

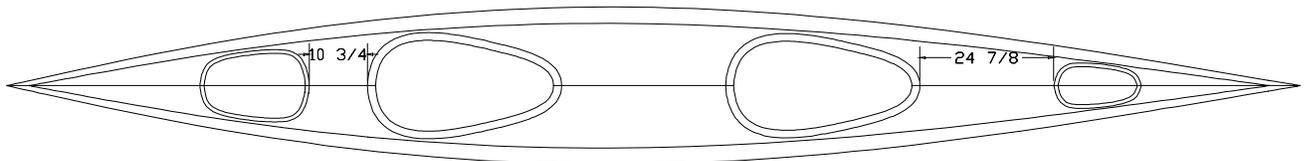
## Hatch Installation For Pygmy Solo and Double Kayaks

### Introduction/Overview

The hatch kit consists of several wooden "lips", strapping and hardware. The hatch is constructed by cutting a hole in your deck, gluing a spacer strip of wood to the underside of the deck and then gluing another strip of wood under the deck. This will form a recessed  $\frac{3}{4}$ " lip around the inside of the hole. The piece of wood that you cut out of your deck becomes the hatch cover and is simply set back down on the "lip" in the same hole from which it was cut. The lip is bedded on a strip of foam and the hatch cover is cinched down tight on the foam to produce a water tight seal. The following instructions will walk you through the entire installation process. Read through these instructions first and familiarize yourself with how the hatch system works and installs.

### Mark Hatch Openings

Find the measurements for your boat on the parts page of these instructions. These measurements are the distance in front of the cockpit (bow) and behind the cockpit (stern). Frankly, the location of the hatches is somewhat arbitrary. You can position your hatches differently if you wish. *If you have installed your footbrace rail at a different location than what is shown in your boat construction manual be sure to verify that the bow hatch position will work with your new foot rail position.* On boats with multi chine decks, you want the hatch to be set at least  $\frac{7}{8}$ " in from the deck chine seam. For the Murrelet 2PD stern hatch & GoldenEye designs the hatch needs to be  $1\frac{3}{4}$ " from the shear seam. The **Double's\*\*\*** bow hatch also needs to be narrower. You will need to trim about  $1\frac{1}{4}$ " off the ends of all the spacers and bow hatch lips to install the bow hatch in the **Double**.\*\*\*



Let's start with the bow. *For your model of Pygmy kayak*, measure and make a mark on your deck the appropriate number of inches in front of the leading edge of the cockpit coaming. For Example: for the Coho the measurements are 19" aft and 33" forward of the cockpit.

There are four wooden strips that are part of the 16" bow hatch and four that are for the 20" stern hatch. We will refer throughout this manual to the  $\frac{3}{4}$ " wide strips as the bow or stern "spacer strips". The  $1\frac{1}{2}$ " wide strips will be called the "hatch lip".

You will custom fit the hatch size to fit your model of kayak. Take one of the bow spacer strips and align it to the mark you made on your deck. Align the ends with the deck seam and the stern end with your mark. Position the spacer strip so that it's inner edge is at least  $\frac{7}{8}$ " from the deck chine seam on the multi-chine decks and  $1\frac{3}{4}$ " from the shear seam on the Murrelet 2PD stern deck & GoldenEyes. For the GoldenEye 13, position the spacer strip so that it's **outside** edge is at least  $1\frac{1}{4}$ " from the sheer seam. If the spacer strip is too close, simply push the spacer towards the deck ridge until you have the optimal  $\frac{7}{8}$ " (or  $1\frac{3}{4}$ ") from the seam. Mark where the spacer overlaps the deck ridge with a pencil. Cut the excess width of the spacer strip along your line. Use this spacer as a pattern to trim any excess off the other strip.

Now realign the spacer on the deck, align the trimmed ends with the deck seam and with your mark measured from the cockpit. Take a pencil and outline its *inside* edge.

