

On Sectionally Warping & Beaming the TC2 Loom

1 wind the spools

This is tedious: find yourself some noise-cancelling headphones and a good audio book or podcast and go to town. We recommend David Graeber's *The Democracy Project*.

Do not skip on the amount of yarn on your spools! the more you must refill your yarn; the more knots you will have in your warp from tying on new bobbins.

How many spools? It's easiest and best to have one inch of your warp beamed on at a time. Our number of ends per inch (EPI) was 60, so we had 60 spools, each with 880 yards of thread.

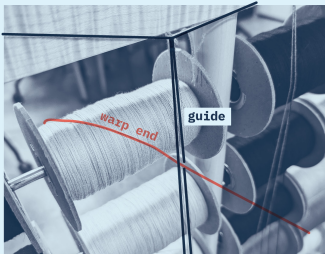
How much yarn to add to each spool? You will need each spool to have the total warp length of warp thread, multiplied by the width of your loom in inches. At the Unstable Design Lab, we warped 20 yards onto our beam. Our loom is 44 inches wide:

20 yards x 44 inches = 880 yards on each spool
warp length loom width

Make sure that the bobbin goes onto the creel, with the thread coming from the top (like a toilet paper roll)



a Make a guide string going from the top to the bottom of your creel, with two threads, creating a giant heddle for the bobbin threads to travel through. This will prevent them from getting caught and snapping while warping.



b The order of the bobbins should go from top left row to the top right, and then to the next row's left-most bobbin, and then finally ending at the bottom right bobbin.



4 begin beaming

a At this point: double check the tension box yard counter to ensure it is reset to 0 (or its starting point). Slowly wind onto the beam, being very careful not to lose an errant thread: every single thread must be in its rightful inch segment. If you miss one or accidentally twist your warp inch segment: unwind and redo the turn.

b We need: consistent tension that isn't too tight. If you lose tension or mess up or a thread breaks and you realize too late, feel confident and okay with reversing.

c Using the dent reed comb at all times will ensure that you don't accidentally twist the warps. Any twist that is not caught will be a permanent fixture while weaving. If you've woven on a TC2 with twisted warps, you know it's very annoying. Continue to push the rigid heddle or paddle back as it approaches the beam.

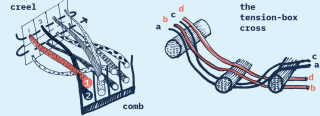
d Wind until you reach the desired length of your warp: at UDL we used a Japanese thread counter using meters, and wound on about 20.7 meters of warp (or about 22.6 yards)



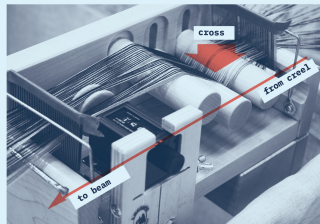
keep the reed up to prevent twisting!

2 set up the tension box

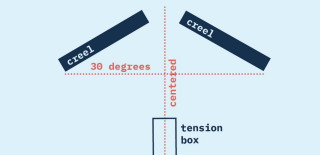
a Pull the threads from the creel and thread them into the comb of the tension box in order, from left to right.



b Use the pegs and a threading hook to form at least one cross in the tension box. While the purpose of the tension box is to give even tension, there should not be resistance when pulling the threads through the box.

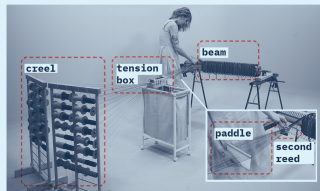


c If you are using two creels like us, with 60 bobbins total, position them so that they face inwards at about a 30-degree angle, with the threads travelling a straight and parallel path to the tension box.



d After the threads come through the tension box, they will need a rigid heddle or a paddle with a slot-and-hole scheme. After that, we found it helpful to use a second small dent reed which kept the precise width of an inch while we warped. It is essential that these tools are in this order:

creel → tension box → paddle → second reed → beam



5 make the cross

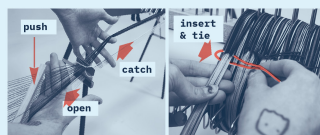
a Once you finish winding on your segment, use a clamp to secure the beam. Cut about a 10-inch length of contrasting-colored scrap yarn.

b Now, with the warp yarns under tension, use the slot-and-hole paddle to pull up to make the first half of your cross. Use one hand to reach into the cross/hed and catch the lifted threads, being very careful not to miss one or pick up extras. If you are using an end-on-end, or every other, thread color sequence like us (except for our red stripes), you should only see one of the warp colors lift in your cross.



c The dent reed comb should be close to the slot and hole paddle, because you will need to catch the cross in front of the dent reed comb. Because our dent reed comb is a size 12 ends-per-inch and was threaded 5-per-dent, we had to coax the cross out. After you have the lifted threads, place the scrap yarn where your hand is, and gently guide the thread to the beam so that it is laying on the top of the beam in between each thread. All of these steps are infinitely easier under tension, or resistance.

d This cross will be at the end of your warp. I give myself about a half yard margin of error when considering the thread between the yard counter and the beam...but you can be precise, if desired.



e Now, again under tension, push the slot-and-hole paddle down, and do the same, using your hand to preserve the other half of the cross and making sure to catch it in front of the other reed.

f Secure the scrap yarn by tying an overhand knot and trimming the excess tail. I like to make sure that this scrap yarn knot is on the right side of my inch segment, so that it doesn't get in the way of the next segment.

