



## Make Your Own 4-Bow Bimini

#121316, #121317, #121339, #121340



These in-depth instructions are also available as videos! **Stream for free at [Sailrite.com](https://www.sailrite.com).**

### Overview

Too much sun or a sudden rain shower can ruin your sailing experience. A bimini, however, can provide excellent shade or shelter when under sail or at the dock without creating that “closed in” feeling. It is easy to set up or fold away when not in use.

The construction of a Sailrite® Bimini Kit involves six phases: constructing the frame, creating the pattern, cutting the panels, sewing the cover, creating support straps or struts, and completing optional add-ons.

The Sailrite 4-Bow Bimini Skin Kits feature zippered tubing sleeves for easy removal and storage, tails at the forward and aft edges to act as attachment points and to prevent water from wicking back under the cover, and facing along the sides to keep the cover from stretching. Not only will this bimini skin kit rival a finished bimini from any canvas shop, but it is more affordable when you do it yourself.

Add window material or extra zippers to your kit to make optional curtains, bridge panel attachments, backstay slits or a window for improved visibility of the mainsail while sailing.

Check out our online streaming video, “Choosing the Right Fittings for Bimini & Dodger Frames Video,” to see the different ways to mount the frame (<https://www.sailrite.com/Choosing-the-Right-Fittings-for-Bimini-Dodger-Frames-Video>). Universal Deck Hinges are included in each kit, but any alternatives can be added easily.

These instructions do not cover installing the Universal Deck Hinges to your boat. Visit the Sailrite website for additional video tutorials on bedding hardware.

## Step 1:

### Measuring the Frame

The 4-bow bimini frame requires four bow assemblies (12 tubing sections), six jaw slides, eight eye ends, two Universal Deck Hinges and set screws.

The frame assembly is very straightforward, and the completed frame is easy to adjust. Each bow assembly is made up of a center tube with a slight upward curve (crown) and two hockey stick-shaped tubes (legs) joined together with short tubing splines. The four bow assemblies are combined into a final assembly using jaw slides and eye ends. The frame is then mounted to the boat using two Universal Deck Hinges that can accommodate many different angles of deck and coamings and even vertical surfaces. All fittings are secured in place with set screws.

First, lay out all the tubing sections. Notice there are four crowns and eight legs. These sections will make one primary bow, one secondary bow and two intermediate bows (**Figure 1**). The legs will be cut to an appropriate height and the center tubes to an appropriate width.

Once cut and assembled, the primary bow will be the longest, usually aft-most bow that supports the other three bows. (These instructions assume the primary bow is aft, but there may be circumstances where it is more appropriate for the primary bow to be forward.) The secondary bow will be almost as long as the primary bow and is typically forward. The intermediate bows will be the shortest. The secondary and one intermediate bow will both attach to the primary bow, and the second intermediate bow will attach to the secondary bow; the intermediate bows will angle toward each other. The secondary and both intermediate bows are attached with jaw slides (**Figure 1**). When the bimini is folded, the primary bow should lie underneath so the jaw slides stick up and do not mar the deck. The bows should nest neatly on top of one another so that the frame can be compactly stowed and covered with a boot when not in use.

Before building the bimini frame, three measurements must be taken: the width, the spread and the nominal height. Determine where the bimini frame is to be located on the boat and measure that width from port to starboard side. The spread is the distance fore and aft along the top edge of the bimini. The height is from the mounting position of the bimini frame to the top of the frame.

To determine the proper frame size, take two long legs (hockey sticks) to the boat. One leg will be used to measure the primary bow (longest length) and one will represent the secondary bow (second in length).

Hold the primary bow leg at the likely mounting point for the bimini. Angle the leg aft roughly to the point where the aft edge of the bimini will be (both in reach and height). Place a mark on the leg at the mounting point (**Figure 2**).

Now take the secondary bow leg and place a mark on it 3 inches above the mark on the primary bow leg. Angle the leg forward from a point 3 inches above the first bow (this 3-inch mark is just a good starting point and can be changed) until its height is roughly equal to the height of the primary bow. Note the location (forward reach and height) of the forward edge of the bimini (**Figure 3**).

Keep in mind that the deck mounts, eye ends and even the crown of the horizontal tubing pieces will increase the finished height (and spread). Be conservative by about 3 to 5 inches to ensure that the frame does not end up taller than is actually possible given the boom or anything else that restricts finished height. Sailrite has a video, "How to Build a 4-Bow Bimini Frame," that explains this in great detail (<https://www.sailrite.com/How-to-Build-a-4-Bow-Bimini-Frame>).

The fore and aft spread of the frame should be no more than 126 inches; however, a max spread of up to 98 inches results in a better-looking frame without sacrificing much height. Keep in mind that as the spread increases (the greater the angle between the legs), the maximum height decreases. The marks on the legs will determine the height and length of the finished bimini. Ideally, the bimini should be high enough for someone to stand in the cockpit and look out without having to stoop, but low enough to allow for free movement of the boom across the boat when the mainsail is set. It is imperative to have free movement of the boom if using the bimini when under sail.

Make sure the location of the pivot point (or bimini mount) does not interfere with winch handles, fairleads, etc. Then measure across the boat from one mounting position to the other and record this measurement (**Figure 4**).

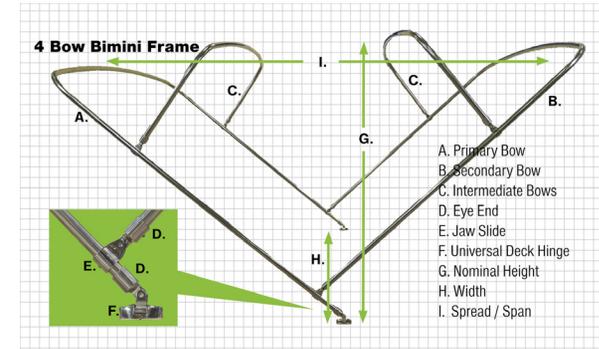


Figure 1



Figure 2



Figure 3



Figure 4



Figure 5



Figure 6

## Step 2 (Optional):

### Building a Wooden Platform

If building and mounting the bimini frame directly onto the boat, proceed to the next step.

An alternative to mounting the bimini frame directly onto the boat is to make a wooden platform that allows the frame to be secured to it for both the frame assembly and the top (skin kit) patterning (**Figure 5**). Doing so is often the easiest method, allowing for indoor work where the weather, uncomfortable heights and awkward environments can be avoided. It is also much easier to pattern a bimini top from a wooden platform. See the "Building Wooden Platform" chapter of Sailrite's "How to Build a 4-Bow Bimini Frame" video for plans on making the platform.

## Step 3:

### Cutting the Frame

Sailrite recommends a hacksaw with a blade that has 24 teeth per inch to cut the tubing (**Figure 6**).

Cut the primary bow leg at the mark and then cut another long leg to the exact same size. Do the same with the marked secondary leg and final long leg. There should be two legs for the primary bow and two legs for the secondary bow when finished. The short legs for the intermediate bows will be measured and cut in a later step.

Next, cut the four curved center tubes. First, subtract the recorded frame width from 106 inches. Divide the remainder by two and remove the resulting number of inches from each end of the center tube (**Figure 7**). Cutting from each end will keep the crown in the center of the bow.

## Step 4:

### Initial Frame Assembly

Lay the assembled primary and secondary bows on a flat surface or the floor (**Figure 8**). Make sure the center tubing curve is "up." Lock the legs in place over the splines that Sailrite has securely fastened into the ends of the legs (**Figure 9**). Stainless 3/16-inch pop rivets are included with the kit to accomplish this task.



Figure 7

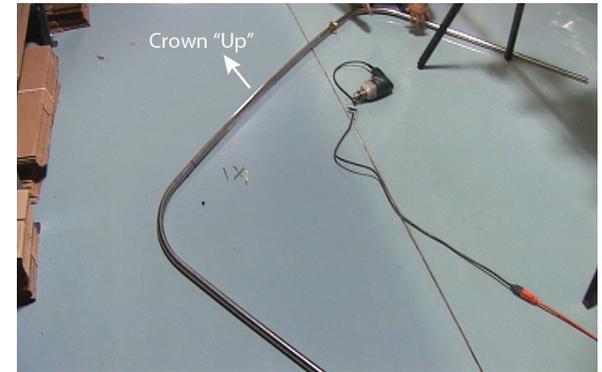


Figure 8



Figure 9



Figure 10



Figure 11



Figure 12



Figure 13

Mark a small hash with a permanent marker across the side of each joint from tube to tube. (Refer to our “How to Build a 4-Bow Bimini Frame” video to see this in greater detail.) These hash marks can be used to keep the legs straight while being drilled to avoid any twist in the bow assembly. Use a center punch to create a dimple in the surface of the tubing wall to guide the drill bit. Place the dimple a short distance away for the joint anywhere on the circumference of the tubing except near the top where the fabric will rest (**Figures 10 and 11**). This would create a bad wear point for the fabric top.