A small piece of double-sided carpet tape at each end of the spacer strip might help you position and

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stick the spacer strip temporarily to the deck while you draw your line. Flip the spacer strip over and draw the inside of the hatch opening on the other side.

## Cut Out the Hatch

Drill five small holes next to one another in a row on the outline you have drawn on your deck. Use a  $\frac{1}{16}$ " drill bit. In a vice grip, clamp a narrow, fine cut, wood jig saw blade (e.g. Bosch #T101A0). Take the saw blade tip and scratch through the drill holes to make a slit. Insert your saw blade and carefully cut out the hatch. Remember that the hole that you are cutting out will become your hatch. Take your time and cut it slowly and carefully. Cutting *by hand* is most accurate.

Sand the edges of the hatch opening and the hatch cover. Don't take off too much, any irregularities will match.

## The Stern Hatch

The 20" long stern hatch is installed the same way as the bow hatch.

\*\*\*If your Double was built prior to 2000, the stern hatch intersects the butt plate used to join the panels to their full length. You will have to make some simple modifications to accommodate your hatch. Proceed with marking and cutting your hatch as described in the instructions. Once your hatch has been cut, temporarily place your spacer under the deck and scribe the areas where it intersects the butt plate. Remove this section of the spacer and glue the remaining spacer pieces under the deck. You can then proceed with the attachment of the lip as outlined in the instructions. On the hatch, remove  $\frac{3}{4}$ " of the butt plate from the edge of your hatch with a file or by sanding, and proceed with glassing the under side of your hatch cover. This will leave a flat surface to seal against the foam.

## Fiberglass

The undersides of the hatch covers, the bulkheads and the hatch lips all need a layer of glass. Because it has been more than 72 hours since you epoxied the underside of the deck, lightly sand the underside of the hatch covers. Lay the hatch covers, bulkheads and hatch lips on plastic. Cover each piece with fiberglass cloth and wet out with epoxy. You can use scraps of cloth leftover from building your kayak and the cloth provided in this kit. Allow the epoxy to cure and trim the cloth around the edges with a sharp razor knife. Turn the bulkheads and hatch lips over and glass this side as above. Allow the epoxy to cure and trim the cloth around the edges with a razor knife.

Make sure the edges of the hatches have been fully saturated with epoxy.

## Install Bulkheads

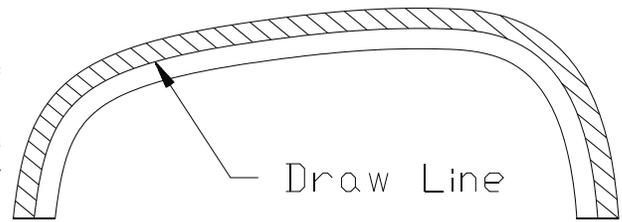
Your stern bulkhead is installed 1" behind the aft inside edge of the cockpit. Position it underneath the reinforcing butt plates that are right behind the cockpit. You might need to trim it a little to get it to fit. Once it is in place, smear a fillet of thickened epoxy around it and glass it in place with glass tape or scrap cloth cut into 1.5" strips. Cutting small slits in the tape at the corners of the bulkheads will help it conform. Fillet and tape both sides of the stern bulkhead.

The bow bulkhead is placed right in front of the forward end of your footbrace assembly. Again, trim it to fit and glass it in place as above. The cockpit side of the bow bulkhead is hard to reach. You can just glass the bow side, it will be strong enough. After the bulkheads are installed it is a good idea to drill a  $\frac{1}{16}$ " hole at the upper edge of each bulkhead just below the center deck seam. This will relieve any air pressure differences that can occur inside the sealed area of the boat which can make lifting the hatches difficult.

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## Glue Spacer Strip and Lip Under Deck

Take the  $\frac{3}{4}$ " wide spacer strip and lay it on the hatch lip and align them. Draw a line on the lip that scribes the inside edge of the spacer strip. You will use this line later to align the lip with the spacer strip when you glue the lip in place.



