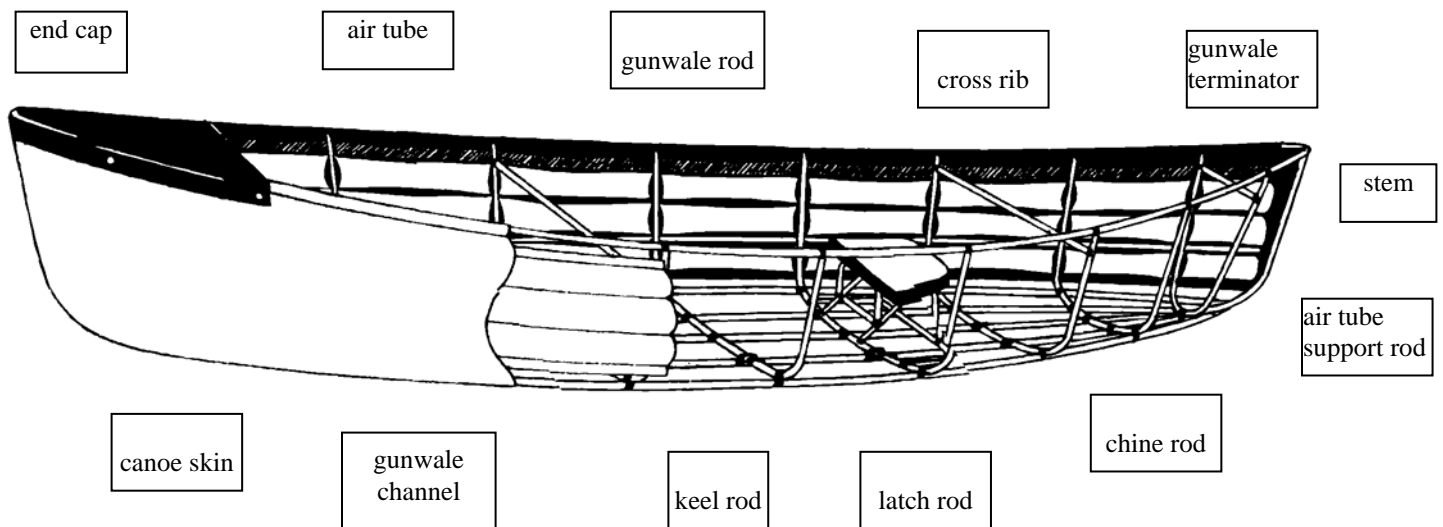


# Pakboats PakCanoe Assembly Instructions

*Note: Please read these assembly instructions carefully before assembling the canoe.*



## **Installing air tubes**

The first time a new canoe is assembled, the air tubes need to be installed. Roll out the canoe skin and the air tubes. The two air tubes will have to be separated by peeling them from each other. Along the edges of the canoe skin, you will find a channel with holes facing the inside of the canoe. There are corresponding holes along one side of each air tube. You will use the short plastic ties found within the repair kit to connect the air tubes permanently to the canoe skin. When you are done, the tubes should fit against the inside of the canoe skin on each side.

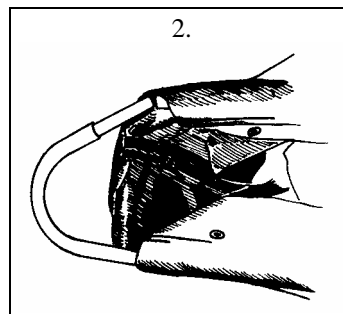
1. Place an air tube against the inside of the canoe skin with the valves facing into the canoe and the wide edge with punched holes next to the canoe skin's gunwale channel.
2. Insert a plastic tie into the small hole closest to the end of the gunwale channel and out through the larger hole. Feed the tie through the corresponding hole in the edge of the air tube. Close the tie and leave about a 2" free end. Cut off the end.
3. Repeat the procedure for all the holes along the side of the canoe.
4. Install the air tube on the opposite side the same way.

