRamp product, or part thereof which has been repaired or altered, without TULMAR prior written consent, outside an authorized LifeRamp service center or altered in any way so as, in the judgement of TULMAR SAFETY SYSTEMS Inc., to affect adversely the stability or reliability of LifeRamp product, or has been subject to misuse, negligence, or accident, or has not been operated in accordance with TULMAR's printed instructions.

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## REVISION HISTORY

This revision history is to serve as a record of the changes to this manual. The record includes the revision letter, the date of the revision, the page(s) affected, and a brief description of the change.

Rev	Date	Pages Affected	Brief Description
2	September 4, 2001	All	Re-release from TUL manual
3	April 29, 2002	13-14	Dual Check Dual Spring Manifold Maintenance added
D	April 10, 2013	All	General review and edit, add revision control. Part number changes, cloth changed from Hypalon to chlorosulfonated polyethylene (CSM)
E	May 7, 2013	All	Review and edit, photos and parts list added
F	Dec 18, 2013	5, 6, 7, 8, 10, 11, 13, 18, 19	Review and update affected text, photos, diagram, and charts.
G	June 9, 2021	All	Move Revision History to the End, Re-images to new Manual Look

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