



# OWNER'S MANUAL

Expedition and Otter Series Rafts  
River and Kodiak Cataracts | MaverIK Kayaks

# TABLE OF CONTENTS

Inflation ..... 2-3

Mounting Frames..... 3

Valves ..... 3-4

BAT Thwart System..... 4

Maintenance and Cleaning..... 4-5

Material Repair ..... 5

Transport ..... 6

Storage ..... 6

Limited Warranty ..... 6

Welcome to the family of NRS boat owners! Our skilled craftsmen have taken great pride in building your boat; you can expect many years of enjoyable service from it. This manual has lots of information on how to use and maintain the boat for maximum longevity. Please contact us at 800.635.5202 or [service@nrs.com](mailto:service@nrs.com) with any questions, or if we can help you in any way. Have Fun, Boat Safe!

**INFLATION**

**Inflating Rafts:**

To properly inflate your NRS raft, valves need to be in the closed position. Push the valve stem in and turn it clockwise so that the stem pops up, sealing the valve. Choose a chamber to inflate first. Fill the chamber with air until it takes shape, filled out but not firm. Your goal is to get equal pressure on both sides of the baffles that separate the chambers.

Work your way around the boat, turning each valve stem clockwise to seal the valve before filling each chamber evenly. Then go around the boat again, using a hand pump to fill each chamber to full pressure. If you have a pressure gauge, check to make sure that the pressure in the chambers does not exceed 2.5 pounds per square inch (psi). If you do not have a gauge, check the pressure by pressing down with your thumb. The fabric should depress slightly. If there's no "give", it's probably overinflated. Please consider obtaining a pressure gauge; maintaining optimum pressure in your boat's chambers is essential to its best performance and longevity. After the main chambers are full, inflate the thwarts to 2.5 psi. If the raft's floor is a self-bailing style, inflate the floor until you hear air escaping from the pressure relief (PR) valve. The PR valve will regulate the pressure in the floor automatically.

As the outside air temperature and altitude change, the air pressure inside your raft will also change. You may need to make adjustments to the pressure in the chambers throughout the day. Transporting an inflated boat on a hot day or when gaining altitude can lead to overinflation; check the pressure regularly. Cold air and water temperatures will reduce the air pressure inside the raft. Always bring a hand pump along to top-off the chambers when they need it. Later in the day, as the air temperature outside warms up, the pressure inside the raft will increase. As this happens, you'll need to release a small amount of air from each chamber. Check the air pressure of your raft regularly throughout the day and adjust accordingly.

All NRS rafts are built to withstand substantially higher pressures than we recommend. However, overinflation puts strain on the seams, shortening the life of your boat. An overinflated raft is also in danger of explosive decompression should it strike a sharp object with force. The NRS boat warranty (see page 10) does not cover damage caused by explosive decompression.

**Inflating Cataracts:**

NRS cataraft tubes have three chambers. To properly inflate the tubes, begin with the center chamber, filling it until it takes shape. Inflate the two end chambers to a maximum of 2.5 psi each. Then top-off the center chamber to 2.5 psi.

## Inflating Inflatable Kayaks:

To properly inflate an NRS IK, inflate both main tubes until they take shape. Then top them off to 2.5 psi. Because of the small tube size, slight overinflation is acceptable to increase performance. Inflate the floor until the PR valve engages, allowing air to leak out. The PR valve will shut automatically when the floor air pressure is correct. Last, inflate the thwart to its full shape.

## MOUNTING FRAMES

### Raft Frames:

Carefully follow the frame assembly instructions. After the frame is assembled, place it on the raft so that it rests on the side tubes' top wear patch material. When the frame is positioned where you want it (generally in the center, except in the case of stern frames), use NRS Heavy Duty Straps to cinch each corner to a D-ring on the raft. Place straps on each side of the raft at opposite angles to keep the frame straight and centered.

### Catacraft Frames:

Trial and error is the key to mounting your tubes on your catacraft frame, since correct positioning is largely a matter of personal preference. Generally, for regular use, you want the weight and oarlock pivot located on the center or slightly forward of center. For more extreme boating conditions, some rowers prefer to have the weight further forward on the tube to avoid having a wave raise the bow so high that the boat flips. Day trips with an oarsperson and one passenger generally call for the rower to be substantially forward of center. Proper weight distribution and rower position will increase performance characteristics and prevent the boat from "nosing in" or riding bow-high.

