



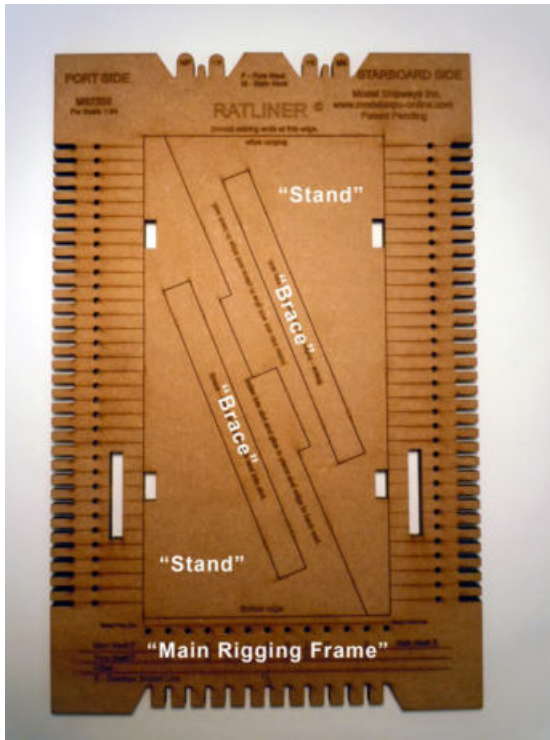
Model Shipways Inc.
www.modelexpo-online.com

RATLINER[®]

Assembly Instructions.

Patent Pending

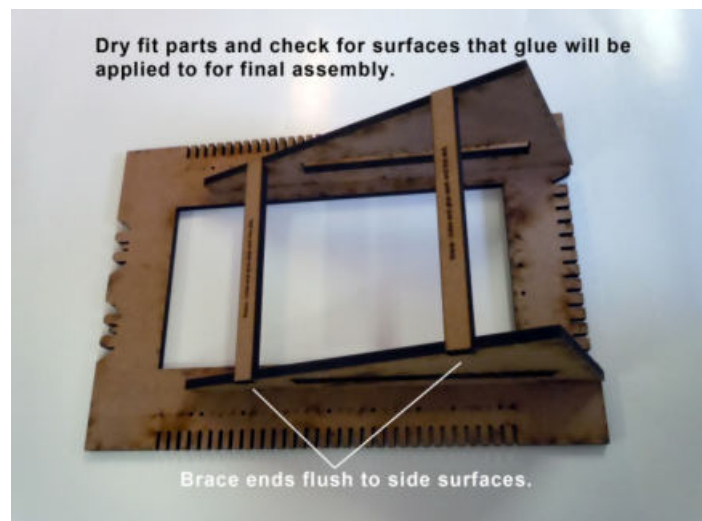
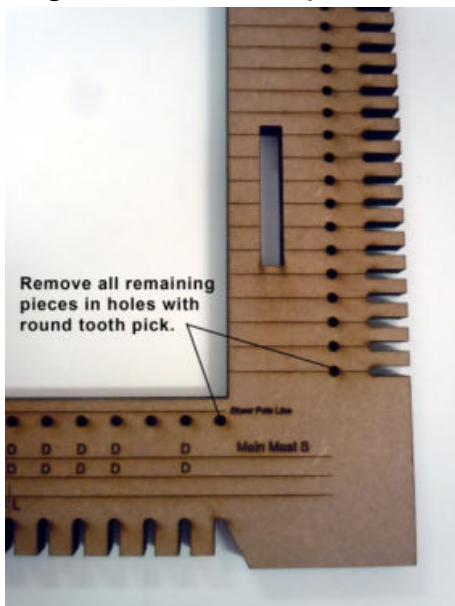
1. Remove center stands and braces from the main rigging frame.
2. The "Stands" and "Braces" should press release from the main rigging frame. If they do not readily release at a certain point very carefully cut loose with a #11 hobby blade.



Tip: Hold RATLINER[®] up to the light to see where to cut loose easier.



- 1.
- 2.
3. Using a round tooth pick to remove the pieces still remaining in small rope holes.



- 3.
- 4.

