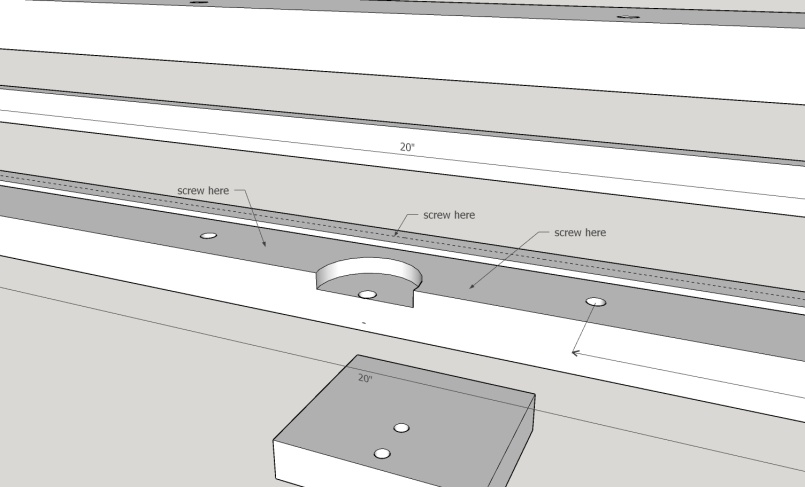
Screen Stretcher MKIII Instructions and Tips

1. Draw Blocks:
   1. Metal:
      1. Quantity: If making the metal version of the draw block you’ll only need to make 4. If you are stretching multiple screen sizes the additional tension carriages will just bolt in place

* + 1. Carriage mounting holes: These should be drilled undersized (15/32) in order to allow them to be tapped to ¼ in.
    2. Tapping: If using multiple layers of barstock (like I did), weld the layers prior to drilling and tapping. This will ensure the threads align all the way through. DO NOT drill and tap the ½ in square tubing. This will act as a bolt stop and add strength to the assembly.
  1. Wooden:
     1. Quantity: The wooden draw block should be glued and screwed to the tension carriage. If you are making multiple sizes, you will need a draw block for each carriage.

* + 1. Connection: As stated, the draw block should be glued AND screwed to the carriage. I recommend a course thread pocket screw (Kreg is my preference). You may need to clip the end to keep it from penetrating the 5/16 bolt tunnel drilled through the block.
    2. T-Nut – The wooden draw block uses a 5/16 t-nut (don’t pay attention to the drawing, the software only has ¼ in t-nuts in the database). You will need to over drill the front of the block with a 3//8 hole for the depth of the t-nut barrel. I recommend starting with the 3/8 and then drilling the 5/16 hole using the bottom of the 3/8 as a guide. If you have trouble with the t-nut backing out of the hole, put a small screw at the edge of the t-nut but out of the path of the draw bolt.

1. Tension Carriages:
   1. Connections:
      1. Lower Arm to Carriage Base: The lower tension arm is glued AND screwed to the carriage base. There should be two screws ¾ of an inch off the arm’s center line and to the rear of the mesh spline slot. There should be an additional screw centered on the arm in the space in front of the mesh spline slot.



* + 1. Carriage base to metal draw block (24/20 in tension arms) – Due to the shorter carriage block the forward mounting bolt for the metal draw block goes through the lower half of the tension arm. The hole for this bolt should be recessed to ensure the bolt head is below the surface of the tension arm to guarantee the two halves of the tension arm seat together properly. Don’t forget the washer!

* + 1. Tension arm halves – The two halves of the tension arms are connected with ¼ bolts and the corresponding t-nuts embedded in the bottom of the lower arm. To make sure the t-nuts do not back out over time, recess the t-nut so it is level with the bottom of the arm and then use a circle cutter to cut a patch to glue over the t-nut: being sure to line up the holes of the nut and patch. When bolted down there will be a space up to 1/8 in. This is normal due to the depth of the mesh spline.
  1. Placement – Counter to intuition, the tension carriages are placed on their opposite base frame arms: The longer tension carriage goes on the shorter base frame arm and the shorter carriage on the longer arm.
  2. Tension Arms for Small Frames – Please note the size difference of the carriage bases for the smaller tension arms. The size of the base is determined by the necessary space off center for the frame: Example: 12 X 14 screen. The 32 in base arm has to accommodate the pull on the perpendicular 12 in side. So: 32 – 12 = 20, which is 10 inches per side. I want a 4 inch pull capability so the base has to be 6 inches long. On the other side I will have 36 – 14 = 22 inches, or 11 inches per side. With the same pull, that means the 14 in arms will sit on a 7 in base.

1. Tension Cap
   1. Tension Bolt –
      1. Size - The tension bolt is 5/16 diameter. 9.5 inches should be enough length and I recommend purchasing a 36 in length of all-thread and cutting your own. That will provide plenty of length and allow you to attach a handle at a later time of you wish (a piece of ½ X 1/8 in flatstock breaks down into very serviceable handles).

* + 1. Nuts – You might be tempted to use ‘lock nuts’ as the interior restraining nut….DON’T! Use two nuts locked together on both sides of the cap. The lock nuts tend to wear quickly and start migrating down the bolt and cause forward and back slop….Don’t forget washers on both sides of the cap!
    2. Steady Block – The steady block is glued and pin-nailed into place to allow the glue to dry. This piece just provides a restraint to keep the end of the tension bolt from wandering. There is no tension on this piece so the simple mounting is sufficient.

PDF Plan Contents:

* + - 1. Full Screen Stretchere
      2. Base Frame and Tension Caps + Steady Block
      3. 24 in Tension Carriage
      4. 20 in Tension Carriage
      5. 14 in Tension Carriage
      6. 12 in Tension Carriage
      7. Metal Draw Block
      8. Wooden Draw Block