Clamp a spacer strip under the deck. If necessary, trim its ends to the center line.

Trim the spacer strip for the other side.

Lightly sand the underside of the deck at the hatch openings. Mix up some thickened epoxy and glue the spacer strips under the deck. Put a little extra-thick epoxy under the deck where the fiberglass tape comes down the deck ridge seam to help bed the strips. Clamp the spacer strip in place with eight or more clamps per side and let the epoxy harden.

Now glue your hatch lips in place. Align and trim the ends of the lips as above. Then position the lips under the deck. Use the pencil line you drew on them to align them with the spacer strips and glue them in place. **Make sure all end grains of the wood are thoroughly saturated with epoxy.**

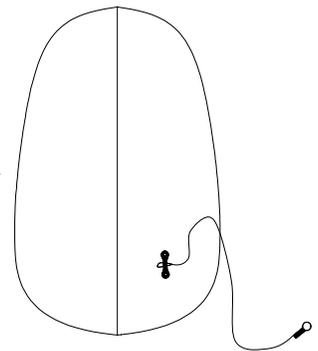
Once your glue has hardened, laminate two layers of glass tape under the hatch lips where they meet. This glues them together as a unit.

## Bed Foam on Lip

Roughen the surface of the hatch lip with 120 grit sand paper. Paint contact cement on the lip and on one side of the foam strip. Wait for the contact cement to partially dry. (See instructions on the tube of cement that you purchase.) Put the sticky side of the foam strip down against the lip and slowly bend the strip of foam around and bed it down on the lip. You will be able to bend it into the shape of the lip without the foam strip buckling or wrinkling. Do not align the seam of the foam directly over the deck ridge. Your hatch opening is now finished and you are ready to install your hatch covers.

## Install Hatch Cover Leash

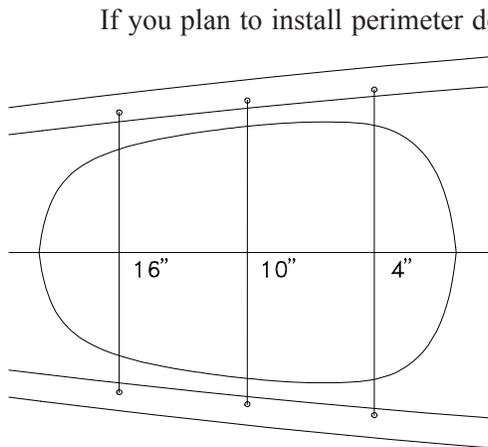
To prevent losing a hatch cover, a very simple leash can be created. Your hatch kit comes with two pad eyes and ring terminals. Attach a pad eye to the underside of each hatch. The easiest way to do this is with thickened epoxy. Mix up a small batch of epoxy and thicken it to a consistency of soft serve ice cream. Put a couple small dollops on the under side of the hatch 1.5 inches apart (the distance between the screw holes on the pad eye.) Push a pad eye down onto the dollops. Spread the epoxy that pushes up through the screw hole so that it fills the counter sunk area. Add a bit more epoxy if the screw holes are not completely filled. Allow the epoxy to cure.



Take a 30" piece of nylon twine (not included) and crimp a ring terminal to one end. Tie the other end to the pad eye on the under side of the hatch. When you attach the straps in the step below, secure the ring terminal to one of the screws.