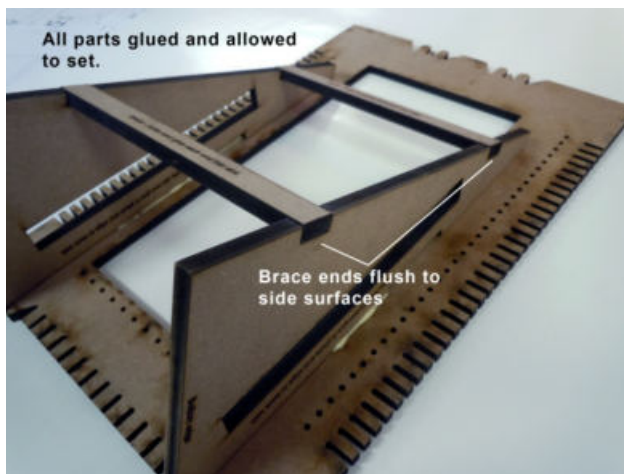
4. Dry fit parts together to understand which surfaces need to be sanded lightly to remove char from contact surfaces to be glued for a stronger joint.
5. Using a Yellow Carpenter's Glue applied to contact surfaces; quickly glue all parts together. Make sure the two braces are flush to the sides of the stand. Set aside to allow glue to set completely. (24 hours)

The **RATLINERS** are available individually, or as a set of three:

MS7201 for Scales 1:76 to 1:90

MS7202 for Scales 1:64

MS7203 for Scales 1:35 to 1:48



5.

RATLINER[®]

How to Use Instructions.

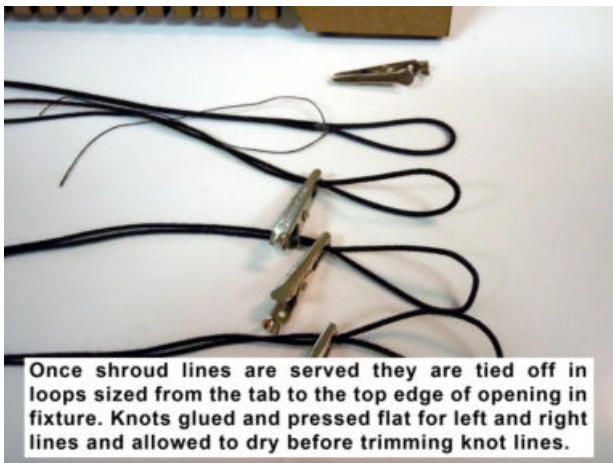
The **RATLINER[®]** fixtures have several key reference points laser cut into the surface worth pointing out. The loop attachments at the top have **PORT SIDE** and **STARBOARD SIDE** along with **FS**, **MS**, **MP** and **FP**. These become your starting points based upon which mast and which side of the ship you will be rigging the ratlines. For the instructional example, the **MS** (**M**ain mast **S**tarboard side) tab will be used. At the bottom is a **Sheer Pole Line**; this is an imaginary movable line based upon the ship being built. This will be the dimension from where the top shroud loops attach to the mast down to the sheer pole just above the deadeyes on the ship plans. This is the line to measure up from for the first ratline location to start by selecting the closest horizontal hole locations on each side. The **D**'s are reference marks for deadeyes for adding the shroud lines. The angle of the shroud lines may vary again based upon the ship plans which will adjust the starting hole for the shroud lines. There is a blank horizontal line at the bottom to which one can add marks for a specialized application. The Centerline is also referenced if needed.

READ BEFORE STARTING: Read and understand the following instructions. Tools needed: Pointed tweezers, Stainless pick, Small sharp scissors; Q-tips; Small alligator clips. Practice tying clove hitches making sure the knot “X” is on top of the shroud.

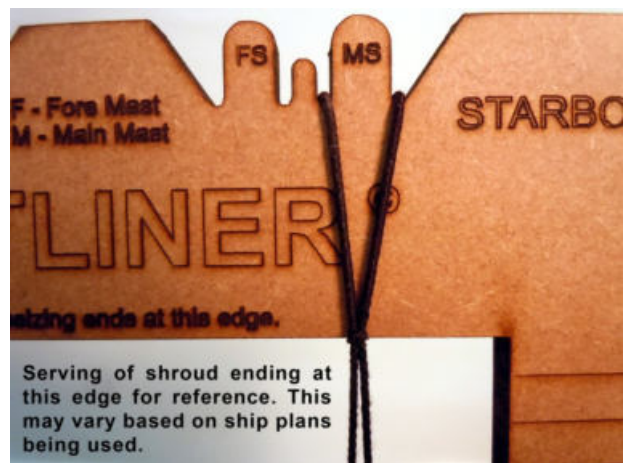
The following instructions are using MS7202, the same applies for other sizes.

