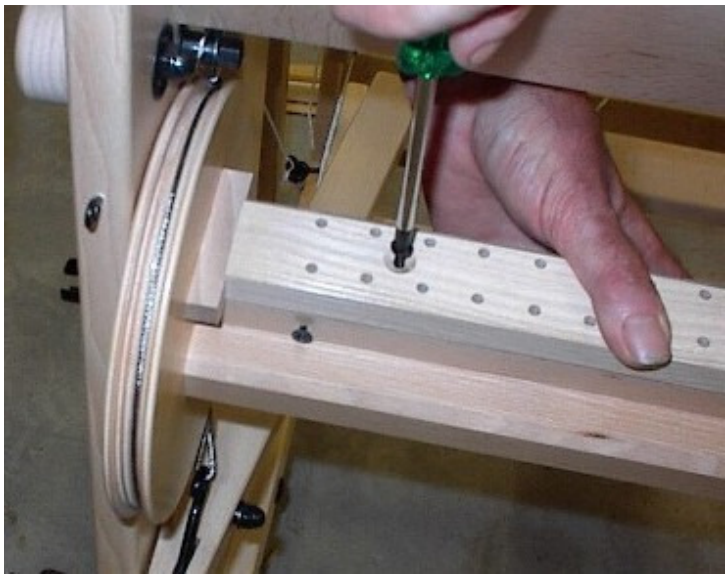
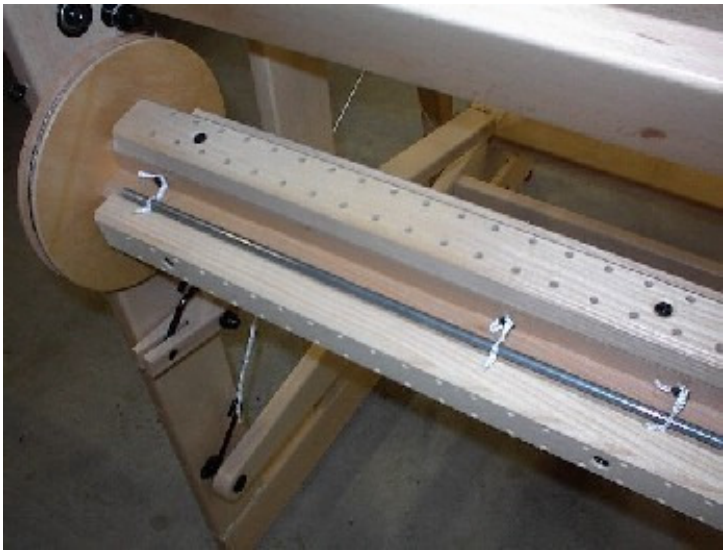
1. Assembly instructions for the sectional warping system for the Delta, Megado and Octado weaving looms.

The Sectional Warping System is the same for all three looms. Because the three looms are actually different, you can have some parts left over. It is more efficient in the production department however, to minimize the total number of different products.
The pictures in the instruction show the installation on an Octado because it shows all the required steps of the assembly, and for instruction purposes it is sufficient for the Delta and Megado.



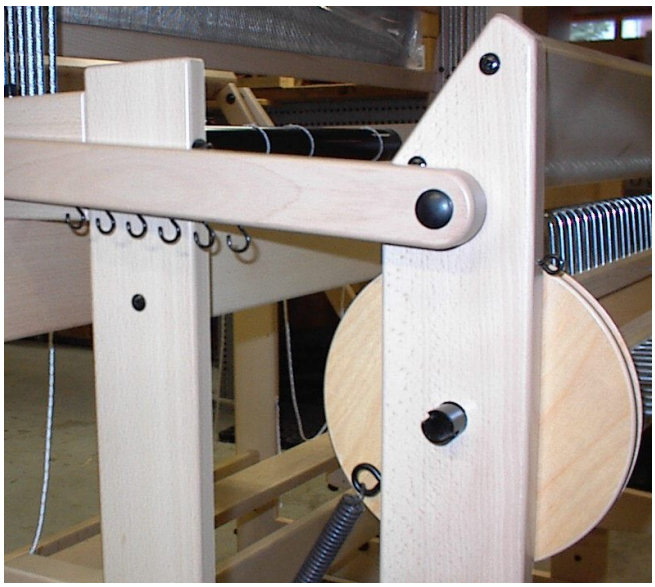
Screw the four bars to the four smaller sides of the warp beam.