## Assembling the canoe

*Note: Don't be afraid to get into the canoe while you are putting it together. Most of the assembly is much easier if you are inside the canoe.*

1. Unpack the canoe and put like color coded parts together. Assemble the straight (shock corded) rods. Put aside the two rods with the black plastic end caps (you will need them when you get to step #10). Place the straight rods next to each other, lining up one end so the rods can be sorted by length.
2. The two longest rods are gunwales (identified by the red sticker). Starting from one end, insert a gunwale into a sleeve in the canoe skin (along the top on each side). It helps to fold the tip of the skin out of the way and make the gunwale channel as straight as possible. Repeat the process with the other gunwale rod.

3. Locate two small horseshoe shaped parts marked with a red sticker. These are "gunwale terminators". Insert one end of a gunwale terminator into the end of a gunwale. Put the other end into the other gunwale (it will barely go in at all). **See Fig 2.** Spread the gunwales apart until the tube end aligns with the gunwale terminator, slip the terminator into place (make sure it is all the way in). You may find it is simplest to align the gunwales by pushing them apart with your thighs from inside the canoe. Pull the canoe skin up around the gunwale terminator. The gunwale terminator must be centered between the gunwale channels. If this does not happen, the assembled canoe may be warped and the end caps will not fit properly. Repeat the process at the other end of the canoe.



*Note: Both gunwale ends must be inside the canoe skin before you go on to step 4.*

4. The shortest straight rod is the keel. The curved parts with metal forks are stems. Place the keel in the canoe. Insert the narrow end of one stem into the keel rod end. Lift the gunwales and clip the center of the gunwale terminator onto the top of the stem. Repeat the process with the other stem at the other end of the canoe.

*Note: You must have the gunwale terminators in place on top of the stems before proceeding to the next step.*

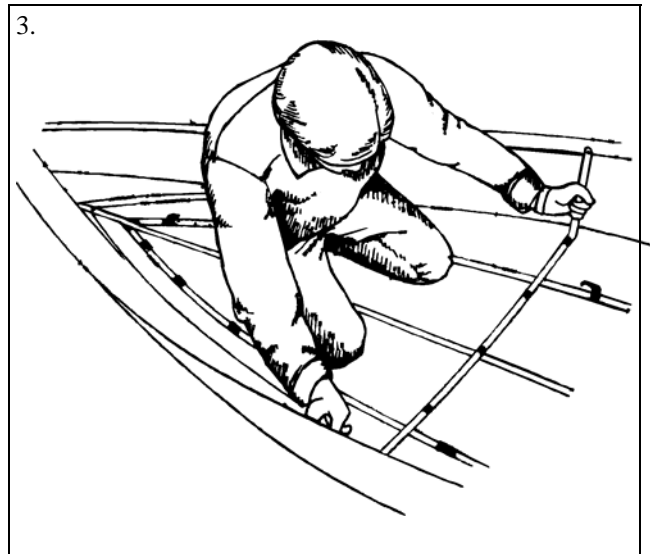
5. The two longest remaining rods are chine rods identified by yellow stickers. The ends of the chine rods fit onto the forks (also marked with yellow stickers) attached to the stems nearest each end of the canoe (the fork prongs fit into the ends of the rods). With the rod attached at one end, make the rod form an even arc and attach to the corresponding fork at the other end. Push the center of the rod down and to the side so it rests inside the canoe skin. Repeat the process with the other rod of the same length. Repeat step 5 with the latch rods identified by the blue sticker fitting onto the forks designated by the blue sticker. Make sure the latches at the center of the latch rods point in the same direction on both rods. The latches should be on top of the rod.

*Note: When the longitudinal rods are installed, the stems are pushed into the ends of the canoe skin, exposing the narrow sections that were inserted into the keel. If the joints of the keel rod start separating, pull the keel rod away from the stems enough to close the keel joints.*

6. Inflate the air tubes by mouth (this gives the right amount of pressure to help assembly).
7. Lay out the cross ribs next to the canoe with the narrow ones closest to the ends and the widest ones at the center. Installation will begin with the widest cross rib at the center of the canoe.

8. Get into the canoe and position yourself so the open side of the latches that secure the center cross rib are towards you and about a foot away. Pick up the widest cross rib (there are two in the PakCanoe 140 and 170 either will work) and turn it so the open sides of the spacer clips face the open latches. See Fig 3.