Prepare the number of shroud lines based upon the ship plans. For instructional purposes 10 lines will be shown with the forward line being a single line. The single line will have an extended ratline at every fifth line from the sheer pole. This situation happens on some ships but not all.

Once all shroud lines are seized and loops tied off with the knots glued and completely dried add the first set on the **MS** tab. (**Images A & B**) Note that lines are served (3 inches on center) down to the edge of the opening. As shroud loops are added they will rise up due to loop thicknesses; if even serving of lines to the edge is desired, the length of serving must be adjusted for each line as added. (**Image C.**)

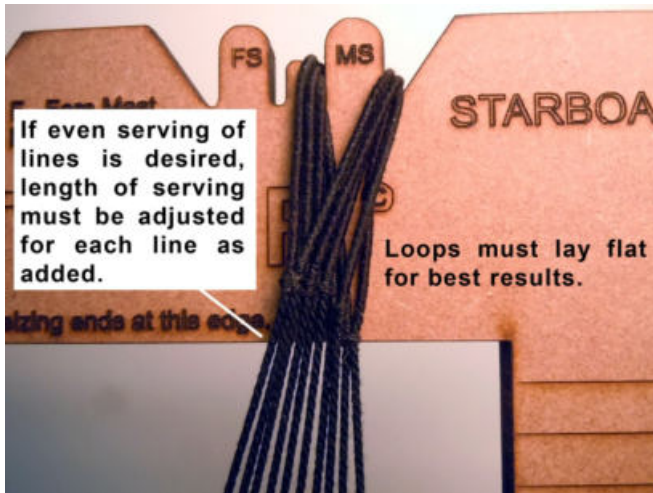


A.

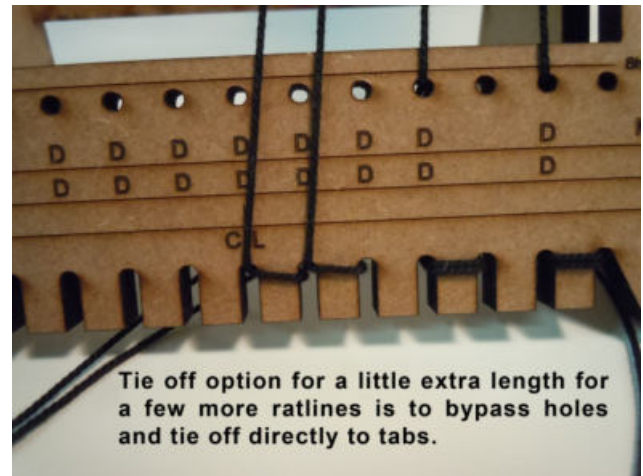


B.

Image D. shows an alternative tie off option if a few more ratlines are needed for a specific application.

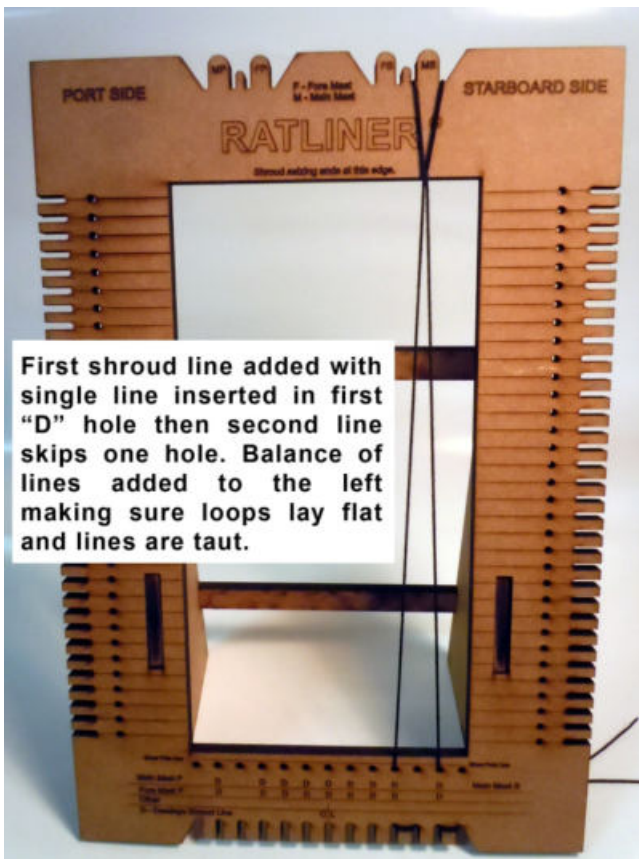


C.