Drill through the frame with a 1/8-inch bit through both the frame piece and the spline tubing (only one wall surface of each) to make a starter hole. Do not drill through the opposite side of the tubing. Pull apart the tubing pieces and enlarge the holes with a 13/64-inch or #11 drill bit, the bit size that the stainless steel rivet calls for in the 4-Bow Bimini Frame Kit. After drilling, reassemble the pieces and insert the stainless steel 3/16-inch pop rivets into each hole. Set each rivet with a pop rivet tool (not included in the kit) (**Figure 12**). Repeat the process for the other side of the bow and for the other long bow. This permanently attaches your tubing pieces together, creating the three-piece arched bow.

This is a great time to mark each finished bow with patterning lines for the creation of the fabric top. Do so by laying each bow flat on the floor and taking some scrap tubing (about 6 inches in length) to create a marking device. Use a medium point permanent marker and wrap masking tape around the marker until it snugly fits centered inside the tubing. Use this makeshift marker to scribe a line from about 2 feet down each rounded corner of a bow and all along the top by holding the marker flat to the floor as you mark (**Figure 13**). Protect the marks from rubbing away by placing a strip of filament tape over the markings from end to end (**Figure 14**).



Figure 14

Slide two jaw slides onto each end of the now complete primary bow assembly and one jaw slide onto each end of the secondary bow assembly (**Figure 15**). Install four eye ends on the primary and secondary bows, tightening the set screws in each. Lock the lower jaw slide on the primary bow in place with a hex key about 3 inches (or at whatever distance determined when measuring) above the eye ends.

Remove the pivot screws in these jaws and insert the eye ends from the secondary bow. Then reinsert the pivot screws and tighten. Adjust the jaw slides so the secondary bow folds neatly over the top of the primary. When the bows are held together vertically, they should be as even in height as possible (**Figure 16**). Carry this assembly to the boat (or wooden platform) and mount it in place using the Universal Deck Hinges included in the kit (or optional mounting brackets as required). If using a wooden platform, set the mounts at a distance equal to what was measured on the boat.

Use strapping tape to hold the frame upright at the proper spread and height (**Figure 17**). Double-check the fore and aft bow height measurements and readjust strapping tape if necessary.

## Step 5:

### Intermediate Bows

Next, grab two uncut legs to measure the height of each intermediate bow. These bows should fold in line with the other two bows. Starting with the intermediate bow that will attach to the primary bow, lay one leg against the primary bow and pivot up and over using your hand as a fulcrum. It may be helpful to cut some of the leg length off to make it more manageable. The two completed intermediate bows should raise the center of the bimini about 3 inches or slightly above the height of the primary and secondary bows. The crowned top of the intermediate bows should be equally spaced between the primary and secondary bows and between each other. So take the spread measurement and divide by three. This should be the approximate distance between each bow. Keep in mind that the spread between any two bows at any point should not exceed 43 inches, which allows for enough support to reduce water puddling on the fabric top.

When the proper angle is found, mark the pivot point on the

primary bow and on the short leg. Place a matching mark on the other short leg and cut both legs to size. Slide the two legs onto a center tube and lay on a flat surface with the crown "up" and legs square. Drill and rivet the sections into place. Use the makeshift marker from earlier to once again scribe the frame with a patterning line and place filament tape over the line to protect it from rubbing away (**Refer to Figures 13 and 14**). Install two eye ends on the legs of this bow assembly and attach to the two upper jaw slides on the primary bow (**Figure 18**). Lock the slides on the pivot point using a hex key.

Repeat this entire process to find the angle and marking point for the intermediate bow that attaches to the secondary bow. In most cases it will mirror the size and position of the first intermediate bow.



Figure 15



Figure 16



Figure 17



Figure 18



Figure 19 shows the completed 4-bow frame with bows raised in position.

## Step 6:

### Stabilizing the Frame Assembly

Run three lengths of strapping tape from the primary to the secondary bows (fore and aft) to better secure the bows. Only concern yourself with the set of the primary and secondary bows at this time. Connect the outer two bows, running one of the three tapes near each spline joint and one directly on the center. The bows must be parallel. Measurements from spline joint to spline joint (from bow to bow) should be equal. It may be easier to measure from a consistent deck location to opposite spline joints to ensure symmetry. It will be necessary to either have a helper hold the primary bow stationary while performing this exercise or to use tape temporarily to hold that bow in its general expected final position. Use the tape to adjust the set of the frame until it is as square and symmetrical as possible.

Next, support all four corners with strapping tape. The tape should be attached to the bows in the same location that eye straps will be mounted to the tubing in a future step. Locate each position by holding a yardstick along the top of the bow corner so that half of it extends beyond the corner. Then measure from the bottom surface of the yardstick down 11 inches and mark the leg (**Figure 20**). Wrap filament strapping tape around the bow just above the mark and connect the free tape end to the appropriate strap eye connection point that has been secured to the boat (or to a strap eye temporarily screwed to the wooden platform) (**Figure 21**). Repeat for all four outer bow legs. Set the tension of these tape straps to maintain the careful symmetry previously confirmed. Now is also the time to ensure that the rake of the top is both pleasing and level.

The appropriate tightness of the fabric top between the outer bows is best achieved by pre-tensioning the frame along its centerline. Sailrite skin kits include a double adjust side release buckle and 1-inch webbing. Do not cut the webbing down as it is also to be used to create straps in a future step. It is merely used here to aid in creating the pretension. Create a loop, threading each end of the webbing through the ends of the buckle. Run the webbing around the primary and secondary bows, beneath the intermediate bows (**Figure 22**), and snug the webbing so that the strap is on the centerline of the frame. Now trap the webbing between your thumb and the tubing frame and jerk moderately on the strap's nearest end about three times to compress the frame (**Figure 23**). The



Figure 20



Figure 21



Figure 22



Figure 23

effect of this is to reduce the amount of “bow” or top curve to the frame for patterning, that way when the fabric top is constructed it will be under tension at the centerline, creating a very tight and pleasing fit. If done correctly, releasing the buckle clasp should confirm that about 2 to 3 inches of compression has been achieved.

Next, support the intermediate bows with tape. The jaw slides should be positioned at the same height on each side of the primary and secondary bows and also so that the intermediate bows will fold over the top of each outer bow. The intermediate bows should be 3 inches or so higher than the primary and secondary bows when in their final position (**Figure 24**). Once the bows are taped in place, measure the distance between each bow. The measurements should be roughly equidistant, meaning the distance between the primary and intermediate bow, between each intermediate bow, and between the intermediate and secondary bow should be about the same. Make any necessary adjustments.



Figure 24



Figure 25

Use additional tape at all locations to firmly secure the entire frame (**Figure 25**). Run strapping tape between the intermediate bows securing their location, as well as between the outer bows at the center location and at the spline joints. The rigidity of the frame is critical for making an accurate pattern. If necessary, adjust the tape to eliminate any inconsistency in bow alignment. The tops of all four bows should be parallel horizontally when sighted from the front or back.

## Step 7:

### Measuring the Skirt Position & Marking the Frame

Put a straightedge along one side of the frame assembly from the primary to the secondary bow to establish the desired depth of the skirt. Its depth and angle should yield a pleasing shape. Typically, the skirt should end about 6 to 8 inches down from the curve of the frame. Mark on the tube centers at this height with a permanent marker. At the intermediate bows, raise the mark by about 1-1/2 inches to mimic the elevated position of these bows, if desired (**Figure 26**). Doing so will give the completed skirt edge a nice look.



Figure 26

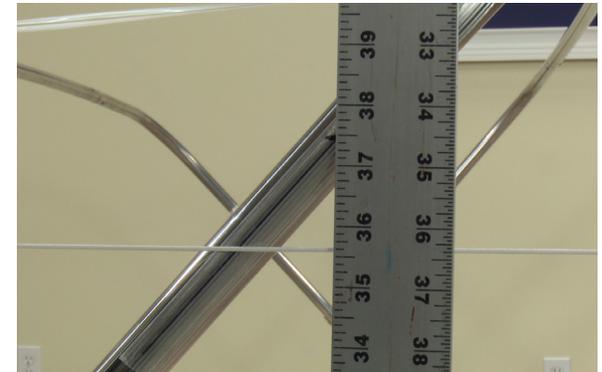


Figure 27

If working on the boat, measure from the dot to the eye end on each bow. Transfer this measurement to the opposite side and place the corresponding dots there. If working from the wooden platform, measure vertically from the dot on the frame to the floor (**Figure 27**). Transfer this measurement to the opposite side and place the corresponding dots there. These eight dots will determine the limits of the bimini top and help guide the creation of accurate patterns.

Also mark a short line at the center point of each bow (the center between the spline joints).

## Step 8:

### Making a Pattern

With the frame securely anchored and strapped tightly, use an inexpensive plastic like Dura Skrim (included in the 4-Bow Bimini Skin Kit) to pattern the fabric top. Previously, the patterning lines were marked on the bows and protected with a layer of filament tape. Apply basting tape on top of the filament tape on all four bows. The filament tape is required not just to protect the marked lines, but it also can easily be peeled away to remove the basting tape when it is no longer needed. Leave the tape's transfer paper in place to prevent premature adhesion.