9. Place the cross rib inside and across the canoe between you and the latches. Tilt the top ends of the cross rib away from you and insert one end into the opening in the gunwale channel. Press the end of the cross rib up against the gunwale so that the C-clip snaps around the gunwale and holds it. Repeat on the other side of the canoe. Pivot the bottom part of the cross rib toward the latch until you feel some tension in the canoe skin. Position the longitudinal rods in the positions defined by spacer clips on the cross rib. Pivot the cross rib all the way so the latches snap shut. Secure the latches with the elastic bands that are installed around the latch rod.



10. Pick up one of the airbag support rods with black plastic end caps and slide it behind the cross rib you installed, in the groove between the lower air chambers. Center the rod so it reaches equally into both ends of the canoe. The arc in the rod will keep it in place between the air chambers during assembly. Repeat the process with the rod on the other side of the canoe.

11. The rest of the cross ribs are much easier to install, but the process is the same.

12. Once all cross ribs are in place, the air tubes can be fully inflated. They should feel pretty hard. To use the pump, insert the tip of a valve into the hose on the pump, turn the tip (and pump) counter-clockwise to open the valve, pump to desired pressure, close the valve by turning tip clockwise, and remove the pump.

*Note: The canoe will work well even if you just inflate the bags as hard as you can by mouth.*

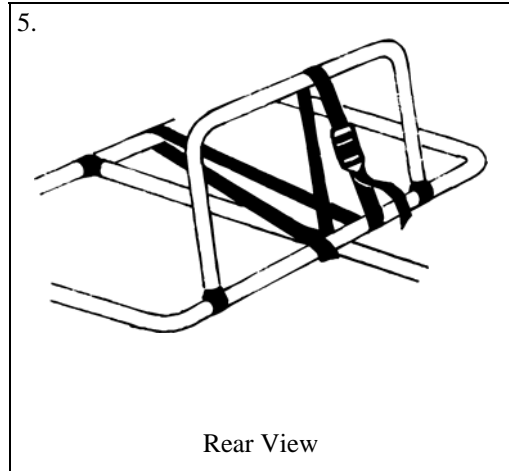
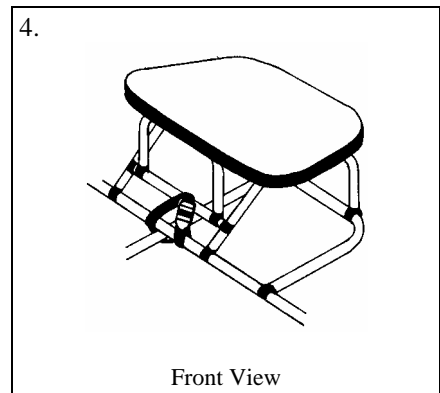
13. Install the fabric end caps on the canoe with matching snaps on end caps and canoe skin.

14. Seats are installed with one pair of legs on top of a cross rib and the other pair on a seat support rod. The seat support rod has a spacer clip at the center to rest on the keel and "C"-clips at the ends. It is bent so that it will connect to the cross rib.

The following assumes installation of tandem seats. For specific alternative seating, see note below.

- Clip a seat support rod to the stern side of the 3rd cross rib from the stern. Place the widest seat legs centered on the seat support rod and snap into place.

- Place the longest legs (with a cross brace) on the cross rib and snap into place. Place the shortest seat legs on the cross brace of the longest legs and snap into place.



- A long strap is attached under the seat top. Run this rear strap under the keel (behind the support rod), over the support rod, around the cross rib, under the support rod and back to the buckle. See Fig 5. Tighten well. This strap has a dual purpose. It holds the rear seat legs down against the seat support and the keel, and it holds the seat support rod firmly against the cross rib. Do not loop the strap several times around the keel and seat support rod. This will cause a bulge under the keel and form a potential abrasion spot.

- Run the short strap (attached to the cross brace) in front of the cross rib, under the keel, over the cross brace, under the cross rib and back to the buckle. See Fig 4. Tighten well.

- Using the straps as outlined above is very important. Review carefully.

- Clip the other seat support rod to the rear side of the 3rd cross rib from the bow. Repeat the above procedure.

The assembly instructions put the seat in a horizontal position that is comfortable to sit on. For a forward-tilted seat to support a kneeling position, pull the front of the seat up so the front legs come off the cross brace on the diagonal legs. Move the forward legs so that they rest on the cross rib. Press down.