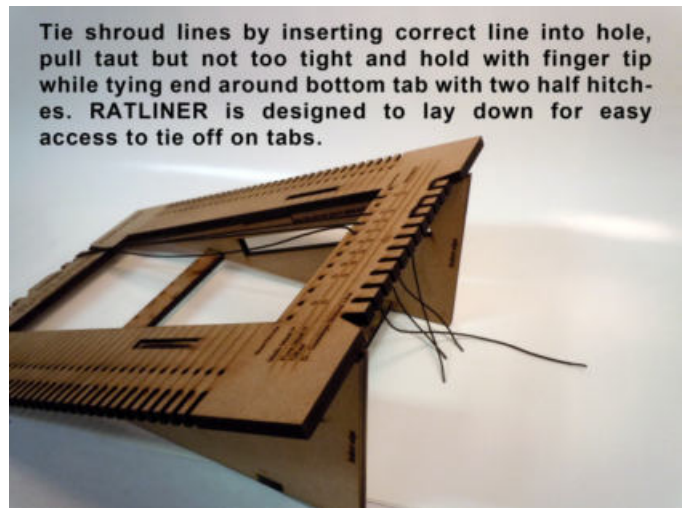
D.

Image E. shows the first shroud line added with the line on the right being the single line that will have ratlines extended to it from the main body.



E.

The RATLINER[®] is designed to lie down for easy access to tie off lines on bottom tabs. Do not over tighten lines; they should be tight but not stretched. Insert the shroud line through the hole and pull gently then press line in hole to hold tight while tying off on tab with two half hitches. (Image F.)



F.



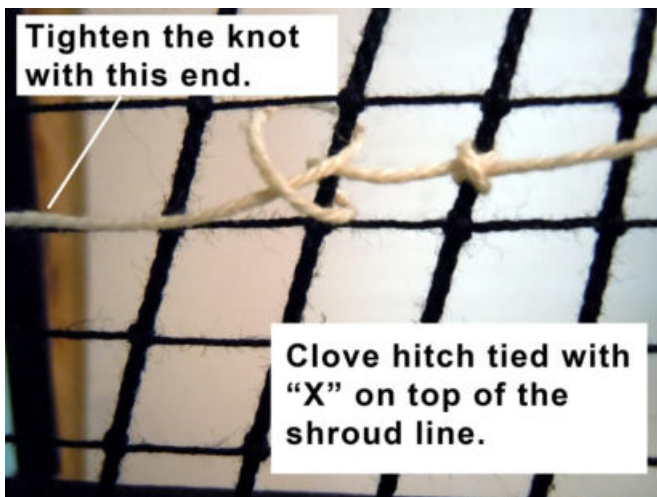
G. Shroud lines in place ready for ratlines.

Image G. shows all the shroud lines in place. Try to have all the lines equally tight and tied secure. The served loops must lay flat on each other progressively from right to left with lines being tied on the correct tab. See Image C.

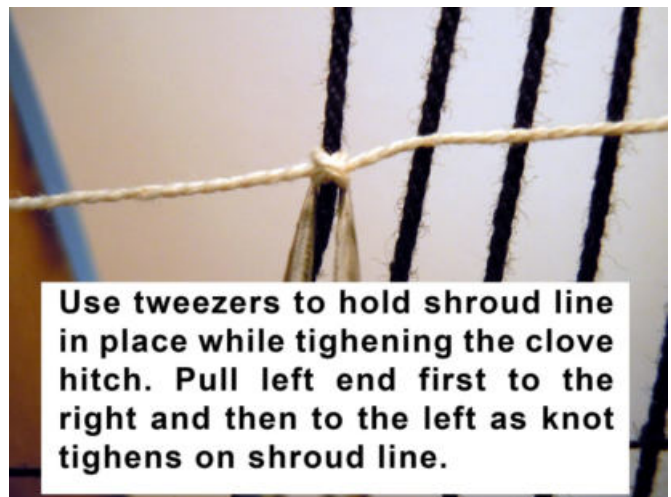
Before starting to tie the ratlines, cut a piece of cardstock 4 3/4" wide x 11" high and tape to the backside top edge in front of the braces as seen in the following images.. This will help immensely when tying the ratline in place.