It is important that the bars, and the sections, line up exactly.
With the Delta and the Megado you need to push the bars against the brake disk while you put the screws in.
With the Octado you need to use the gauge block (see picture) that comes with the 90 and 110 cm sectional warp beams. The gauge block is 12 mm thick and you need to put the gauge block between the brake disk and the sectional warp bars while you put the screws in.



Hook the steel tie-up bar with the Texsolv cords to the screw heads of the warp beam.
Next, put the section clips into the holes of the wooden bars. Squeezing the ends of the clips together will make this easier. Only use the clips required for the width of the warp you intend to put up.

A Sectional Warp Beam makes the moving back part of the Megado and Octado heavier. In the package of the sectional warp beam you will find two springs, screw eyes and screw hooks for the connection of the springs. These springs can help to move the back part of the loom, which makes the loom treadle lighter. Because the Delta does not have a moving back part, you will not need the springs.
For the Megado you do not need the screw hooks, because they are already installed at the bottom of the hinge arms of the back part of the loom.



Screw six hooks on the bottom of both hinge arms, with there opening facing the front of the loom.

Use a clip of the sectional warping to tighten the screw eyes into the bottom of the uprights of the back part.

Connect the hinged arms and the bottom of the upright with a spring and do this on both sides of the loom. The springs have an eye and a hook. Connect the eye of the spring to a screw hook of the hinged arm and the hook of the spring to a screw eye of the upright. The hinged arms have six screw hooks, and the bottom of the upright has two screw eyes. If you choose a screw eye and/or hook towards the front of the loom, the back part of the loom will move up easier, and the treadle action is lighter.
The disadvantage is that when the back part comes down, it has a tendency to “dance”.

The dobby knife also moves a bit up and down when the back part of the loom “dances”. As long as the dobby knife is not above the screw head of the last dobby hook, you cannot select

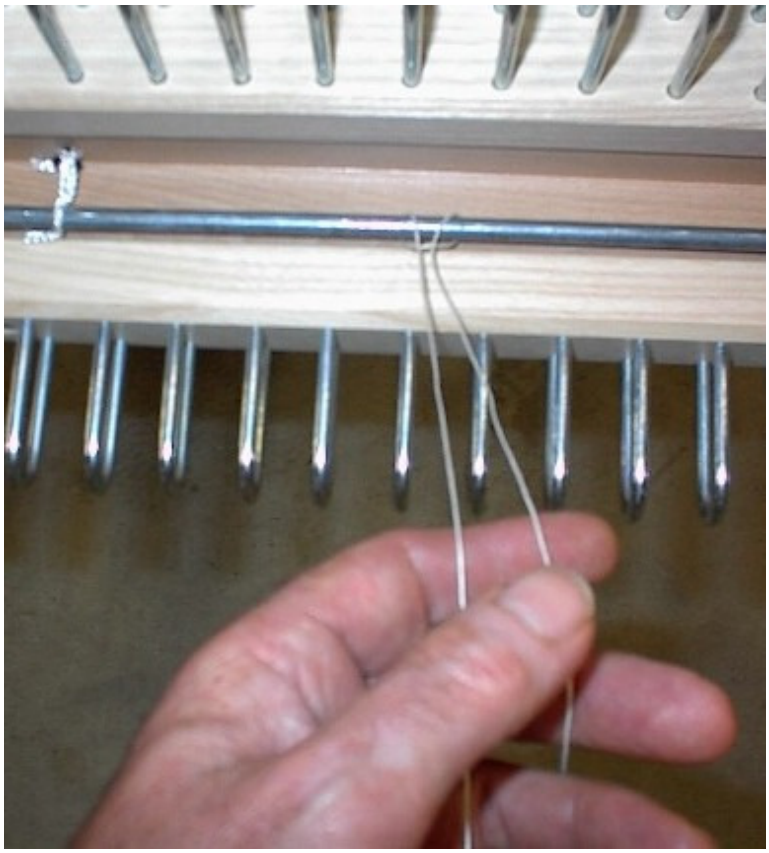
the shafts of the next pick. When the back part of the loom tends to “dance”, you can do any of three things, or a combination of these three things:

1. Reduce the tension in the springs. The loom will treadle a bit heavier.
2. Adjust the knife a bit higher. Turn the knurled nut at the connection of the cord to the treadle. To shorten the cable of the Megado you have to screw the hook into the treadle a few turns. Adjusting the knife a bit higher, the shed will become a bit smaller.
3. Let the treadle come up slower. This reduces the speed one can weave with.