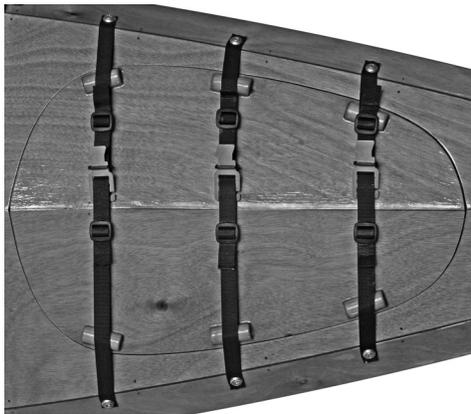
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## Install Strapping



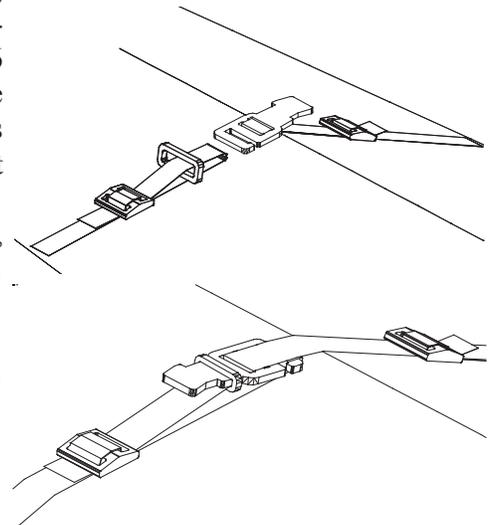
3, 8, and 13 inches respectively.

Take your stern hatch cover and position it on the boat. Mark 4, 10 and 16 inches on the deck ridge of the hatch. Take a square and draw a line perpendicular to the deck ridge from each of the marks to the edge of the deck. Then drill a  $\frac{3}{16}$ " hole  $\frac{1}{2}$ " outboard from the deck chine seam on each of the lines. (For the Murrelet 2PD stern deck & GoldenEye drill the hole at least  $1\frac{1}{4}$ " from the edge of the hatch). Saturate the holes with epoxy to seal the end grain. Let the epoxy harden overnight. Do the same with the bow hatch at 3, 8 and 13 inches.



If you plan to install perimeter deck lines, refer to the Perimeter Deck Line instructions for making the line guide loops on the hatch straps. You will use the webbing straps that came in the perimeter deck line kit on the stern hatch. Use the webbing straps that came in your Hatch Kit for the bow hatch.

Each hatch will have three cinch straps that go over them. The straps are bolted to the deck using stainless steel screws, lock nuts and a special stainless steel fabric washer that grips the webbing. Both hatches have a strap over the center of the hatch. The stern hatch, which is 20" long, will have the straps positioned at 4, 10 and 16 inches from the edge of the hatch. The bow strap holes are marked and drilled at



3, 8 and 13 inches.

Bolt the straps to the boat using the screws, lock nuts, and fabric washers provided. One end of each strap will have a pre-cut hole in it through which you push the screws. Remember to attach your hatch cover leash to one of the screws under the deck.

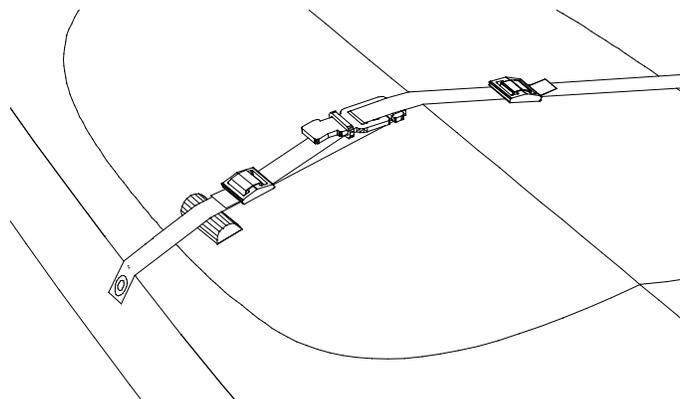
Take one of your straps and slide the free end through a buckle. Then slip the strap end through a "loop lock". That's the hollow rectangular nylon part. Then slip the strap end back through the buckle to make a loop of strap-

ping with the loop lock on it.

Do the same thing to the piece of webbing opposite it, except this time put the webbing through a cinch cam instead of a loop lock.

Adjust the straps so that the loop of webbing on one side will hook over the end of the cinch cam on the other side.