Additional seat positions are possible using other cross ribs and mounting the seat support rod in front of the cross rib. We recommend the following:

*14' solo canoe. Place the seat with rear seat legs on top of the cross rib that is just behind center and front legs on the seat support rod. Secure as described above.*

*15' to paddle solo. Clip the seat support rod to the rear of the center cross rib. Secure as described above.*

*15', 16' or 17' tandem canoe. Stern seat: Clip a seat support rod to the stern side of the 3rd cross rib from the stern. Secure as described above. Bow seat: Clip a seat support rod to the stern side of the 3rd cross rib from the bow. Secure as described above.*

## **Disassembly, packing**

1. Remove the seats and fold legs.
2. Remove fabric end caps from canoe.
3. Open valves on air tubes.
4. Remove cross ribs by first slipping off elastic bands at the latch clip ends, then lift latch on locking clips and pivot bottom of cross rib away from locking clip. Release from gunwales.  
*Note: If the latch clip does not open easily, push the cross rib back into the locked position. Then lift the latch clip end and pull the cross rib out.*
5. Remove longitudinal rods by forming an arc in the center.
6. Remove keel assembly. The narrow stem sections should slide into the keel to reduce the longitudinal tension in the skin. Step on the stem and lift the gunwale terminator to unclip it from the stem.
7. To remove gunwale terminators, push gunwales apart a couple of feet from the end and pull gunwale terminator out. Repeat at the opposite end of canoe.
8. Make the gunwales as straight as possible. Fold the canoe skin out of the way at one end and pull the gunwales out. If they do not slide out easily, it helps to use one of the other longitudinal rods to push the gunwale half way. Then pull both rods out. If the gunwales tend to pull apart, it helps to bind the connections by making the rod form a slight arc.
9. Fold up all longitudinal rods. Start by folding in the center and work towards the ends.
10. Lay out the canoe skin, bottom down. Fold the sides in towards the center to cover and protect the air tubes. **Do not fold the foam floor. Folding the floor causes permanent creases.** Place all longitudinal rods on the end of the canoe skin opposite the air tube valves. Roll up the skin with the rods in the center. Secure with a strap.
11. Place the roll in the canoe bag to the side with the strap. Pack the other pieces. (One piece at a time is easier than trying to fit one bundle into the bag.)

## **SOME GENERAL INFORMATION ABOUT YOUR PAKCANOE**

### **Canoe Bottom Fabric**

A unique feature of your PakCanoe is the foam layer bonded to the inside of the canoe skin. This foam helps protect the canoe from abrasion and puncture by giving the skin some cushion and flex when it gets between a rock and a hard place. The nature of the bonding process can create visible cosmetic changes in the skin, but these have no effect on the performance of your canoe and should not concern you.

To help protect the bond between bottom fabric and foam, we recommend that you try not to let the sun bake the canoe's bottom for extended periods.

### **Canoe Side Fabric**

The fabric used in the canoe sides may shrink slightly as it ages. If it becomes so tight that the skin is hard to pull up over the gunwale terminators, the gunwales can be shortened slightly. Use a hacksaw and cut each gunwale 1/4" at a time. Use a file to smooth the cut ends.

### **Canoe Storage Bag**

The canoe storage bag was designed for your convenience - and the canoe's protection. It was kept simple to prevent damage when you travel. And the bag's bottom is lined with foam to protect the shock cords in the longitudinal rods. When you handle folded-up longitudinal rods, it is a good idea to avoid hitting the ends against hard objects. Shock cord is fairly rugged, but it is more easily damaged than metal tubing.

### **Patches and Reinforcements**

Punctures and abrasions to the canoe skin are easily repaired with the enclosed repair kit. Cut a patch to cover the damaged area plus 3/4" around it. Round the corners of the patch. Clean the patch and the area to be covered, and apply a thin coat of adhesive to both surfaces. Wait until the adhesive feels dry and apply the patch. Make sure the surfaces are pressed together well. Note: The smooth side of the patch should face out. Apply adhesive to the side that appears embossed. The canoe can be used immediately after the repair, but the bond will get stronger for several hours as the adhesive cures.