When you assemble a second warp beam onto the loom, the back part of the loom becomes even heavier. You may need to attach the springs to hooks closer to the front of the loom in order to help the back part of the loom lift easily. The second warp beams of the Megado and Octado also have a set of two springs. In most cases however, one spring on each side will be sufficient.
The required amount of spring tension is of course also dependent on the width of the loom and the number of sectional warp clips used.

Making the tie-up loops for the sections:

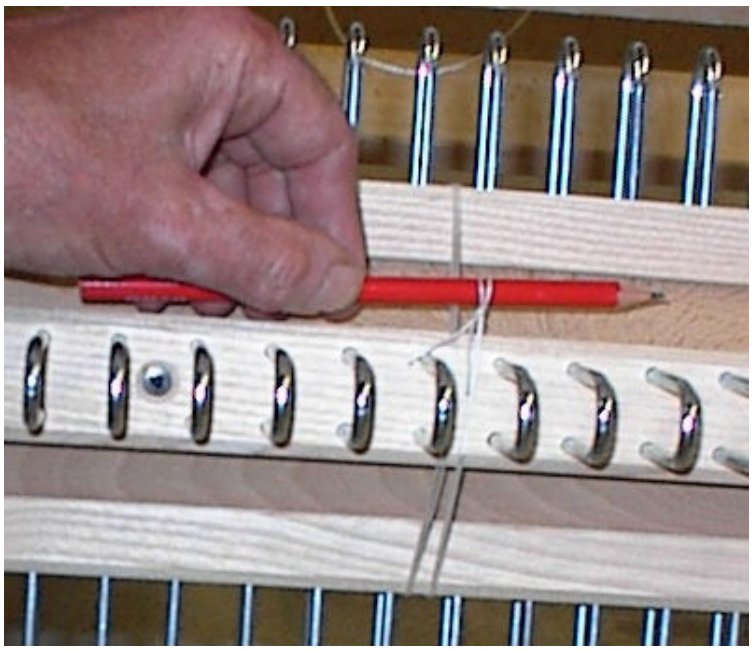
With sectional warping you will put each section of warp on separately, and it is not possible to use a tie-up bar that brings the end of the warp to the shafts. Every section of the warp chain needs be to tied to the tie-up rod with a cord, sufficiently long, to bring the end of the warp to the shafts.



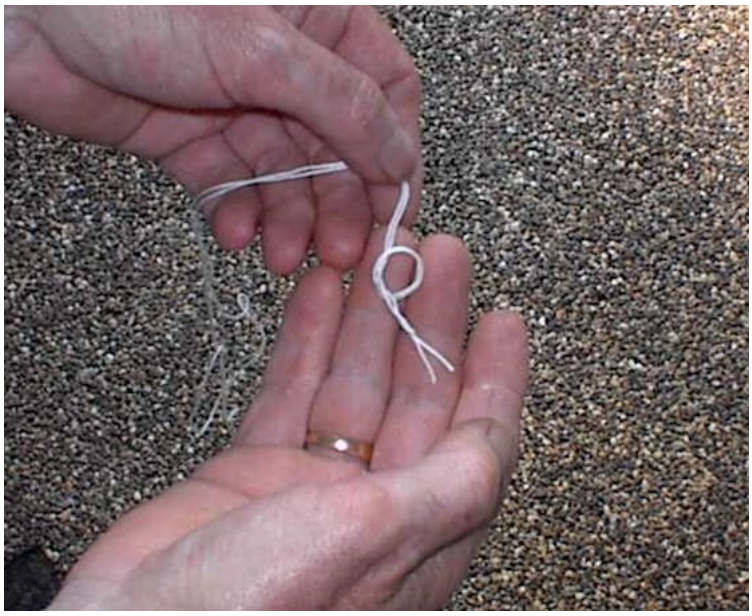
You will find a ball of cotton yarn in the package. With this yarn you can make a loop, a bit longer than you need to go from the warp beam over the back beam to the shafts.

Attach the cord with a “lark’s head” to the tie-up rod, as shown on the picture.

