

TENSION BOX ASSEMBLY INSTRUCTIONS

Your Ahrens & Violette tension box is shipped as two units. The packing box contains the tension box, the right and left track arm assemblies, and mounting hardware. The track bar makes up the other package. To mount your tension box proceed as follows.

- 1) Take your track arm assemblies and determine which is left and right, they are stamped on their inside faces. The right side of the loom is taken as you are sitting at the loom.
- 2) Now remove the long 8" bolts running through the bottoms of the attached second warp beam and stiffener brackets.
- 3) Remove the second warp beam supports #36 that are attached to the rear vertical members of your loom. You'll need to remove your sectional beam and separation roller to do this.
- 4) Now mount the left and right track arms to their corresponding rear vertical members using the same bolt holes. Use one of the 6" bolts from the second warp beam support you just took off of your loom to secure the top of the second warp beam bracket of the track arm, and the long 8" bolt to secure the bottom of these new brackets. If you have difficulty getting the track arms to fit onto the rear verticals loosen the bolts slightly that hold the second warp beam and stiffener brackets to the track arms and then once you have them mounted tighten everything up again.
- 5) Now mount the track bar to the track arms using the four nuts and bolts provided. Make sure that the groove in the track is on the top.

6) Mount the tension box to the track bar by first removing the wing nuts and then sliding the clamp block off the two bolts on the bottom of the tension box. Place the tension box on the track so that the guide block on the bottom of the tension box fits into the slot in the track. Replace the clamp block and wing nuts and you're all done.

USING THE TENSION BOX AND SECTIONAL BEAM

The Ahrens and Violette sectional beam is designed to be wound onto in separate two inch sections with use of a tension box. The yarn travels directly from cones or spools which are mounted on a rack behind the loom, through the tension box and onto the beam. Throughout the warping process the tension box automatically keeps a constant uniform tension on the warp. Not only does this system save time, but it makes it possible to wind on very long warps which would never fit on a warping board or reel.

- 1) You must have enough spools or cones to be able to have one for each end in each two inch section of your warp width. Figure out how many spools or cones you will need and how much yardage should be on each. This will vary according to the size of the spools, total yardage needed, repetition of color patterns in the section, etc. You may be able to work right off of spools or cones of yarn that you buy or you may need to wind your own from yarn that is in larger packages (you can purchase empty plastic spools from LeClerc). You will also need a spool rack and/or cone rack to mount the spools or cones onto.
- 2) You must make a set of 24 extension cords to use when warping the sectional beam. Make them out of a strong non-stretchable linen or cotton. Cut 24 peices of cord exactly 3 yards long. Then knot the two ends of each peice together

(an overhand knot works) so that a closed loop is formed measuring just under $1\frac{1}{2}$ yards. Make sure the knots on all the cords fall in exactly the same place so that all the extension cords are exactly the same size.

3) Place your spool or cone rack behind the loom about six feet and place on it the spools or cones for the first two inch warp section. Make sure to line them up with the tension box which should be in back of the first two inch section at the left end of the sectional beam.

4) Take the threads from the spools and thread them first through the rear (stationary) reed section at the back of the tension box in their proper order. Then take them around the tension pegs in an alternate fashion so that if the first thread starts out over the top of the first peg and then goes under the second peg, then the second thread goes under the bottom of the first peg and over the second peg. Repeat this alternating pattern for all the threads, it will prevent them from tangling. Keep in mind also that the tension pegs are meant to be threaded differently for differnt size yarns. A heavy wool may only need to go in and out once through the bars; whereas a fine silk will probably need to go in and out around every bar and then around one bar an extra time. Next thread the ends alternately through the two sets of heddles; so that the thread coming off the top of the last bar goes through the front set of heddles and the threads coming off the bottom of the last bar goes through the rear set of heddles. This will create the threading cross later on. Last, thread the ends through the front pivoting reed.

Since there is not exactly a two inch space inbetween the pegs because the width of the pegs take up some of the space, and since it is important that the ends lie flat in the sections so that an uneven build-up does not occur, we have designed this special pivoting reed. Thread the reed two inches wide, or just slightly wider than the space between the pegs. Then pivot the reed by loosening the wing nut underneath until the ends will just fit inbetween the pegs.

5) Attach one of the extension cords to the central pipe of the sectional beam in the first two inch section using a larks-head knot. Then tie the other end of the cord to the group of ends which you have just threaded through the tension box. Now wind this first section on, keeping careful count of the number of rotations; each rotation is approximately one yard. When there is about one turn left to go, it is time to make the threading cross. Open the heddles so that the front set is up and the bottom set down to get one side of the cross, and slip a marking tie in inbetween the tension box and the loom. Then push the front set of heddles down and the back set upward to get the other side of the cross, slip the marking tie in again and secure with a knot. Wind the rest of the first section on, cut the ends, and secure with scotch tape to the peg nearest to it which is away from the direction of the next section to be wound. Continue winding all the sections in the same manner by moving the tension box along its track, then undo the scotch tape and slip a pair of lease sticks through the entire threading cross.

6) If you are winding a very fine warp, say 40 ends to the inch or more, it may be more convenient to wind separate two inch sections on a warping board or reel, and then thread them only through the pivoting reed of the tension box to wind on. This will save on the number of spools or cones needed and on the time it would take to thread so many ends through the tension box. However, your warp will be limited in length to what will fit on the warping board or reel. Wind separate warps for each two inch section on a warping board or reel, marking the threading cross and making choke ties on each. Chain each off starting from the threading cross end. Then take the other end of the warp and place the loop ends through the pivoting reed of the tension box; pivot the reed appropriately; then have one person apply tension to the end of the warp as another turns the crank. Continue winding until the threading cross reaches the heddles. Then remove the warp from the tension box, continue winding the rest of the warp on, secure the end of the warp to the beam with scotch tape as above, and proceed to the next two inch section.