



# Gemini Marine Canvas & Marine Products

*Custom canvas • DrillSteady • Gemlock struts & hinges*

Simply elegant. Simply effective. Simply better.

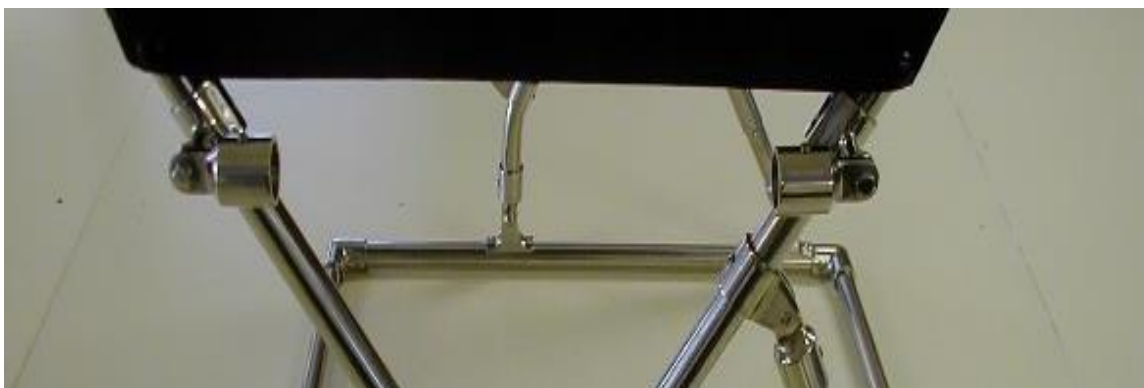
## Strapless bimini conversion guide

### Materials required:

- 2 x assembled Gemlock struts (buy complete or build your own using our assembly guide)
- 4 x Gemini side (sliding or split jaw) mounts in the size that fits your frame tubing
- 4 x eye ends in size to fit your strut tubing
- Masking tape
- 2 x pieces of line, strap or string equal to length of struts
- Permanent marker
- Tubing cutter, 1/8" Allen wrench/key, Phillips head screwdriver

### To begin

Struts can be placed inboard or outboard of the frame. Place the struts as high on the frame as possible for the most powerful leverage, easiest deployment and best tensioning of your bimini. Remember that the struts can double up as safe, sturdy grab rails when making this decision.



### Step 1 – Setting up the frame for strut installation

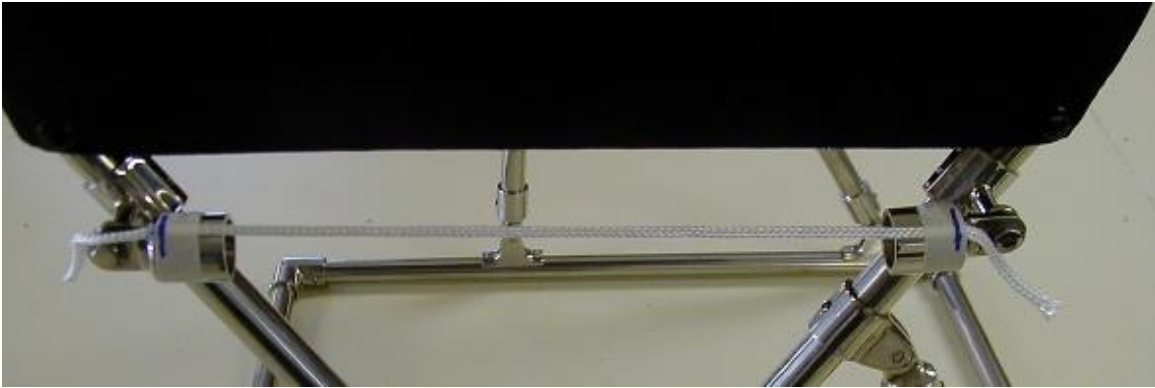
Set up the bimini frame and tension the canvas (using straps, line, etc) in the open position. Position the four side mounts (forward/aft and port/starboard), usually parallel to the fabric edge, at the level determined for the strut. Secure the side mounts in place using an Allen wrench/key in the set screws provided. Install an eye end to the post on each side mount, turn them to face each other as shown above and secure in place with a Phillips head screwdriver.