Drape the pattern material over the basting tape on two bows. There will be three total patterns created between the four bows. Start with either the primary and its intermediate bow or the secondary and its intermediate bow. Starting at the center of each bow, peel away the transfer paper from the basting tape, revealing the glue, and smooth the pattern material down onto the bows, working toward the outer edges and being careful to remove all wrinkles without overstretching the material. It may be helpful to fit the patterning material with two people, one in front and one behind (**Figure 29**).

If there is a backstay, cut a slit(s) in the pattern to allow for the backstay(s). If patterning is not being done on the boat it will be necessary to do some careful measuring to determine the location of the backstay. Determining the position athwartship is not hard, but determining how far the slit must go into the top is a little more challenging. Fortunately it does not cause any issues to be generous in the depth of the cut. If working on the boat, slit the pattern material from the closest frame location until it accommodates the passage of the stay(s) (**Figure 30**). Mark carefully the exact point(s) where the backstay passes through. After creating the passageway, carefully tape the slit closed with clear packing tape. Then make sure the pattern material is smooth and taught over the bows before marking lines and labeling the pattern.



Figure 29



Figure 30

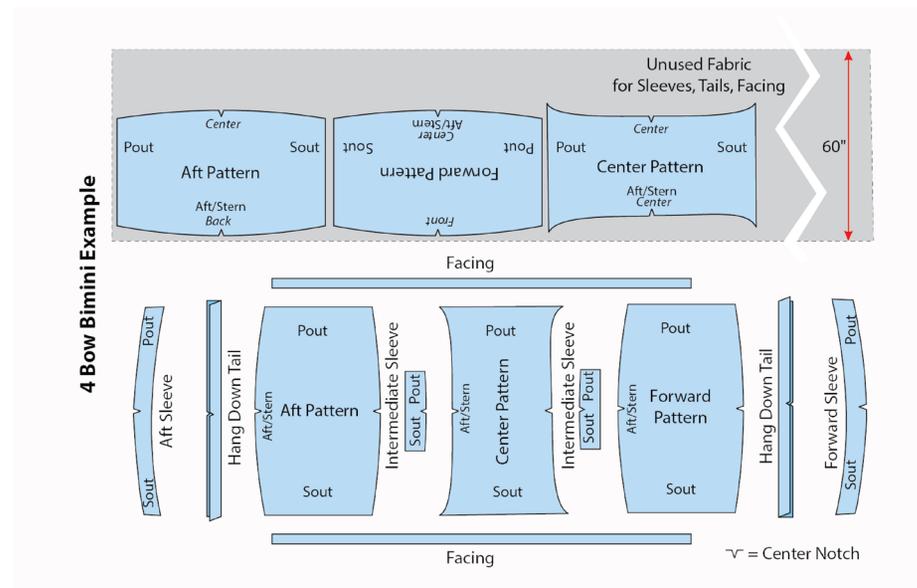


Figure 28 shows a detailed overview of the finished pattern.

## Step 9:

### Marking & Labeling the Pattern

Once the material is smoothed out, transfer the small dots indicating the skirt position from the frame to the patterns. The dots will be inside the fore and aft lines drawn in the next steps.

Next, draw a thin line along the intermediate bow and the primary or secondary bow, depending on which panel piece is being patterned. Mark over top of the patterning lines previously placed on the bows with permanent marker. It will be possible to see the lines below both the filament tape and the basting tape. It is easier to make dots along the line at consistent short intervals if hands are unsteady or the boat is rocking (**Figure 31**). Do not draw a line through any of the skirt edge dots as they must be easy to locate. Stop about 1/2 inch short of the dots on the intermediate bow. These lines will define the forward and aft patterns.

Label the pattern with “SOUT” for the starboard outside surface and “POUT” for the port outside surface (**Figure 32**). Also mark the centerline and label the “fore” and “aft” positions on the pattern.

It is best to pattern each of the three large sections of a 4-bow bimini top separately. Once one is complete, remove it carefully to start the next. To remove the aft pattern, the slit(s) leading to any backstays must be cut open again. Be careful not to remove the filament tape at the intermediate bow in the process. If the basting tape comes free a new length can be applied. Remember to label the pattern piece with “SOUT,” “POUT,” “fore,” “aft” and mark the centerline. Carefully retape the backstay slit(s).

Add a 1/2-inch seam allowance to the forward and aft edges of each pattern (**Figure 33**). It is a good idea to use a 1/2-inch guide (ex. 1/2-inch-wide flexible curve) to make smooth lines.

Next, connect the skirt dots with a straight line. Do not extend the line through the dots; rather, leave the dots uncovered. (From this point on, the dots will only be used as a reference point to check for pattern symmetry. They may also be helpful if making side curtains.) There is no need to add a seam allowance on the skirt edges; only the forward and aft sides of each panel need a seam allowance. Cut the



Figure 31

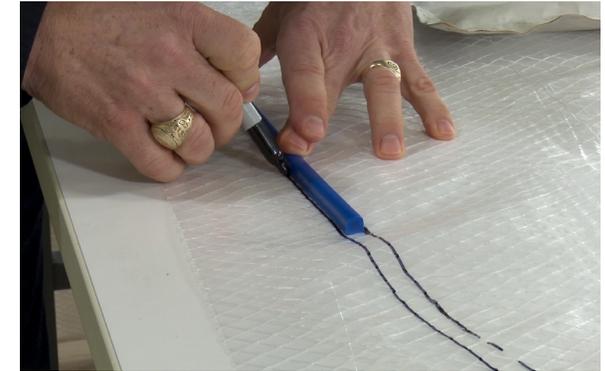


Figure 33



Figure 32



Figure 34

patterns on the resulting lines, making sure the dots are not cut away.

Fold the patterns so the dots on each side match up. The two halves should nearly mirror one another if the frame is symmetrical (as it should be). It will never be exact, so don't second-guess yourself unless the offset is extreme (**Figure 34**). With the patterns folded, cut a small 1/4-inch notch in the center of the three patterns along their forward and aft edges. The notch should match the centerline mark transferred from the frame to the pattern.

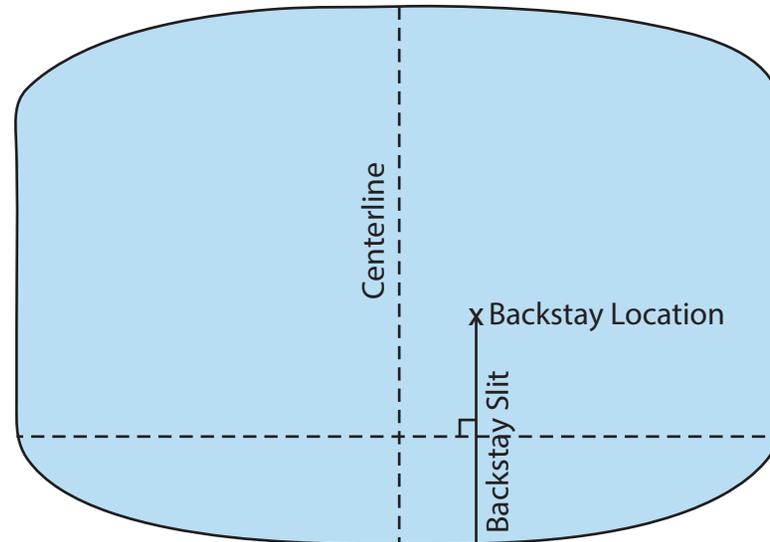
## Step 10:

### Transferring & Cutting the Pattern

Transfer the patterning material to the cover fabric and cut out the panels one at a time. Always lay the patterns on top of the cover fabric so the length of the pattern runs with the thread line of the fabric (along its length or width). Mark all the edges with a soapstone pencil or chalk (**Figure 35**).

If you cut or marked a slit for a backstay in the patterning material, mark the exit spot for the backstay onto the aft panel. To achieve a backstay slit that is straight and parallel to the centerline of the boat, trace a dotted line on the aft panel athwartship from one corner to the other corner. Using the backstay exit mark and this dotted line, find the 90-degree angle and draw a line from the edge of the aft panel up through the backstay exit mark, perpendicular to the dotted line. Label the line “backstay slit” on the panel for future reference (**Figure 36**).

Cut out the panels with a hotknife to prevent raveling. Make sure to cut fabric on an insulated cutting surface. Label the sides of the fabric panels “POUT,” “SOUT,” “fore” and “aft” (with chalk or soapstone pencil) and transfer the centerline mark onto the fabric (**Figure 37**). Also label the panels to know which is which—center, forward and aft. Place a 1/4-inch notch at the centerline mark. Do not go deeper than 1/4 inch or it may show when sewing the panels together.



Aft

Figure 36



Figure 35



Figure 37

## Step 11:

### Measuring & Cutting the Sleeves

Sleeves, also known as pockets, are used to secure the cover to the frame at the primary and secondary bows along the forward and aft edges, as well as at the intermediate bows in the middle of the top. Use a section of unused fabric to make two 6-inch-wide sleeves for the primary and secondary bows, matching the curves found along the aft end of the aft panel and the forward end of the forward panel.

Use the aft edge of the aft panel to pattern the aft sleeve (**Figure 38**). Trace the curve of the panel onto the unused fabric inside the edge enough to allow room for a 6-inch-wide sleeve, plus a few extra inches at the ends and about 3/4 inch beyond the width on each long side.