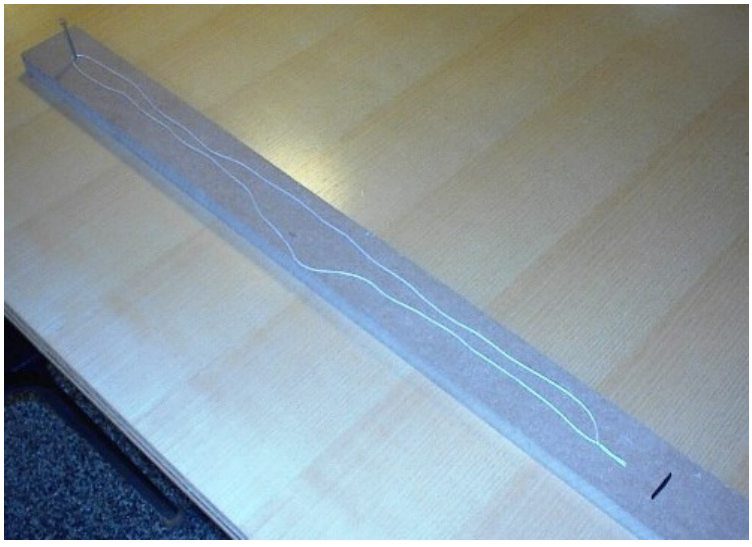
The connection of the loop and the end of the warp, that we will make later on, will create an enlargement in the section if this connection falls on a sectional warp bar. We will check this, and correct the length of the cord if required.



Take a pencil and connect the other end of the loop to the pencil in the same way as the connection to the tie-up rod. Turn the warp beam in the right direction and put the loop around the sectional warp bars. When you keep the loop tight, the pencil needs to come just in between two sectional warp bars.



The length of the loop can be shortened by putting an additional knot in the cord besides the existing knot.
When you have the correct length of the loop, take it off the tie-up rod and use it as the example for the additional loops you have to make.

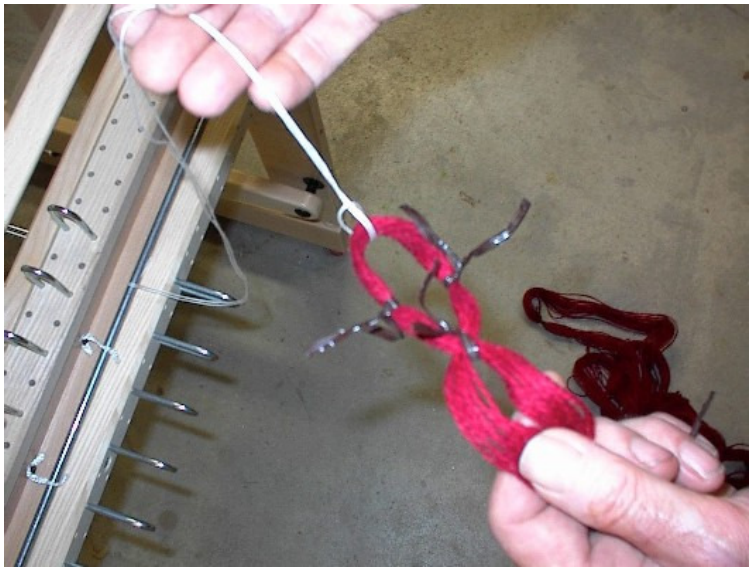


To simplify this, you can use a piece of scrap wood. Put a small nail in at one end. Put the loop around the nail and pull the loop tight.
Now mark where the other end of the loop is with a pencil. This will help you to make all the cord loops for the sections at the same lengths.

2. Warping the individual sections with the Louët warping tool:

Make small warp chains for the width of the sections. You can choose sections of 2, 4, 6 or 8 cm and if you have sections in inches, choose for 1, 2 or 3 inch.

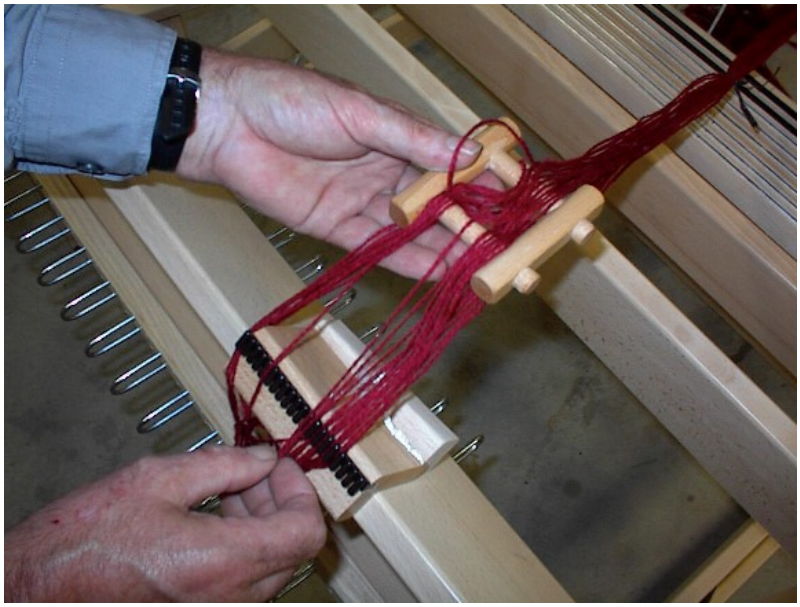
Attach the tie-up cord with a lark's head to the tie-up rod.
Slip the other end of the tie-up cord through the loop at the cross in the warp. Now place the entire warp through the loop of the tie-up cord.