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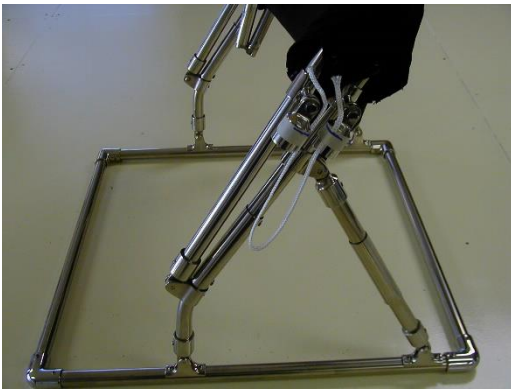
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## Step 2 – Measuring strut length

Tape a length of string, line or tape firmly to the eye ends. Use a marker to mark each end of the line at the base of the eye end where the tubing will end in the socket as shown above.

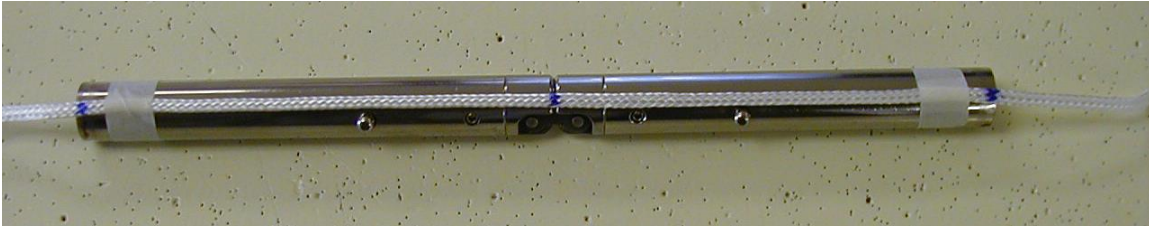
**IMPORTANT:** *Mark port/starboard sides and forward/aft ends and leave marking line taped in place.*



## Step 3 – Finding hinge center placement

To find the correct position for the center of the hinge in the strut, fold the frame back onto its aft legs *without removing taped string*. For boats with a backstay passing through the bimini fabric, fold all bimini frames up to the backstay and secure. Pull the slack patterning line down alongside the folded frame and use a marker to mark the very bottom.

**IMPORTANT:** *Incorrect hinge placement will result in a folded strut that binds up or folds out of position.*



#### Step 4 – Cutting struts

Remove the patterning strings and tape from the eye ends and place each one on a fully extended strut with the hinge mark from Step 3 at the center of the hinge.

**IMPORTANT:** *Ensure you note or mark port/starboard and forward/aft ends of the strut from Step 2.*

Mark the strut tubing at the same place as the end marks on the string. Cut the tubing at the marks with a tubing cutter.



#### Step 5 – Install struts

Install struts into the eye ends in their correct port/starboard forward/aft positions ensuring that the hinge will fold up into a V shape (the link in the hinges should face up) and securing in place using an Allen wrench/key in the set screws provided. Tension the frame by unfolding the struts up into full extension and sliding the locking sleeve over the hinge between the two springballs to secure the joint.

Sliding the side mounts downward on the frame legs can make limited adjustment to the tension but moving them too far will affect the storage position of the folded struts.

**Congratulations, you have a strapless bimini.**

The images above used a model bimini. Below are key parts of the process on a real bimini.



## Step 2 – Measuring strut length

This job used a spare piece of tubing to tension the frame rather than straps. It also used the tape itself as the measuring device rather than a piece of string. Note the marks for the eye ends on the tape.



## Step 3 – Finding hinge center placement

Screwdriver shows correct place to mark tape/string for centering on the strut hinge.





#### **Step 4 – Cutting struts**

Center measuring tape/string on the strut hinge, mark the ends of the strut length, cut tubing at length mark, noting part/starboard and fore/aft ends.



### Step 5 – Install struts

Note these struts make grab rails on the outside of the bimini. Struts can equally be place inside the bimini for interior grabs – see below.