At the end of the curve, strike approximately an 8-inch line parallel to the skirt edge of the aft panel on the same material for the sleeve. Label the "POUT," "SOUT," "aft" and centerline, matching the aft panel edge. Upon reaching the outboard corner the curve must be extended. Use a flexible ruler on its edge and bend it to match the first drawn curve, leaving half of the ruler extending beyond the corner; extend the curve along the ruler by about 3 inches (**Figure 39**).

Now draw a parallel line 2 inches inboard of the 8-inch line on the end (**Figure 40**).

Do not cut the aft sleeve out yet as an alteration of the curve needs to be made on the convex side right at the end of the curve to accommodate the curve in the frame and to prevent a hard spot from forming on the bimini top. Working from the erected frame, measure from the center mark out to the start of where the curving of the corner becomes abrupt (**Figure 41**).



Figure 38

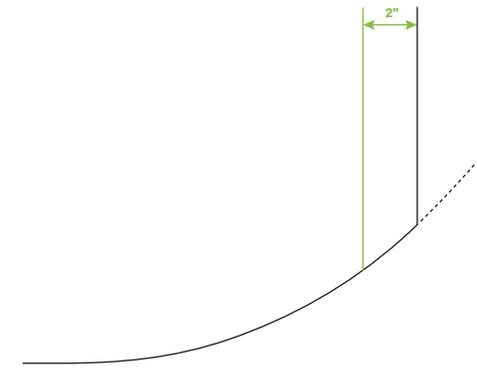


Figure 40

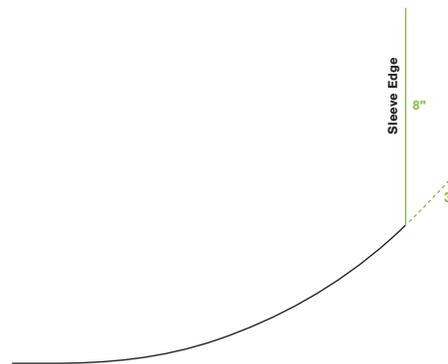


Figure 39



Figure 41

Now armed with this measurement transfer it to the sleeve, measuring from the center of the convex side outward. Mark the position along the sleeve edge. A wedge of material will be added to widen the sleeve from this point carried to the outboard end. How wide the wedge must be depends on the angle of the primary and secondary bows to the water line, but in most cases it can be generalized to be 1/2 inch. To learn the finer details of how the exact measurement is derived, please watch the full "How to Make a 4-Bow Bimini Top" video. Extend the line of the straight end outward of the convex curve side by 1/2 inch. Now use the flexible ruler once again and bend it to create a very similar curve to the original convex curve but moved to create the wedge (Figure 42). Trace this new curve line.

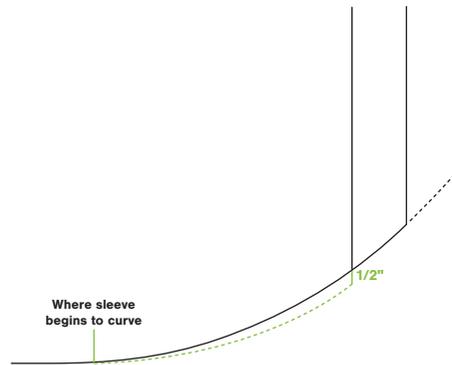


Figure 42

Finally, measure and mark a series of points 6 inches perpendicular to the inside of the curve (Figure 43). Make sure to measure 6 inches from the original panel edge and not from the added 1/2-inch wedge.

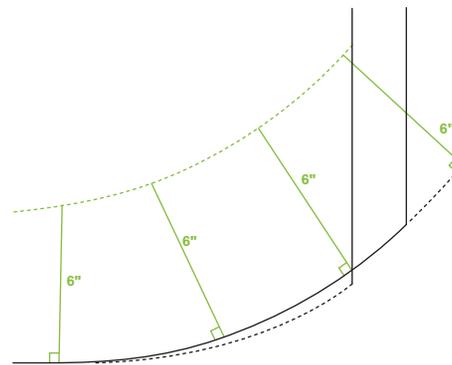


Figure 43

Follow this same approach to widen the opposite corner of the sleeve. Finally, cut out the aft sleeve, taking care to cut on the latest lines drawn to include the wedge addition (Figure 44).

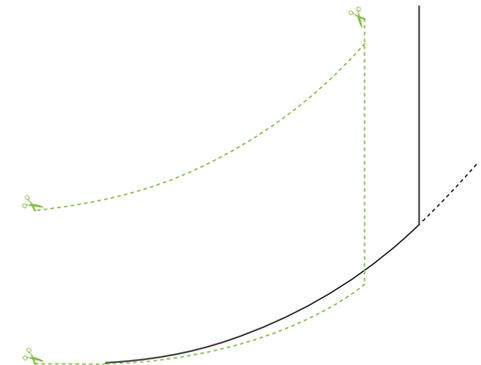


Figure 44

Repeat these steps to create the forward sleeve, using the forward edge of the forward panel to pattern the sleeve. Cut 1/4-inch center notches into the convex side of each sleeve.

For the two intermediate sleeves, you need to pattern from the forward panel's aft edge and the aft panel's forward edge. Trace each panel edge onto scrap fabric. Center the baseline on the pattern edge over a piece of cover fabric and extend it 18 inches on either side for a total length of 36 inches. This length will accommodate a 36-inch zipper nicely.

Mark a straight line parallel to the end points of the baseline and 6 inches from those end points (Figure 45). Use a hotknife to cut out the resulting rectangle (with a slightly curved baseline edge). Cut a 1/4-inch notch at the centerline of the baseline side of this shape and label the "POUT" and "SOUT" sides and also label which sleeve it is, whether the forward or aft.

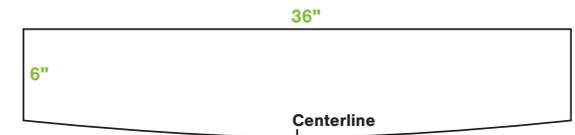


Figure 45

Repeat this same process for the second intermediate sleeve.

## Step 12:

### Cutting the Tails

The tails are the narrow strips of fabric for the leading and trailing edges of the bimini that act as attachment points and prevent water from wicking back under the cover. There are two styles of tails to choose from, both of which look good and can be used with zipper-attached panels:

Tuck back tails look good and tend to “tuck back” under the bow to encourage water to run off along the edge rather than streaming back from the edge under the bimini (**Figure 46**).

Hang down tails are the easiest to make and loosely hang down, which still encourages decent water runoff. They also provide an excellent platform for zippers so the bimini can be attached to other covers or a forward curtain. But the loose edge has a bit of a “ruffled” look to it (**Figure 47**).

From a construction standpoint, the tuck back tail requires more fabric and therefore might necessitate a center seam if scrap fabric is short. Cut two shapes for each tail (doubled to increase stiffness) very similar to the sleeves except only 3 inches wide. Use the panel edge to pattern and trace from (**Figure 48**). Each tail should be long enough to extend an inch or so beyond the length of the forward or aft panel. Cut a 1/4-inch center notch in each tail panel to match the corresponding notch in its pattern. Label each tail shape with “SOUT” and “POUT” to match the pattern (**Figure 49**).

The hang down tail is just a folded strip of fabric. Cut a 6-inch-wide rectangle of fabric with the length of the appropriate forward or aft panel plus an extra 4 or 5 inches. Fold over the fabric by its length and crease to make a long 3-inch-wide rectangle. Fold this rectangle in half and mark the center point. No “POUT” or “SOUT” labels are necessary as this tail has no shape.



Figure 46



Figure 48



Figure 47



Figure 49

## Step 13:

## Cutting the Facing Strips

Facing strips are sewn along the bimini sides to keep the cover from stretching and to provide a foundation for curtain zippers if ever desired. Mark two rectangles that are 3 inches wide and as long as the sides of the bimini at the skirt line; add a few inches to the length. The rectangles will be resistant to stretch if the length is run along either the width or length of the fabric as it comes off the roll. Cut out the rectangles using a hotknife.

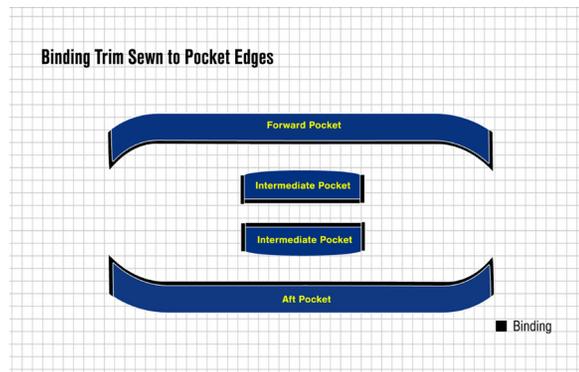


Figure 50



Figure 51

## Step 14:

## Binding the Sleeves

Binding is sewn to the concave sides and the two short ends of the forward and aft sleeves, and to the straight side and the two short ends of the intermediate sleeves (Figure 50). Sew binding to the long edges first. Sailrite's 4-Bow Bimini Skin Kit comes with standard Sunbrella acrylic 1-inch binding. Sewing with the Sailrite 1" Swing-Away Straight Binder makes sewing the binding fast and easy (Figure 51). Use a hotknife to seal the ends of the binding.