Start by positioning the frame on one tube so that the weight is distributed slightly forward. Then strap the outside D-rings to the side-rails, cinching them until they are just tight. Next, strap the inside D-rings to the lower rail. Cinch these down tight. This will pull the tube toward the frame and tighten the outside straps. Align the other tube across from the first and repeat these steps.

Although it is always recommended to create a series of "triangles" with the frame straps so that there is offsetting tension holding the frame on the boat, it is particularly important to do so when attaching cat tubes to their frame. The frame supplies all the structure and rigidity to the catacraft.

## VALVES

### Inflate/Deflate Valves:

All current NRS rafts, catacrafts and Iks feature Leaffield C7 inflate/deflate valves. To open the valve, first remove the valve cap. Then press down on the spring-loaded valve stem and turn it counter-clockwise. The valve stem will now be locked down in the open position, allowing air to move freely in and out through the valve. To close the valve, push down on the valve stem and turn clockwise. The stem will pop back up, sealing the valve shut. In the closed position, you can still pump air into the chamber, but when you remove the pump, the valve will not allow air to escape. When you're done, screw the plastic valve cap back on to keep water and dirt out of the inner valve.



*Important Tip: When deflating your fully inflated boat, do not fully open only one chamber. This puts excessive strain on the internal baffles and can lead to rupture of the baffles. Either work together with someone to release the pressure in the chambers simultaneously, or release small amounts out of each chamber until high pressure is relieved and individual valves can be fully opened safely.*

### Pressure Relief Valve:

All NRS self-bailing boats feature a Leaffield A6 pressure relief valve in their inflatable floors. This valve prevents the floor chamber from overinflation that could damage the Y-beam construction. When the floor pressure exceeds 2.5 psi, the PR valve automatically opens to allow the excess pressure to escape. When the floor pressure falls to an acceptable level, the PR valve automatically shuts. Your repair kit contains a black rubber PR valve plug. Should your PR valve ever fail to shut itself when you're on the water, you can plug the valve to keep all the air from escaping. When you get off the water, be sure to examine the valve and clean or replace it as necessary.



*Important Tip: When adding air to the floor during an on the water trip, first depress the inflation valve plunger briefly to blow out any water that has accumulated in the valve opening.*

### **Cleaning Inflate/Deflate Valves:**

If the inner parts of your inflate/deflate valves become dirty, the seal may not shut completely against the valve body, allowing air to escape. You can clean the inner valve parts to restore the airtight seal. Your repair kit contains a flat aluminum valve wrench that you can use to remove the valve from the raft. Threads on both the inflation and pressure relief valves are: clockwise to tighten, counter-clockwise to loosen. The outer half of the valve unscrews from the inner half. When you remove the outer half of the valve, be sure not to lose the inner half inside the chamber. With the outer half in your hand, push down and turn the valve stem counter-clockwise. This lifts the rubber seal off the valve base. Use something like a cotton swab or water pressure to remove any dirt and grime that has built up on the rubber seal. Hand-tighten the valve back into the valve base. Inflate the chamber fully, and then use the valve wrench to completely tighten the valve.

### **Cleaning the A6 PR Valve:**

If the PR valve fails to shut itself after engaging, it's probably because the valve seal has accumulated sand or dirt. To remove the PR valve, start with the floor inflated. Loosen the valve using the flat aluminum valve wrench that came in your boat's repair kit. When you remove the valve from the valve hole, be sure not to lose the threaded white plastic valve piece that's inside the floor. Push up on the spring-loaded plunger to lift the rubber seal off the valve base. Using something like a cotton swab, clean the underside of the rubber seal. Hand-tighten the valve back into the valve base, then re-inflate the floor and use the valve wrench to tighten the valve the rest of the way.