For harder use and longer trips, you can add reinforcement to wear areas. The keel line is the most exposed to wear, and we recommend that you add a keel strip if you anticipate a lot of abrasion. After some use it is easy to see which other areas are exposed to wear. Simply install patches of same color fabric or contact us for a keel strip kit.

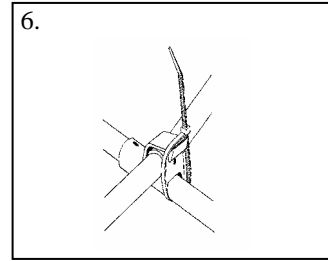
Punctures of the air tubes can be repaired with the adhesive in the repair kit and a patch. Ample patch material can be cut from the hem along the top where the tubes are attached to the canoe skin. Follow the procedure described above. It is important to clean the surfaces well before applying the adhesive.

*Note: Adhesives work best on rough surfaces. We recommend using fine sandpaper before adhesives are applied.*

The foam floor can be repaired with a patch of the same type of foam (order from ScanSport, Inc.). Place the patch where it will go. Pull up one side and blow hot air on the surfaces to be fused together. Press the surfaces together when they start melting. Let cool and test the bond. (Use a hot air paint stripper gun and heat a small area at a time.)

*Note: 303 Protectant and other similar products will protect canoe skins and air tubes from harmful UV rays and help extend the life of your PakCanoe, but we never use protectants on our own boats. Nor do we recommend that you for serious trips. The reason is that you can not apply a patch without completely removing the protectant from the area to be patched, and the protectant has to be removed with a chemical solvent. Also, the PakCanoe skin's PVC coating has very good UV resistance without any protection and should last for many years. We recommend that you store your PakCanoe in the shade whenever practical.*

## FINE TUNING YOUR PAKCANOE



### **Securing Cross Ribs**

You can reinforce the latching of the cross ribs with plastic wire ties (cable ties). See Fig 6. This is especially helpful with securing the ribs holding the seats. 8" ones work well. Make a loop under the latch rod and over the top of the latching clip.

### **Creating Additional Rocker**

In a folding canoe, the keel shape is influenced by the load distribution. The flexible hull lets you tune the handling characteristics to your specific paddling use.

**In rapids** where you want a rockered, highly maneuverable canoe, just concentrate the load (including paddlers) near the center of the canoe and leave the ends light. This gives more rocker (leaving the bow lightly loaded also improves your ability to rise up over waves).

**On flatwater** a straight keel line helps both tracking and speed. Distribute the load more evenly along the length of the canoe. You will be amazed how well the canoe tracks.

**On a typical river** with a mixture of flatwater and rapids you can tune your canoe by loading the gear in the midsection. Then sit close to the ends on flatwater for a straight keel line and improved tracking. Kneel next to the thwarts for more rocker and improved control in whitewater.

### **Attaching A Painter Line**

You can attach a painter or tracking line to the cross bar on the end cross rib. The rib must first be secured to the stem with a wire tie (refer to Securing Cross Ribs). The cross bar is not the ideal placement of the attachment point for serious wilderness travel. We recommend the use of D-rings.

### **Attaching D-rings**

If you need attachment points for painters or tracking lines, you can attach D-rings to the ends of the canoe just above the water line. Use D-ring patches with PVC backing. Drape a patch across the end of the canoe so the D-ring is next to the stem. The lower edge of the patch should be just above the curved part of the stem. Attach the D-ring patch the same way you patch the canoe.

### **Portage Yoke**

Our yoke can be installed when you assemble the boat and be left in place while you are under way. It will even fit under a spray cover. In big water with a heavy load the yoke adds support to the canoe frame.

### **Spray Cover**

We recommend a spray cover for wilderness trips in cold areas. You are much more comfortable on a rainy and windy day, and the canoe is less affected by wind. Please note that the cover does not turn the PakCanoe into a decked boat, and the cover may not hold the weight of a big wave breaking over the boat.

### **Knee Pads**

A kneeling position gives much better control and stability. Insert each pad under the cross rib in front of your knees and under the one behind you. Wrap the front half of the pad back over the cross ribs and attach the two ends to each other with straps. Both cross ribs will be padded and your knees will rest on more than 1" of foam.