Figure 52

## Step 15:

## Sewing the Zipper to the Intermediate Sleeve

A 36-inch zipper is to be sewn on the bound side of each intermediate sleeve. Apply basting tape to the side of the zipper flange that will align with the long bound sleeve side with the zipper slider facing up. With the "SOUT" and "POUT" side of the sleeve facing down and the basting tape exposed, press the bound edge of the sleeve firmly against the taped flange, aligning the binding with the zipper teeth. Flip the assembly and use a ruler to apply pressure to ensure a firm bond (Figure 52). Sew the zipper to the sleeve.

## Step 16:

## Joining the Panels

Joining all the panels together will be a multistep process. First, join the forward panel, center panel and forward intermediate sleeve into a three-layer assembly. First, put down the forward panel OUT side up with markings facing up. Then place the center panel IN side up over it with markings facing down. Finally, put the forward intermediate sleeve panel OUT side up over the first two with markings facing up (Figure 53). Make sure all of the center notches are lined up.

Starting at the center and working toward both sides, use double-sided basting tape to baste everything together (Figure 54). Be careful not to stretch the panels as they are smoothed together. There will be shaping at the ends of the panel assembly; be careful to line up the edges and prevent wrinkles from forming between the forward and center panel. It might be helpful to pin the panels together at the curves until they're sewn together. There will be a small dog ear at the edge; this is the 1/2-inch seam allowance and is expected. Use a ruler to apply pressure to the basted layers for a firm hold. Next, baste the forward intermediate sleeve in place and apply pressure with a ruler (Figure 55).

Starting from the center and working to one side, run a row of straight stitches 1/2 inch inside the basted edges of the three-layer assembly. Use a piece of masking tape, or the Deluxe 5-1/2" Magnetic Guide from Sailrite, on the sewing machine platform as a guide to ensure straight sewing (Figure 56). If there is any inaccuracy during sewing, the problem will be

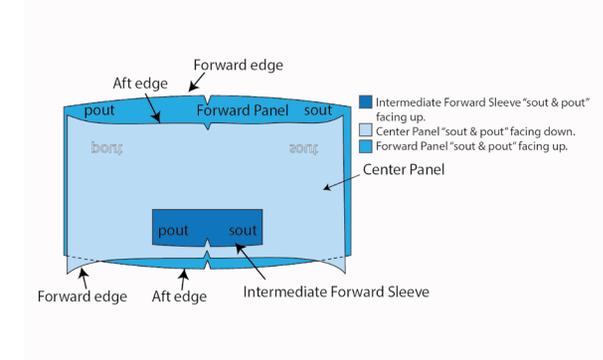


Figure 53

limited to half of the seam. Finish the seam on the other side.

This is the first step of a two-process semi flat felled seam. This seam is not only easy to do accurately, but it keeps one stitch out of the sun so it will last many years (Figure 57). The exposed stitch may require replacement in as little as three to four years but can easily be replaced since the shape of the cover will be maintained by the hidden stitch.

Unfold the top two layers (forward intermediate sleeve and center panel) along the seam line so the outside surfaces are facing up (the sleeve and center panel will face the same direction). The center panel and forward panel will be splayed apart. Keeping the seam allowance under the forward panel, run a topstitch within 1/8 inch of the original seam line on the forward panel side. The stitch should penetrate only the forward panel and the seam allowance (not the center panel or forward intermediate sleeve except what is in the seam allowance) (Figure 58). Use the longest possible straight stitch to reduce fabric puckering.

Now join the aft panel, center panel and aft intermediate sleeve into a three-layer assembly. First, put down the aft intermediate sleeve panel IN side up with markings facing down. Then place the center panel OUT side up with markings facing up. Finally, put the aft panel on top with IN side up and markings facing down (Figure 59). Make sure all of the center notches are lined up.

Baste and sew this panel assembly together as was done for the forward panel assembly. Once sewn, the entire panel assembly will no longer lie flat on the floor because the curves in the seams accommodate the curvature of the bimini frame.



Figure 54

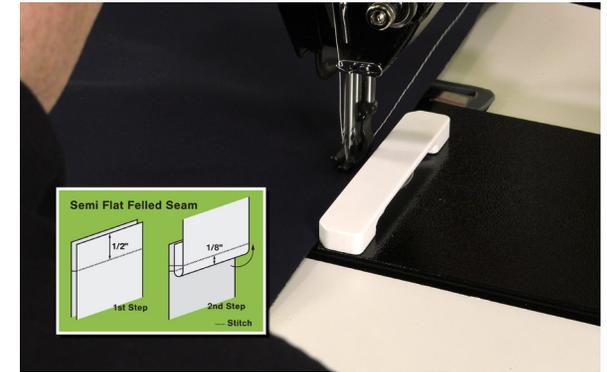


Figure 57



Figure 55



Figure 58



Figure 56

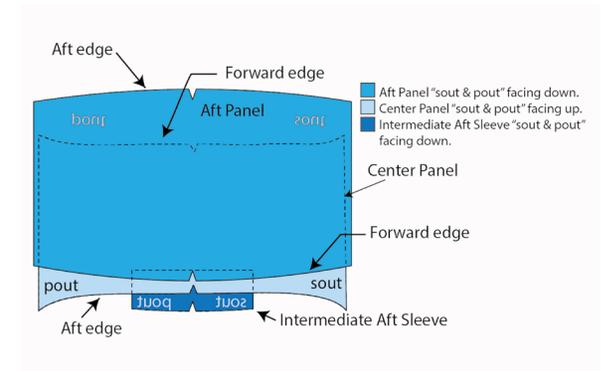


Figure 59



Figure 60

### Step 17 (Optional):

#### Prepping for a Backstay Slit

If not adding a backstay slit to your bimini, proceed to the next step.

At this time on the aft panel, mark short lines 2 inches away from each side of the backstay slit line previously done in step 10. Notch the fabric 1/4 inch at all three marks with a hotknife (**Figure 60**).

The aft sleeve needs to be cut to accommodate the backstay slit. Place the aft sleeve on top of the aft panel, aligning the 1/4-inch center notches. Transfer the notches on either side of the backstay slit depth measurement to the sleeve; draw lines through the sleeve parallel to the centerline of the aft panel. Cut out this 4-inch-wide section of the aft sleeve using a hotknife. Sew binding on the cut ends of the now two-part sleeve. If there is more than one backstay slit, repeat this process.

The extra materials needed for installing a backstay slit, including a zipper, zipper slider and vinyl material, are not included in the 4-Bow Bimini Skin Kit.

### Step 18:

#### Basting & Sewing Zippers to the Sleeves

Secure two finished (jacket style with starting boxes) zippers along the bound edges of the forward and aft bow sleeves with basting tape. Sailrite recommends two zippers on each sleeve so the cover can be zipped in place from the center to each side. Baste the zippers to the side of the sleeves with the "POUT" and "SOUT" markings. Leave at least a 2-inch gap between the zippers in the center of the sleeve (**Figure 61**). Or, if there is a backstay slit(s) start and end each zipper at the edge of the sleeve segments. If there will be two backstay slits, an additional zipper will be needed to close the center segment of the sleeve (i.e. a three-part sleeve will be required, each with a zipper).

The zippers will be too long, but wait to cut them down. The zippers will attach to the OUT side of the sleeves right under the binding. If the zippers have a single pull tab (a tab on just one side), be careful to install the tapes so that the zipper pull tab is up against the bound edge. If the zipper has a double pull tab, the unnecessary zipper pull tab can easily be removed after the zipper is installed.

Start each zipper (starter box end) at the middle of the sleeve and work outward. Remember to leave about a 2-inch gap between the zippers if there is no backstay slit(s). It is recommended to sew the side with the starting box to the sleeve. Sew the zipper tapes to the sleeves with a row of straight stitches (**Figure 62**). Secure the ends of the stitching by reverse stitching a few times.



Figure 61



Figure 62

**Step 19:****Preparing the Tails & Attaching Them With the Sleeves**

Previously, the cover fabric was measured and cut to install either tuck back tails or hang down tails. Find those cut pieces and proceed with whichever tail instructions are needed as follows:

To prepare a tuck back tail, fasten two identical tail pieces together, one on top of the other, with basting tape along the convex and concave edges (**Figure 63**). Sewing is not necessary at this time.

To prepare a hang down tail, find the 6-inch-wide piece folded in half in step 12 and apply basting tape to one outside edge and just inside the crease line (**Figure 64**). Baste the tail halves together, creating a doubled, 3-inch-wide piece. The edge opposite the folded edge will be the side seamed to the panel; place a 1/4-inch notch in the center of the sleeve's raw edge.

The sleeves and the tails will attach to the OUT side of the cover assembly. Apply basting tape all along the OUT side of the bimini at the appropriate end. Always start the attachment process by lining up the center notches and smoothing the tails and sleeves to the sides (**Figure 65**).