*Note: If the PR valve still does not hold air pressure, plug the valve using the rubber stopper included in your repair kit. Call NRS Customer Service at 1-800-635-5202 if you need to order a replacement PR valve.*

### **BATTEN ATTACHMENT THWART SYSTEM**

Our innovative Batten Attachment Thwart (BAT) system allows you to easily install or remove the thwarts in your raft. Simply align the slots on the end of the thwart between the attachment slots on the raft chambers, and slide the batten through all three slots, locking the thwart in place. Thwarts will be easier to install and remove when the raft and the thwart are both deflated.

### **MAINTENANCE AND CLEANING**

Proper care and maintenance will improve your boat's appearance and longevity. Clean and inspect the boat after each use. We recommend you coat your raft with 303 Protectant (available through NRS or your local dealer; item #38751.01) every few months during the season, and before long-term storage to protect against UV damage and degradation.

You should take care to keep moisture from getting inside the air chambers. Water can enter the chambers during in-the-field repairs or if the valves are left open during wet weather. If you find that moisture and mildew have accumulated in your boat's air chambers, the chambers must be aired out. Remove the valve of the affected chamber and run the hose of an electric air pump through the valve hole. Turn the pump on and allow the air to circulate into the chamber and out the valve hole for several hours until all the moisture is gone.

### **PENNEL ORCA® MATERIAL REPAIR**

Our Pennel Orca material is "Hypalon"-coated. DuPont® invented Hypalon, but has now ceased making it and has retired their Hypalon trademark. Pennel uses the exact same chemical compound in their top-quality Orca material.

Raft repair adhesives and cleaners are toxic. When repairing your boat, always work in a well-ventilated area, and use a good respirator if possible. Always use proper chemical protection for your skin and eyes.

You will need: our Pennel Orca patch material, medium-grit wet/dry sand paper, and contact adhesive suitable for Hypalon or other rubber material (we recommend Clifton Hypalon Adhesive, available through NRS or your local dealer; item #38701.01) and solvent cleaner (toluene, item #38754.01).

*Note: Clifton Accelerator, item #38702.01.101, can be added to Clifton Hypalon Adhesive. It shortens the cure time and strengthens the bond. It is recommended for air holding patches and items such as D-rings that are subjected to heavy loading. We use this combination of adhesive and accelerator in the manufacture of your boat.*

Measure and cut a patch that will completely cover the area that requires repair. The patch should be bigger than the repair area, extending an extra 2" or so past the edge of the tear or abrasion. Cut the patch so that the corners are rounded. Lay the patch over the area to be repaired and trace the outline onto the boat material. Remove the patch and use the sandpaper to buff the area inside the traced outline. Also buff the



backside of the patch. Only scratch off the shiny finish of the raft material. Do not sand down to the point where the internal fabric threads are exposed. Use raft cleaner (toluene) to clean the repair area to remove any grease or oils and to prep the surfaces for best glue adhesion.

Situate the repair so that the material is out of direct sunlight if possible. Avoid doing repairs when the humidity is over 70%, if possible. Apply a thin, even coat of adhesive to both the back of the patch and the repair area on the boat. Allow the glue to dry for 20 to 30 minutes, or longer if the conditions are cold or moist. Apply a second thin layer of adhesive to both surfaces. Allow this coat to dry until it is tacky when you test it with the back of your knuckle. Then, carefully lay the patch in position, and press down evenly. *Once the patch has made contact with the repair area, the glue will bond and you will not be able to adjust or re-position the patch.* Try to avoid allowing any wrinkles or folds to occur. Using a roller (or the edge of the glue container, if nothing better is available), forcefully roll back and forth over the entire patch, putting as much pressure on the patch as possible. Flatten any wrinkles or bubbles.

Allow the repair to cure for as long as possible. In an emergency, you could inflate the boat after only an hour or so, but this would put stress on the patch, possibly requiring the repair to be re-done later. If you must inflate the raft quickly after the repair, try to limit the air pressure in the patched chamber. Ideally, you should allow the glue to cure for 8-12 hours.

Many difficult repairs are best performed by a professional raft repair center. Please call or e-mail NRS Customer Service for more information about repair centers in your area. Our phone number is 1-800-635-5202, and our email address is [service@nrs.com](mailto:service@nrs.com).