3 set up your back beam

a Get some clamps: it is helpful to have two or three close at hand in case you need to stop the beam from moving, put something down, etc.



b Make apron cords: cut a 3-yard length of yarn and use it to measure the rest of them: you should have one string for each inch of your width of warp. I started on the right-most end of my beam but if you are left-handed maybe you want to start from the left. The long apron cords will make it possible to weave until the very end of your warp, drastically reducing the amount of waste yarn

c You should have the phalange attachments installed on your beam. Use the warp guide attachments (drawn in here) on top of the phalanges on each to ensure that you don't place threads outside of the inch segment. If you don't have the guide attachments, you can still warp, but you should go slow and double check that your threads are being placed in the correct inch segment with each beam rotation.



now 1.5 yards

d Fold the apron string in half and place it over the beam with the two ends facing away from you. Make a lark's head knot by slipping them through the looped side of the cord and pull taught. You should be able to lock the string into place: if you find that it won't hold when you're turning the beam, try flipping the string. It should catch on itself when the beam turns away from you.



e Make sure that the apron string is centered in the inch segment. The goal of this process is to have the warps laying flush and flat on top of each other in each inch. For this to happen, it is important to make sure that any knots you make (like the knot attaching the apron cords to the warps) are arranged so that they lay flat: if necessary, slide the apron cords so that the knots lay in the grooves of the back beam. There should be no bumps or anomalies.

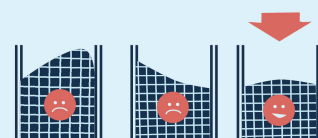
6 cut off and repeat

a Use painter's tape to secure the warp segment before cutting.

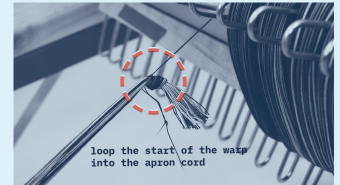
b Continue this process until you have completely covered your back beam in beautiful, even, uniform threads



we hope that if you follow our guide, you will end up with sections that look like this



f Once you have determined the placement of the first apron string, use painter's tape on the beam to mark where the lark's head knot is: each following apron string should be in the same place. If the apron strings are all the same length, the warp should begin and end in the same place on the beam. A few inches' margin of error is okay. But the more variability of lengths, the more waste will be produced.



g After you've made the lark's head knot, wind the apron cord onto the beam within the segment. Making a mound of string within the inch should be avoided: rather than rolling each turn of apron string on top of itself, each following turn's worth of apron cord should lay next to the preceding turn: like the threading of a screw.

h Once you finish rolling the 1.5-yard apron cord onto the beam tie the two ends of the cord together using an overhand knot.

i Take the ends of the warps, which have been guided through the tensioning arrangement, and tie an overhand knot to secure them all together.

j Now slip the warp knot through the tied-together apron cord threads: split the warp segment and create another lark's head knot attaching the warps to the apron cord by looping the warps around the knot after going through the apron strings.



k Give the apron cord and the warps a tug to test and make sure they don't come out under tension. Once the warps are attached, begin turning the beam! Just like the knot that attached the apron cord to the beam, ensure that the knot attaching the apron cord to the warps lays in the groove of the beam so that a bump isn't formed on the beam: abnormalities will cause tension issues during weaving.

7 troubles

a If you need to refill the warp yarn spools during the process, take special caution not to let the end of the warp thread leave the spool and the tension box: it's not fun to rethread the warps through the reeds, tension box, or the creel in the correct order once you get started. If you must: take extra pains to rethread the replacement warp in its rightful place. Failure to complete this step will result in snags and breaks, leading to knots in your warp while weaving. Which sucks.

b That being said: some knots in your warp are inevitable, and especially while learning the process for the first time. If a thread snaps while you are warping, remain calm: Secure the beam with a clamp and find the two ends of the warp thread. Tie them together using an overhand knot. You should be able to FEEL unusual tension where a thread snaps: there is a cause for every effect. Troubleshoot if you are encountering frequent snapping threads, or threads keep snagging on each other or the creel.

c The most common cause of snapped threads is the warp thread getting caught on its metal rod of the creel: the guide strings that we set up on the creel(s) should minimize this issue, though. If you skipped that step, take some time to put them on. Future you will thank you. Adjust the tension on them too, if that's not helping.

d If you are still encountering snapping threads, the next trouble you may have encountered is inaccurate positioning of the creels. Try to realign the creels so that the thread leads to the tension box in 25% or 30% angles.

e The other common error and the most annoying to correct is the order of threads. Use your eyes and your fingers to follow threads from the spools to the tension box, ensuring that (facing the creels with the beam behind you), the top left-most spool is leading to the left-most dent in the tension box, the next top left-most spool is threaded through the next, and then the next row in the same way: left, middle, right, like reading and writing English, until you reach the bottom right spool, the last one.

f If you do encounter threads that are not in the correct placement, it may be easiest to snip a thread in an incorrect place and just rely on and correct the knot while weaving.



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resistance.unstable.design

Almost all the written content and photography was captured by Poppy DeltaDawn during her 2025 Experimental Weaving Residency. This poster has been designed and annotated by Laura Devendorf with inspiration from several sources including: Poppy's original risograph edition; offset print font-use guides created by the collective Type-O-Tones; and thrifted Letraset Instant Lettering transfer pages. Post it on a wall, the side of the TC2 loom, or fold it into a book to store it at your weaving station. Sectional warping has its fans and foes, improvise and do what works best for you!