Depending on the tail style, the stack will be slightly different (always tail first then sleeve):

Place any tuck back tails over the OUT side of the cover with its OUT side up, matching the "POUT" and "SOUT" markings. The convex curves of the tail and the cover should match up. Baste the curves together, starting at the center notch and working to each side.

Place any hang down tails over the OUT side of the cover with the non-folded edge of the tail matched to the raw edge of the convex curve of the cover. Baste the pieces together, starting at the center notch and working to each side (**Figure 66**).

**Figure 63****Figure 65****Figure 64****Figure 66**

Apply basting tape on the IN side of the convex sleeve edges. Put the sleeves over the assembly with the OUT side up, matching “POUT” and “SOUT” markings. Smooth the sleeves in place from the center out so that the convex curves are aligned with the convex curves of the cover panel and tail assemblies. Position the aft sleeve segments as previously marked around the backstay slits (at the 2-inch line previously marked), if present. Use basting tape to hold everything in place. The tail edges should overlap the cover by an inch or more on each side (**Figure 67**). Do not cut them away at this time. Remove any exposed basting tape.



**Figure 67**

Place a row of straight stitches 1/2 inch from the edge of these assemblies along the fore and aft edges of the bimini to secure all layers together (**Figure 68**).

Unfold the sleeves and the tails to sew the second step of the semi flat felled seam. Push the seam allowance over onto the panel side of the assembly and run a straight topstitch about 1/8 inch from the seam on the panel side (**Figure 69**). The needle will penetrate the bimini panel and the seam allowance (not the sleeves or the tails except for what is part of the seam allowance). Complete these steps for both outer sleeves (primary and secondary bows).



**Figure 68**



**Figure 69**

## Step 20:

### Attaching the Facing Strips

Locate the facing strips that were cut in a previous step. If the skirt was raised at the intermediate bow position, it will be necessary to have a cut in the facing strip to allow for the change in angle to keep the reinforcement strip flat. Run basting tape along a long inside edge. Peel off the transfer paper from one edge and fold that edge over to form a 1/2-inch hem (**Figure 70**).

Then run a new strip of basting tape over the top of the hem and another strip of basting tape along the other long edge on the same side. Since the bimini top has three panels, you will need to cut the facing strip where it meets the panel seams at the fore and aft ends of each panel so the strips conform to the shape of the top. Trace the seam lines with a soapstone pencil and trim just outside the lines with a hotknife (**Figures 71 and 72**). This will create three facing strips for each side of the bimini top.

Peel off the transfer paper on both strips of tape, revealing the glue, and baste the facing's unhemmed side in place so that it is flush along the bottom edge of the bimini skirts; the 1/2-inch hem is facing toward the bulk of the bimini top. Then tuck the ends of the strips just under the seams while basting the facing strips in place (**Figure 73**).

Sew the assembly together with straight stitches along the hemmed (inner) edge (**Figure 74**). Keep a constant distance from the skirt edge since the stitches will show. The raw edges along the skirt will be finished with binding in a later step. Repeat this process for the second facing strip.



Figure 70



Figure 73



Figure 71



Figure 74

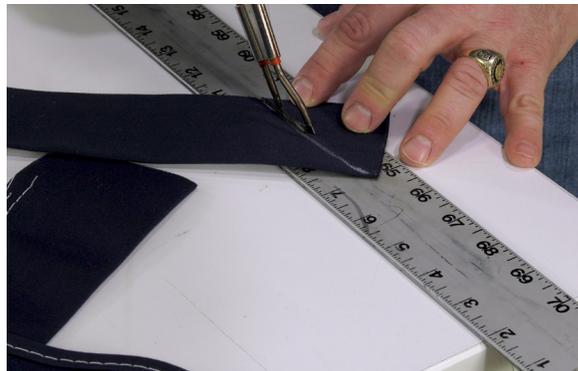


Figure 72

## Step 21:

### Attaching the Forward & Aft Sleeve Zippers to the Top

Join all the zipper halves together on the sleeves, if not done already, and turn the bimini so OUT is down. Flip the sleeves and the tails over onto the IN side of the cover. The OUT side of the sleeves will be against the IN side of the cover. Smooth the sleeves and tails as flat as possible. Place lines along the edges and corners of the zipper tapes on the cover with chalk or a soapstone pencil, indicating the starting point for sewing the zipper to the top (**Figure 75**).

Unfold the sleeve and measure from the topstitch to the marked line and corners (this measurement is taken in a manner to be roughly parallel with the side edges of the bimini top). The measurement should be about 6-1/2 inches. Continue measuring from the topstitch all along the curved portion of the seam, marking dots using the measurement. Do so on an interval of every inch or so (**Figure 76**).

Connect the dots with a curve to finish out the reference line for the zipper attachment to the bimini. Use this line to accurately baste the zipper tapes to the panels. At the curved area, allow the zipper flange to gather a bit around the curve. Distribute the wrinkles in the flange evenly along the curve. It might be helpful to pin the zipper flange at the skirt edge to keep it in place while basting the flange around the curve. Use a ruler to apply firm pressure and flatten the zipper down as firmly as possible for a secure hold (**Figure 77**).

Secure the sleeve zippers to the cover top with a neat single row of straight stitches, stopping at the skirt edge stitch line. Take care when sewing around the zipper curve; it will be necessary to hold the flange down while sewing (**Figure 78**), even with the zipper basted in place. This stitch line will show on the cover top. Reverse stitch at the beginning and end of the zipper flange to lock the stitches. Notice that the sleeves will lie flat in the straight sleeve area but will have shape at the outboard curved ends. This approach keeps the zipper stitch from pulling tight on the corners and creating hard spots in the bimini top.

To shorten the zippers, first mark the tape at the end that is last to close, adjacent to the end of the sleeve. Next, unzip the zipper just enough to have the slider inside the mark made and cut the excess zipper off with scissors. Seal the cut zipper end by passing the hotknife tip over it. Using pliers,

press stainless steel zipper stops over the next-to-last tooth or last tooth in each cut tape to keep the zipper pull from coming off (**Figure 79**).



Figure 77

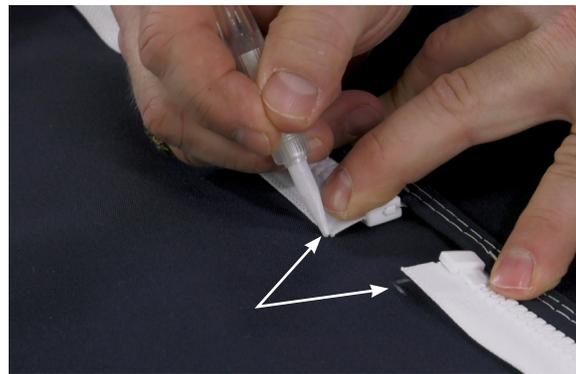


Figure 75



Figure 78

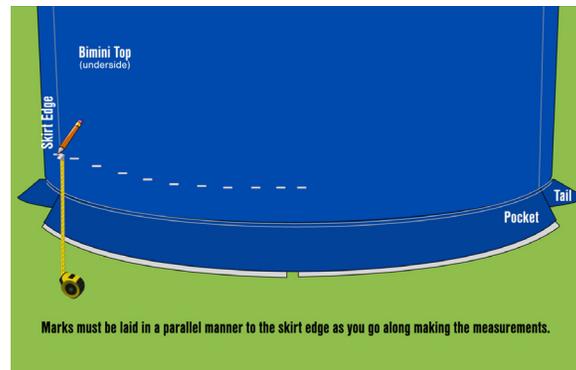


Figure 76



Figure 79

## Step 22:

### Attaching the Intermediate Sleeve Zipper to the Top

Fold the sleeve back onto the aft panel. Hold it flat and mark the aft panel at the zipper tape edge corners. Measure approximately 1 inch forward of those corner marks and mark the corners again (**Figure 80**).

Using a straightedge, mark a line down on the IN side of the aft panel to guide the basting and sewing of the zipper tape. The 1 inch of slack in the sleeve provides room for the intermediate bow without causing a dip in the cover. Sew the zipper down to the cover with a row of straight stitches, locking the stitch ends (**Figure 81**). Repeat process for second intermediate sleeve, folding it to the forward panel.

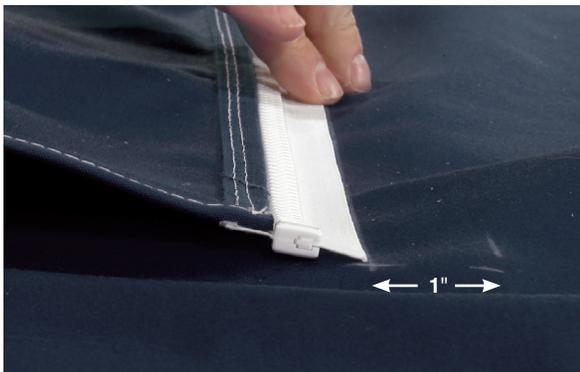


Figure 80



Figure 81

## Step 23 (Optional):

### Installing a Slit for the Backstay(s)

If the bimini top does not include a backstay(s), proceed to the next step.