Leave the webbing adjusted loose enough so that you can grab the end of the cinch cam and swing it over to tighten the webbing down. Flip the cam over and hold it over by sliding the loop lock over the end of it.

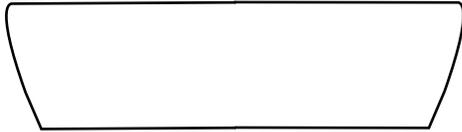


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Adjust your straps so that your cinch cams when closed are aligned with the deck ridge on the opposite side. If your straps are adjusted too tightly you can put far too much force down on your hatch cover. Adjust the straps until there is good positive force down on the hatch cover, but not too much.

## Glue Half-Round Dowels on Hatch

Cut the  $\frac{3}{4}$ " half round dowel provided into twelve  $1\frac{3}{4}$ " lengths. Bevel cut the ends of two of the half



round lengths at about 22.5 degrees as shown in the diagram. You will glue one these bevel-cut pieces under the middle strap on one side of each hatch cover. The undercut bevel will help you to easily grip the half round to pull the hatch cover up.

You will glue a length of half round under each strap. To do this, first position a half round under each strap, making sure the bevel-cut ones are placed under a middle strap on one side of each hatch. Align the long edge of the half rounds  $\frac{1}{8}$ " in from the edge of the hatch cover, centered under the straps, and mark their location. After you have marked the position for each half round piece, remove them and roughen the hatch cover and the underside of the half rounds with sand paper. Paint some epoxy slightly thickened with wood flour on the underside of the half rounds and reposition them on the hatch aligned to their marks. Then tighten the straps over the half rounds to hold them in place until the glue sets.

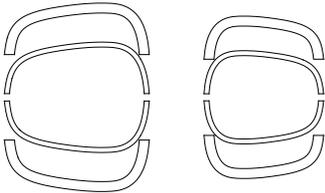
Epoxy saturate all the half round peices the next day.

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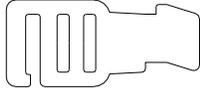
## Parts List

### Bow and Stern Spacer Strips and Lips

- \_\_\_ 8 pieces
- \_\_\_ 6 cinch cams



- \_\_\_ 6 loop locks



- \_\_\_ 12 buckles



- \_\_\_ 12 pieces of webbing - 15" long



- \_\_\_ 12 #10/32 x 1/2" Stainless Steel (SS) Machine Screws
- \_\_\_ 12 #10/32 SS Lock Nuts
- \_\_\_ 12 SS Fabric Washers
- \_\_\_ 2 3/8" x 3/4" foam strips 60" and 48" long
- \_\_\_ 22" - 3/4" dowel
- \_\_\_ Fiberglass cloth to supplement the scraps from the construction of your boat.
- \_\_\_ 2 Terminal rings for hatch cover leash
- \_\_\_ 2 Pad Eyes for hatch cover leash
- \_\_\_ 2 Bulkheads cut from 4mm Okoume Plywood- 1 Bow & 1 Stern

#### Hatch locations:

	Bow	Stern
Arctic Tern 17'	32"	17 3/4"
Arctic Tern 14'	27 3/4"	13 3/4"
Borealis XL	27"	18"
Coho/Osprey HP	33"	19"
Freya	24"	16"
Murrelet SDC	26"	14"
Murrelet 2PD	26"	18.5"
Murrelet 4PD	26"	17"
Osprey Standard	31 1/4"	14 3/4"
Osprey 13'	24 3/4"	13 1/2"
Osprey Double	24 7/8"	10 3/4"
Osprey Triple	28 1/2"	10"
Pinguino Sport/145	25"	14"
Pinguino 145-4PD	25"	17"
Pinguino 150 Pro	26"	12 1/2"
Ronan	23 1/2"	11 1/4"
Selkie	24"	12" (note: if you plan to add a stern deck rigging you may

choose to move this position to a bit further aft to accommodate it.)