## TRANSPORT

If you are transporting your boat inflated, remember to slightly deflate the chambers. Temperature and altitude changes affect the air pressure in the boat, especially in direct sunlight. Whether transporting your boat inflated or deflated, make sure to inspect the load for any areas that could rub, abrade or puncture the boat's fabric. Remember that any sand or other debris left in the boat could cause wear on the fabric during transport. Putting your deflated boat in a boat bag for transport will help prevent wear and damage from other gear.

## STORAGE

If possible, let your boat dry thoroughly before deflating it. Do not use a vacuum or deflator to suck all the air out of the chambers unless absolutely necessary. The ideal storage position is unfolded in a cool, dry location, with a small amount of air left in the chambers. If space is limited, store the boat loosely rolled, with the valves open, in a protective bag or cover. Keep the boat off dirt or concrete floors. Rodents have been known to burrow into stored rafts, so take precautions to prevent this.

## CAUTION

### Safety Warning

Paddlesports can be dangerous and physically demanding. Participating in paddlesports may cause serious injury or death. Follow these safety standards when using this product.

- Get paddlesports instruction and First Aid training. Carry First Aid and rescue equipment.
- Always wear a Coast Guard Approved Personal Flotation Device. Dress for cold water and weather as appropriate to guard against hypothermia.
- Check your equipment prior to each use for signs of wear or failure.
- Never paddle alone. Scout unfamiliar waters. Portage where appropriate. Do not exceed your paddling ability.
- Do not paddle in high water or flood conditions.
- Read owner's information booklet prior to using this product.

The user of this product acknowledges both an understanding and an assumption of the risk involved in paddlesports.

### LIMITED WARRANTY

NRS inflatables are guaranteed to the original owner of the board to be free from defects in workmanship and materials for three years from the date of purchase under normal recreational, commercial or rescue use. If, after inspection, we find that the board failed due to a covered defect, it will be repaired or replaced at our option without charge. No product lasts forever and we do not guarantee against wear, tear, improper care, abuse, or neglect. Any structural change automatically voids this limited warranty. Except expressly set forth herein, NRS disclaims all warranties, express or implied, including but not limited to, the implied warranties of merchantability and fitness for a particular purpose. EXCLUSIONS FROM LIMITED WARRANTY: Deterioration of a board increases dramatically when water is allowed to stand in the air chambers. Since this condition can be remedied only by the owner's care, any problems attributed to water left in the air chambers are excluded from this limited warranty. As noted in this manual, explosive decompression tears are also excluded from this limited warranty. Boats shipped outside the USA may incur additional restrictions. EXCEPT TO THE EXTENT PROHIBITED BY LAW, IN NO EVENT SHALL NRS BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES.

## ACTIVATE WARRANTY BY RETURNING THIS CARD

You can also register your boat warranty online at: [nrs.com/warranty](https://nrs.com/warranty).

Your responses will be used only by NRS to improve our products and services. All information will be confidential and for NRS use only.

Name \_\_\_\_\_

Address \_\_\_\_\_  
\_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Phone \_\_\_\_\_ Date of Purchase \_\_\_\_\_

Email \_\_\_\_\_

Boat Serial # (see ID plate on boat) WSI \_\_\_\_\_

Model \_\_\_\_\_ Color \_\_\_\_\_

Name of Dealer \_\_\_\_\_

Dealer Address \_\_\_\_\_

1) How will your new NRS boat be used most?

Whitewater\_\_ Fishing\_\_ Other \_\_\_\_\_

2) How many days a year do you boat? (check one)

1 - 10\_\_ 10 - 20\_\_ 20 - 30\_\_ 30+\_\_

3) What water sports do you participate in? Check all that apply.

\_WW kayak \_inflatable kayak \_canoeing \_water ski

\_raft \_cataraft \_sit-on-top kayak \_SUP

\_scuba dive \_sea kayak \_kayak fishing \_rec kayak

4) Where do you purchase paddlesports equipment? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5) We would like to hear your thoughts.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Place  
Stamp  
Here

NRS

2009 S Main Street  
Moscow, ID 83843