CLOVE HITCHES

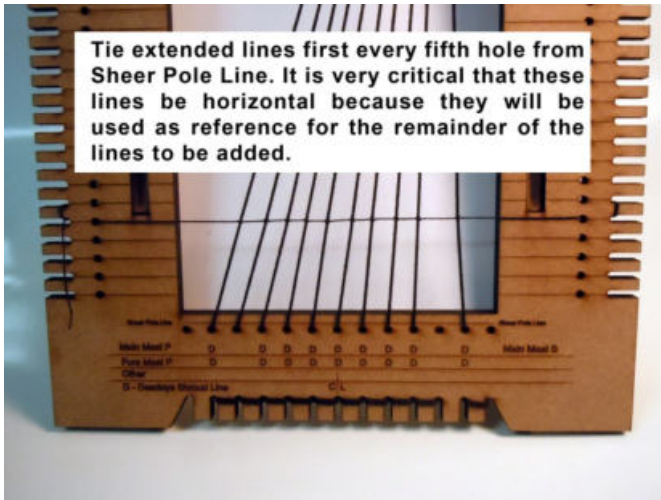
Clove hitches need to be used in tying ratlines to the shroud lines. If right handed tie right to left. Opposite if left handed. **Image H.** shows white line for clarity the proper knot tied with the "X" of the knot on top of the shroud line. Moving to the left insert the line over the next line come up under from the right then back over from the behind again and feed through the formed loop. Pull the line from right to left to tighten while holding the shroud line in place with tweezers. (**Image I.**) When the knot is tight both the shroud line and ratline should be in a relaxed normal position and neither stretched. If adjustment is needed use the tweezers to move the knot up or down on the shroud line. Slight left to right adjustment can be made by gently pulling the end of the ratline or hold the previously tied clove hitch.



H. Clove hitch tied with "X" on top of the shroud line.



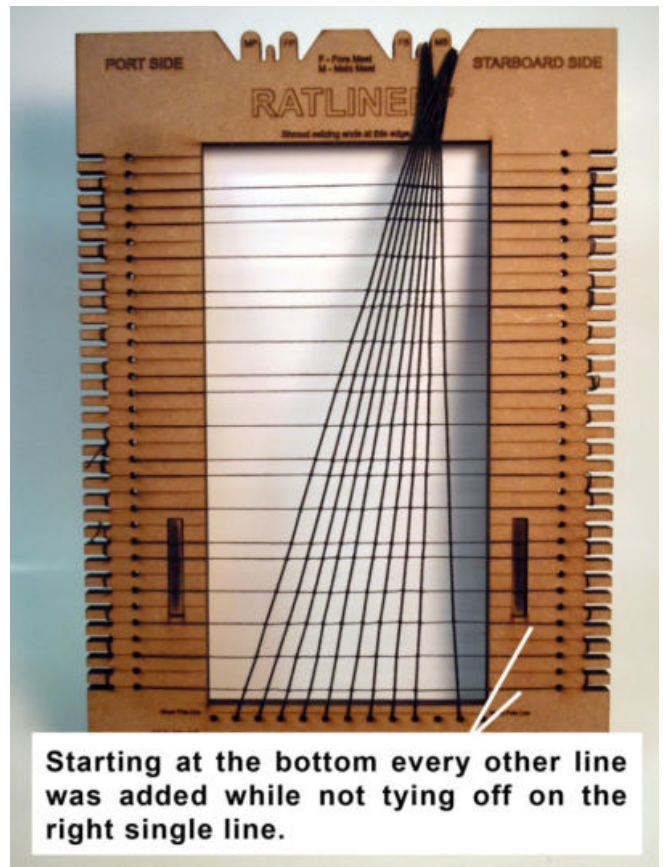
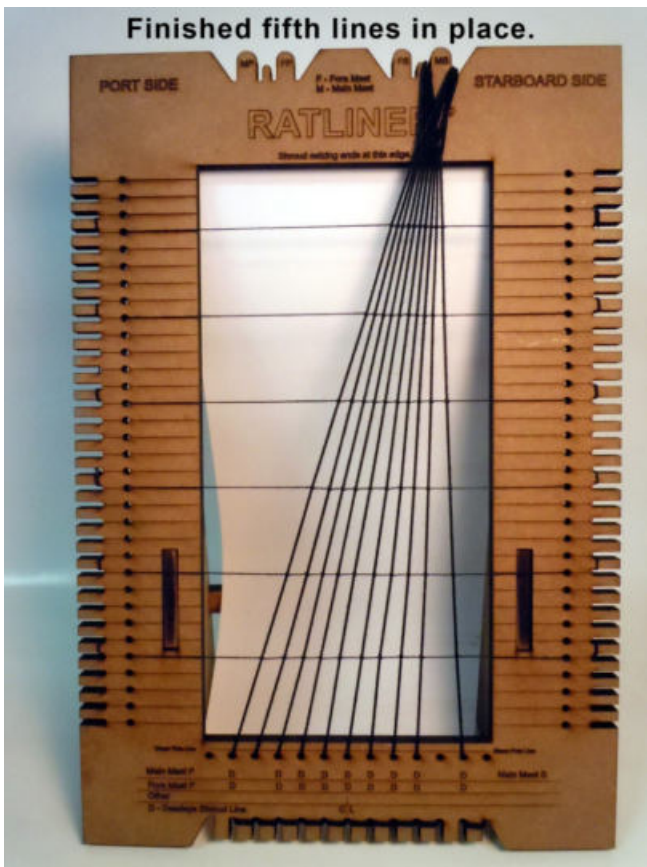
I. Use tweezers to hold shroud line in place while tightening the clove hitch. Pull left end first to the right and then to the left as knot tightens on shroud line.