Cut a reinforcement patch from marine vinyl cover cloth that is 3 inches wide and long enough to reach from 4 inches forward of the backstay exit mark all the way to the aft edge of the cover and down to the bottom of the tail, plus an additional 2 inches. Mark the lengthwise center on the dull side of the patch with a grease marking pencil (**Figure 82**). Also mark a stop point 2 inches from the inner end.

On the aft panel, locate the “backstay slit” line, and the previously marked backstay exit, and extend it by 4 inches; mark this new end point as the “stop point.” Transfer the stop point mark from the OUT side to the IN side of the fabric by pushing a small pin through the material. Mark the pin location on the underside of the bimini top with a soapstone pencil; the pin can now be removed. Use a straightedge to strike a line from the aft edge of the panel extending past the pin location mark a few inches. The line should be centered in the sleeve opening created earlier at the aft bimini edge. This straight line will align with the centerline drawn on the vinyl patch. Apply basting tape to both long edges on the shiny side of the vinyl patch (the opposite side of the marked centerline). Baste the patch to the inner side of the panel so the marked centerline on the vinyl is visible, starting the patch at the edge of the tail. Sew rows of straight stitches adjacent to and outside the marked line about 1/8 inch, starting from the very back edge of the tail (**Figure 83**). It is helpful to draw a 1/8-inch line on either side of the centerline to use as a guide for sewing.



Figure 82



Figure 83

Stop each stitch at the 2-inch stop point. Keep the stitches as straight as possible, locking the stitching with a few reverses at each end. Next, sew across the inner stop point, reversing the machine stitching several times, effectively closing the gap between the previous stitches (**Figure 84**).

For the zipper plaque, cut a 6-inch-wide rectangle from scrap bimini top fabric that is the length of the backstay slit measurement (this is inclusive of the tail and the 4-inch allowance beyond the backstay position) plus 3-1/2 inches. Mark a line across the width 2-1/2 inches from one end and 1 inch from the other. Fold the rectangle in half lengthwise so that the lines are on the outside and crease it well with a ruler or straightedge. Sew a straight stitch 3/4 inch away from the folded edge from end to end. Make this stitch as straight as possible using a seaming guide on the sewing machine, if available. At the 2-1/2-inch line, sew past the line approximately 1 inch and reverse sew across that 1 inch two times; continue sewing to the end of the strip. Don't reverse stitch at the beginning or end of the strip.

Next, cut along the fold carefully and then splay the assembly out as flat as possible using a ruler or the edge of a table (**Figure 85**).

Apply basting tape to both tape zipper flanges of a finished zipper that is long enough to match or exceed the length of the backstay slit (basting tape goes on the side without the zipper pull tab). Cut the end of the zipper off that closes last and slide the pull completely off the zipper. Stick the zipper down over the splayed assembly with the zipper starter box at the 1-inch mark. The zipper should end 1/2 inch past the 2-1/2-inch line; cut away the excess zipper length accordingly. Sew both sides of the zipper flange, starting the stitch from either end of the fabric and continuing all the way to the opposite end (**Figure 86**). It is recommended to reverse the sewn stitching a few times at the zipper starter box region of these stitch lines to reinforce that area, as well as at the end of the fabric strip as usual.

Flip the assembly over so the zipper is down and rip the stitches concealing the zipper teeth with a seam ripper; stop at the 2-1/2-inch mark (**Figure 87**). The ripped stitches can be removed easily by hand.



Figure 84



Figure 86



Figure 85

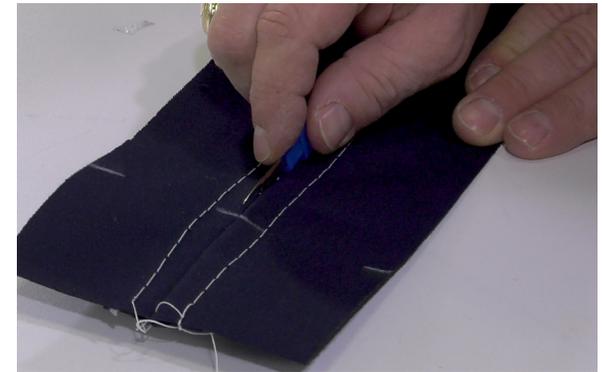


Figure 87

Separate the zipper by sliding your finger underneath and pulling it apart from the cut end. Slide the zipper pull back onto the side of the zipper tape that ends with the starter box. Make sure the pull tab is on the side where the zipper tape flange is visible. Close the zipper within about 1 inch of the end. Thread a second slider onto the open teeth in the reverse direction.

Now it will be possible to slide both sliders together to the center of the zipper and the only gap in the zipper teeth will be between the two sliders (**Figure 88**). Flip the assembly and apply basting tape to this side of the assembly along the long edges. Create a hem along both long edges, folding the hems to the zipper side so that the end result is a finished strip 3 inches in width (**Figure 89**).

Finish the end of the assembly (with the mark at 2-1/2 inches) by folding the edge and creating it so the cut end meets the 2-1/2-inch line. Fold and baste the hem down using two rows of basting tape on the assembly side with the zipper flanges visible (**Figure 90**). Sew across the end of the zipper from stitch line to stitch line to seal it shut (you are sewing through both layers of fabric and the end of the zipper); be careful while sewing across the zipper teeth. Reverse stitch twice to secure and lock the zipper in place (**Figure 91**).



Figure 88



Figure 90



Figure 89



Figure 91



Figure 92



Figure 93



Figure 94

Apply basting tape to the two long edges with the zipper pulls and flanges facing up. Stick the assembly on top of the OUT side of the bimini top so that it is over the reinforcement patch on the IN side with the unfinished end aligned with the outer tail edge (Figure 92). It might be helpful to feel for the corners of the IN side reinforcement patch and trace the corners and inside edge with a soapstone pencil or chalk to act as a guideline when positioning the outer patch. Position the zipper pulls so one is lying forward and the other back to prevent extra bulk at that location. Sew around the two long edges and the inside short edge 1/8 inch in from the edge, securing the zipper plaque assembly and the reinforcement patch (Figure 93).

Using scissors, slit the vinyl patch and the bimini top fabric along the centerline that should still be visible on the reinforcement patch (Figure 94). DO NOT cut through the stitches along the sides of the line or through the zipper. Stop slitting at the inboard end where the stitching was done to secure the hem. Finally, use a hotknife to carefully trim any raveling fabric edges. The hotknife may melt the vinyl slightly; that is OK.

Repeat this process for any additional backstay slits.



Figure 95 shows the completed backstay slits.

## Step 24:

### Trimming the Tails/Sides & Binding the Bimini Perimeter

Starting with trimming the tails, align a ruler with the side edge of the bimini top and trace the extra tail fabric line with a soapstone pencil. Next, use a can or cup to trace a rounded edge to create a gradual corner instead of a 90-degree corner (**Figure 96**). This will make it easier to bind around the perimeter of the bimini. Trim away the rounded edge with a hotknife (**Figure 97**).

Look over the bimini top and use a hotknife to make any other necessary trimming; smooth and seamless trims will make the binding easier to apply and will ensure a more professional-looking and visually pleasing binding. Before starting a long, continuous sewing like a binding, it is a good idea to make sure your bobbin is full to ensure seamless and professional-looking stitching.

Begin the perimeter binding at the backstay slit or in the middle of the aft end. Use a Sailrite 1" Swing-Away Straight Binder to make sewing a 1-inch binding quick, easy and accurate (**Figure 98**). Trim away any excess binding and use a hotknife to seal the edges and prevent raveling. The binding ends should be trimmed with a hotknife on either side of the backstay slit. If there is no backstay slit, overlap the binding by about 1 inch and sew closed to terminate.



Figure 96



Figure 97



Figure 98

## Step 25:

### Rivet Strap Eyes to the Frame Tubing

Strap eyes are the mounting points for the webbing straps, which tension the bimini top on the frame. Remove the center webbing tension strap, if not already done, and the strapping tape from the bows before beginning the installation process. Strap eyes are installed on both sides of the two outer bows, facing the front and back of the boat. Install strap eyes approximately 2 inches below the bottom of the skirting; mark that position on the center of the frame tubing with a permanent marker. Make sure to wear protective eyewear during drilling and riveting.

Use a Drill Steady Tubing Tool to keep the drill steady while drilling the starter hole. Lubricate the drill bit with drilling fluid to reduce friction, heat and wear on the bit. With a 1/8-inch drill bit, drill the starter hole (**Figure 99**). Once the hole is drilled, remove the Drill Steady Tubing Tool and enlarge the hole with a #20 drill bit. Place a strap eye on the hole and insert a rivet. Next, adhere masking tape on the tube underneath the second strap eye hole and mark the next drill location with the permanent marker, keeping the strap eye centered on the tube frame (**Figure 100**). Remove the strap eye and repeat the drilling process for the other end of the strap eye.