J.

K.

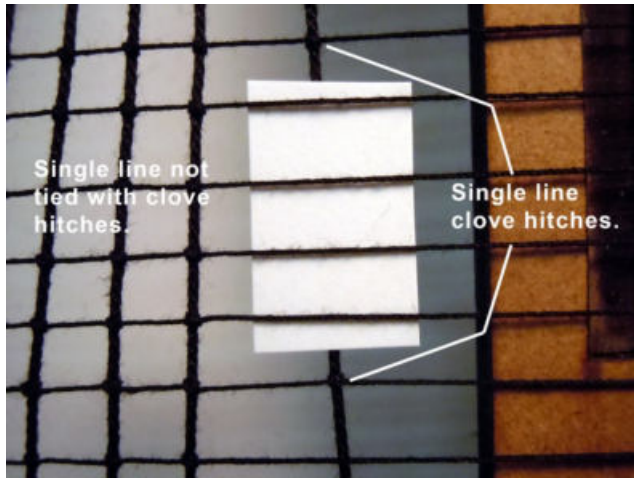
Image J. shows the first ratline being added with the single shroud line to the right as rigged on some ships. If single line is not need still follow the tying of every fifth line per ship plans starting point. The more care taken in tying and tightening of the clove hitches will save time in position adjusting. Like any new procedure there is a learning curve and “feel” for the tying process and it will become second nature after practice. **Image K.** shows the use of a straight edge to check the horizontal alignment of the knots. By adding every fifth line (**Image L.**) the shroud lines become stabilized in their positions reducing the potential of misalignment.



L.

M.

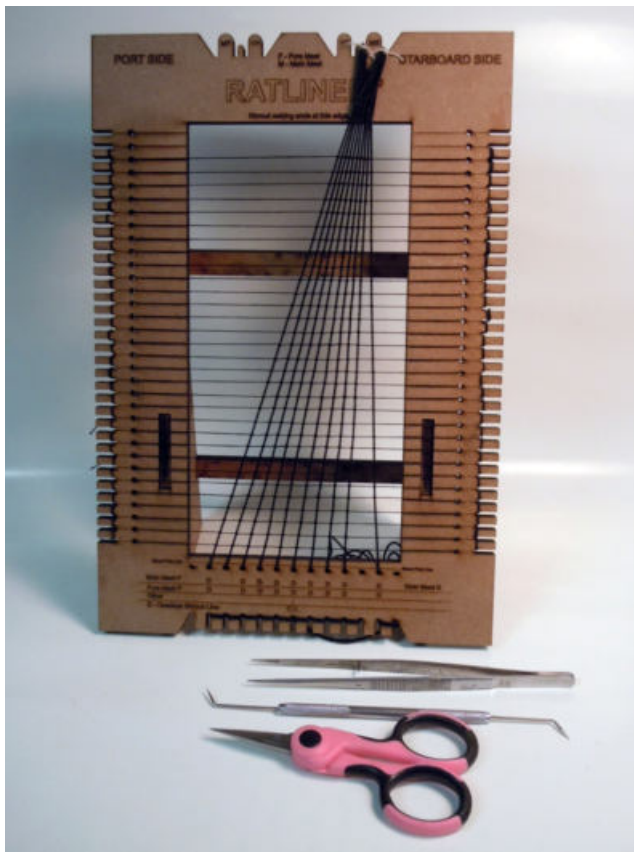
Once the fifth lines are in place, then starting at the very bottom start adding every other ratline and not tie off the single line. If you inadvertently tie the single line by mistake you must un-tie it and start over on that line. See Image N. and a small piece of paper taped to the single line may help.



N.



O.

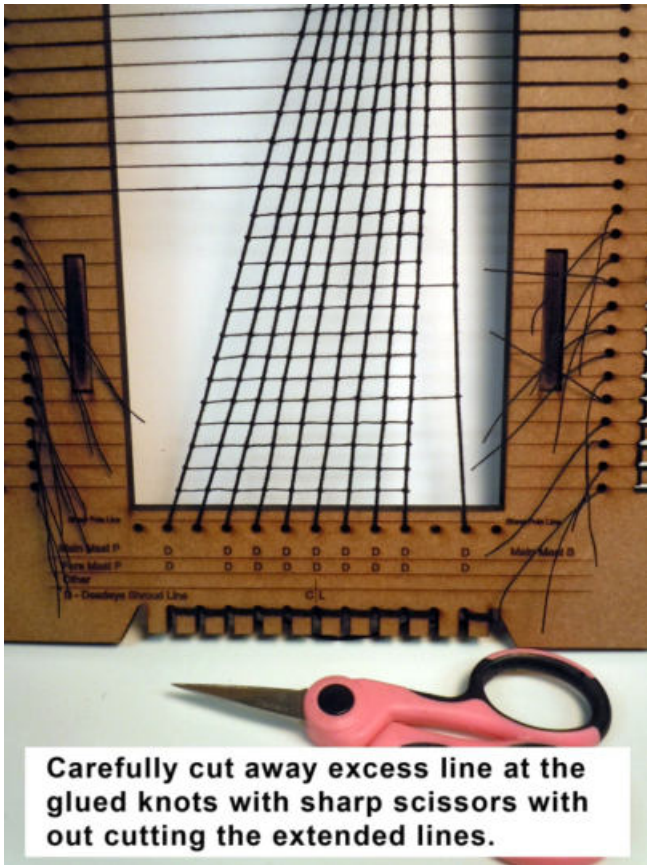


P.

Image O. shows the tying of the loops to keep them organized when removed from fixture and cut away the lines once adding to the mast.

Image P. shows the completed Starboard Main Mast ratline completely tied. Shown are the tools needed to complete including the tweezers. The stainless steel pick will be used to apply glue drops to all tied knots starting on the back side first then move to the front side.

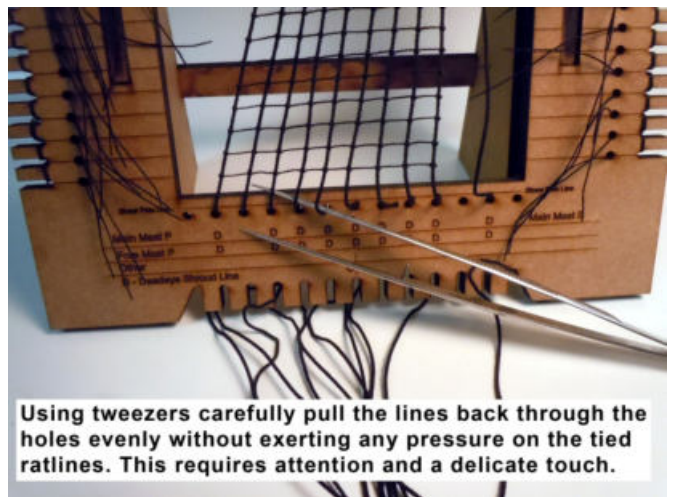
IMPORTANT!!!! The glued knots must be allowed to dry and set completely before line trimming and removal for at least overnight. The last thing needed is a loose knot when cut with scissors. Should a knot be cut through and release from the shroud line; the adjacent knot must be glued, trimmed and a clove hitch tied over the existing knot and then to the replacement knot.