Measure twice to ensure successful drilling and installing. Once the rivets are installed, it is very difficult to remove them if the measurements are off. Rivets are a better choice than screws to secure strap eyes because rivets create no raised surface on the strap eyes, unlike screws. This will create a smooth surface and prevent ropes and straps from rubbing against a screw head, which could lead to the fraying or snagging of ropes and straps. Once both the holes are drilled, fasten the strap eye to your frame tubing using a rivet and rivet tool (**Figure 101**). Repeat the drilling and riveting process to install a total of four strap eyes to both sides of the outer frame tubes (primary and secondary bows).



Figure 99



Figure 100



Figure 101

## Step 26:

### Fit the Bimini Skin to the Frame

At this point, assemble the bimini top to the frame and see how it fits. Zip the sleeves closed on the bows, and then open the frame up to its full spread. Use the dots you marked on the frames for the skirt length as reference points to adjust the top on the frame so it sits evenly and straight.

## Step 27:

### Creating the Fore & Aft Support Straps

*Note: Although the photos in this step show black webbing straps, the straps that come standard in Bimini Skin Kits are white.*

The adjustable webbing straps are what will hook the bimini frame to the boat via the strap eyes to keep the frame taut and correctly tensioned. Three pieces of 1-inch webbing are needed for each strap. To measure the strap length, fully open the bimini frame, with top installed, and measure the distance from each frame's strap eye to the boat's desired connection spot (**Figure 102**). Sailrite Frame Kits include strap eyes for the boat. Use filament strapping tape to secure the frame to the boat in place of the webbing strap. This is an easy and convenient way to measure the length of the strap required. Use a hotknife to cut the three lengths of webbing strap. Cut a 6-inch length, a 10-inch length and the length from strap eye to the boat connection spot. A hotknife makes for easy cutting and keeps the ends from raveling.

Sew a tab for the webbing slider using the 6-inch piece of webbing strap. Apply basting tape to the bottom two inches on both sides of the same strap end. Thread the strap through the wider side of the webbing slider, keeping the buckle of the slider facing up. Remove the transfer paper from both sides of the strap, revealing the glue, and fold the untaped end of the strap all the way over and around to the other side. The untaped strap end should hit close to the webbing slider, creating three layers of webbing strap with the taped end of the strap as the middle layer (**Figure 103**).

Next, sew a box-X stitch to secure the folded strap and keep the webbing slider secure and in place. A box-X stitch is a very secure stitch for webbing; it can hold a lot of stress and tension. To sew a box-X stitch, sew around all four sides of the strap (creating a box shape) and then sew two diagonal lines from corner to corner, creating an "X" shape. Once the box-X stitch is complete, reverse sew to lock the stitch in place (**Figure 104**). Remove any basting tape that is visible. Use a hotknife to melt your snipped threads after sewing. This will lock your threads in place and prevent them from fraying. Be very careful not to melt the other stitches or webbing when using the hotknife.



**Figure 102**



**Figure 104**



**Figure 103**

Next, secure a Fast Eye Snap Hook to the webbing slider just created using the 10-inch webbing strap. The process is very similar to the 6-inch strap, with the end result being the Fast Eye Snap Hook on one end of the strap and the webbing slider strap on the other end.

Using the 10-inch length of webbing strap, apply basting tape to the bottom 2 inches on both sides of the strap. Thread a Fast Eye Snap Hook, hook side down, through the untaped end of the strap and through the open end of the webbing slider, going from the top of the slider (buckle facing up) down through the slider (**Figure 105**). Fold the strap over to the underside of the taped strap end (**Figure 106**) to create the same folded-over strap construction, but longer, for this piece as for the webbing slider piece. Remove the transfer paper from both sides of the strap, revealing the glue, and sandwich the taped end between the untaped end of the 10-inch strap that is looped through the webbing slider, and the main strap body, creating three layers of webbing strap with the taped end of the strap as the middle layer (**Figure 107**).

Sew another box-X stitch through those three layers of strap as with the 6-inch strap. Sew straight stitches on the other end of the strap, reverse stitching twice, just inside the snap hook to keep the hook in place and the strap extended to full length (**Figure 108**). After sewing, remove any visible basting tape.



Figure 105



Figure 107



Figure 106



Figure 108

The last strap to sew is the adjustable leg strap; again, this should equal the approximate length of your desired webbing strap. Place a small piece of basting tape across one end of the strap on one side, thread the taped end through either side of the YKK Loop Loc, and adhere to the underside of the strap approximately 1 inch down from the Loop Loc. Straight stitch across to secure the Loop Loc in place (**Figure 109**).



Figure 109

With stitched portion of longest strap facing down, thread the other end of the longest strap up through the tab end (buckle facing up) of the webbing slider and back down through the buckle (**Figure 110**). Pull the strap down far enough to loop the longest strap back through the other end of the Loop Loc (**Figure 111**). This will create two layers of strap between the webbing slider and the Loop Loc. The strap should lie flat and not be twisted anywhere.



Figure 111

Take a second Fast Eye Snap Hook and thread it, hook side down, through the end of the longest strap. Apply basting tape to the bottom 2 inches of one side of the strap to adhere the strap layers together and keep the hook in place (**Figure 112**). Sew one more box-X stitch to secure the hook in place, then remove any visible basting tape from the strap. The hooks should face the same direction when the strap is complete with the webbing strap lying flat and untwisted.

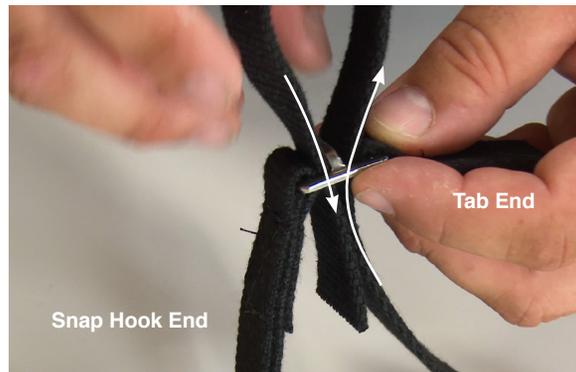


Figure 110



Figure 112

**Step 28:****Installing the Frame on the Boat**

If you built your frame and bimini top on a wooden platform, remove the frame from the platform and install it on the boat using the desired mounting hardware. If using the included Universal Deck Hinges you will need to remove them from the wooden platform. Make sure to properly bed and secure these fittings to the boat. Unzip the top from the frame before moving the frame to the boat. Also remove the four corner strap eyes from the platform and install them on the boat for the corner straps, as needed.

Once the frame is attached to the boat, zip the top back onto the frame and situate the top around the backstay (if any); zip the backstay slit closed around the backstay once in place. Adjust the top to position it evenly athwartship; connect the corner straps to the frame and tension the straps firmly to level the bimini top.

**Step 29 (Optional):****Alternative Support Systems**

Instead of using strap eyes to secure webbing support straps, secure them to stanchions or stern rails with attachment loops (these materials are not included in the 4-Bow Bimini Frame Kit). Cut a 12-inch piece of webbing and pass one end of the strap through a D ring. Place a twist in the webbing and sew it down to itself. Loop the strap around the stern rail and snap the support strap snap hook to the D ring (**Figure 113**).

Another popular alternative is the use of rigid support struts (these materials are not included in the 4-Bow Bimini Frame Kit). Rigid supports increase the strength of the frame but sacrifice the convenience of quick collapse and storage capability. Sailrite offers Rigid Support Struts in Standard and Premium kits. The Premium kits include Universal Deck Hinges instead of the fixed style, and Hinged Jaw Slides instead of the closed style (**Figure 114**).

**Figure 113****Figure 114****Step 30 (Optional):****Window Installation**

There are no rules regarding the proper size or placement of a window in a bimini. The primary function of a bimini is to provide shade, so make the window just large enough to check the trim of the main.

Windows can be placed squarely over seams, but avoid contact with the metal bimini frame as it can cause cracking or scorching when hot. If such exposure cannot be avoided, wrap the metal with something like Boat Blanket Fabric to insulate the window material.

Start by cutting the vinyl window material to the desired shape. Place strips of double-sided basting tape around the edges of the window and smooth it in place over the OUT side of the bimini (do not cut out the fabric yet). Sew around the perimeter of the window with a straight stitch.

Do not sew all the way around the window in one pass. Roll up the bimini and sew down one side at a time, sewing parallel sides consecutively. Always start and finish with a short reverse stitch (or bar tack). This technique makes it easier to keep the window from breaking loose from its basted position.

Carefully cut out the acrylic bimini fabric underneath the sewn window using a seam ripper or scissors. Leave 1 inch of cloth inside the row of stitches so a 1/2-inch hem can be folded under. Cut easing slits at the corners as necessary to allow accurate folds. Finish sewing the window with a second row of straight stitches 1/8 inch inside the hemmed fabric.

**Step 31 (Optional):****Zipper Attachment**

Provide additional protection from the elements by adding optional zippered side curtains or a dodger bridge panel. Attach a zipper to the inside of the facing on the bimini skirt or under the tail on the forward and aft ends.

**Step 32 (Optional):****Rail Mounting**

Sometimes it's best to mount a bimini to the top of a pushpit railing. In these situations, the Universal Deck Hinges should be set aside and a Concave Mount Plate or a Hinged Jaw Slide can be used. Order the required fittings from Sailrite.com after confirming the diameter of the tubing railing.