Q.

R.

The first step for removal is to release the shroud line knots tied on the lower tabs. Turn the RATLINER® over and lay on a clean flat surface and carefully with the pick release each knot without any undue force getting to the main unit. **(Image S.)**

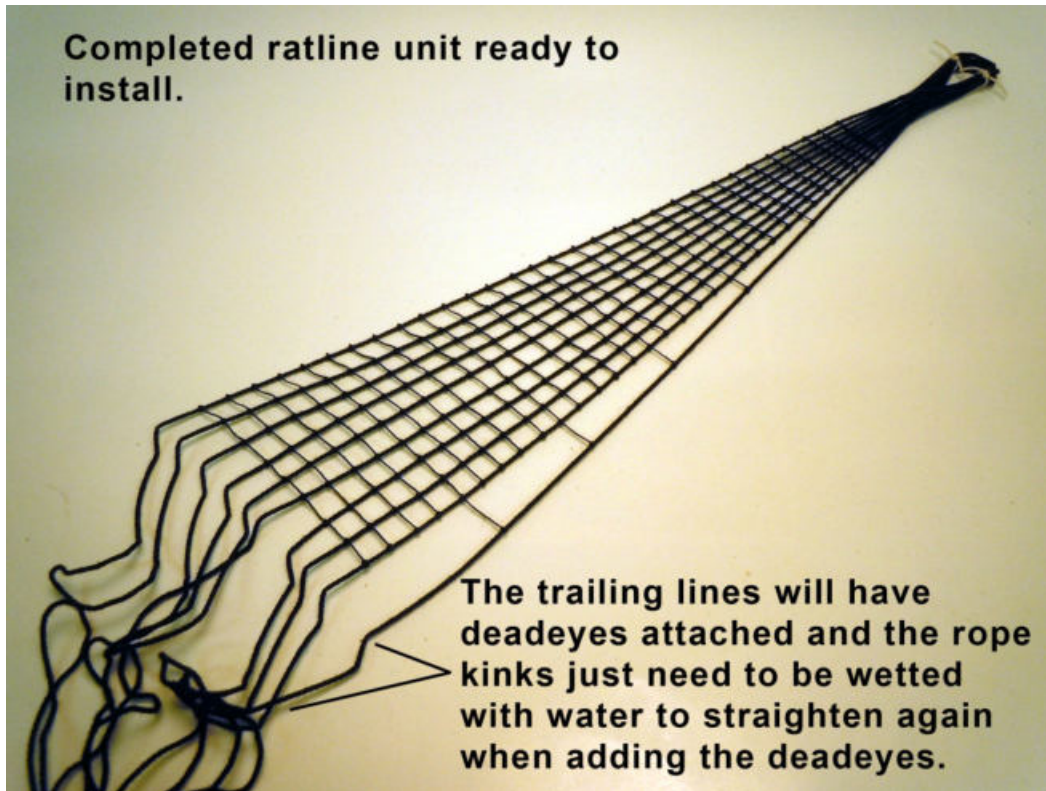


S.

T.

Next with the RATLINER® back in the vertical position (Image T.) carefully with tweezers evenly pull the lines in the holes forward working back and forth evenly without exerting force on the main unit. This step should be do very slowly and evenly across the row of holes bringing the lines back forward out of the holes. Once all lines are free lift the tied loops up off the top tab.

The finished unit should be set aside laying flat someplace safe until ready for installation. The last step is now to clean the fixture of all the tied excess lines that were cut and have the RATLINER® ready to go for the next set.



The **RATLINER®** can also be used to make Jacob's ladders for upper masts. Parallel lines with wood spacers top and bottom tied off on top and bottom tabs. Then rungs are CA's to the lines and once set are tied with thin line with thin rope.