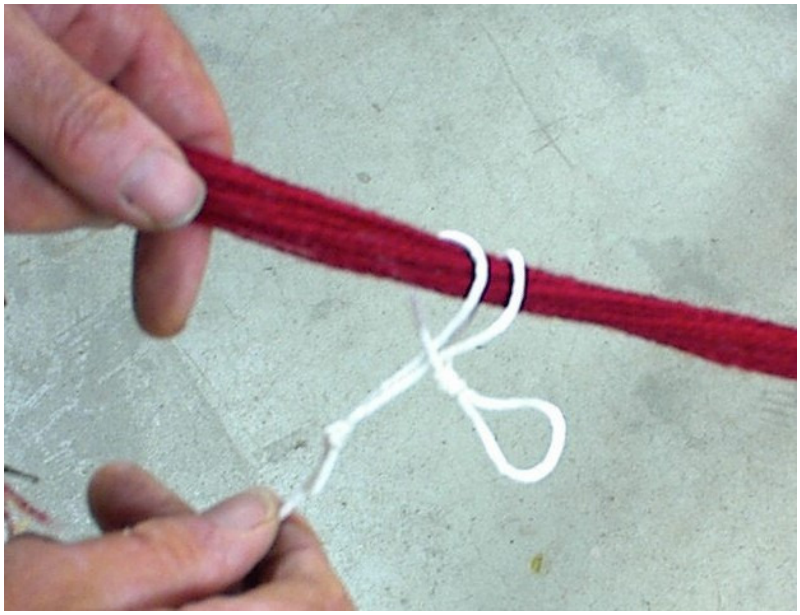
Pull the tie-up cord tight, as in the diagram, so it is also attached with a lark's head to the loop at the end of the warp.

Attach the raddle on the back beam with the Texsolv cord and peg. Fix the raddle in place, above the section you intend to warp by pushing the wedge underneath the Texsolv cord.

Lead the warp chain through the loom and over the breast beam. Advance the warp beam so that the end of the warp comes close to the back beam.
Insert the cross holder into the cross, lock it and remove the ties from the cross.



Take the cross holder with the warp in one hand and divide the warp yarns in the raddle. The raddle has 2 openings per cm or 5 per inch.



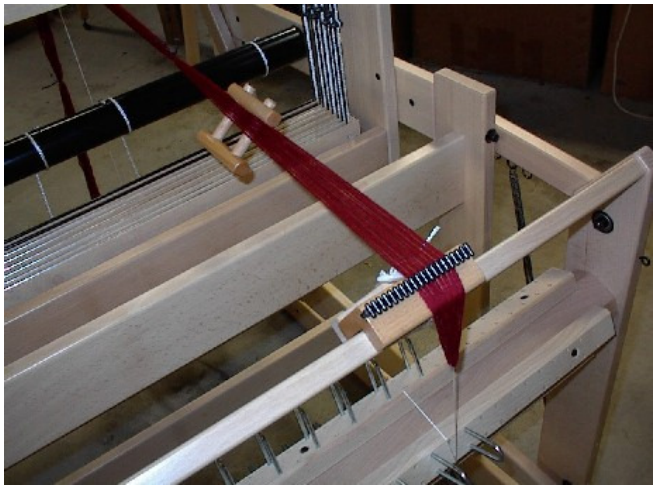
There is a cord included to attach a weight to the warp. At one end it has a double loop. The picture shows how you can attach this loop to the warp chain in a way so that you can easily pull it loose and move it along the warp chain.

Use the cord to attach a weight to the warp hanging just above the floor. This weight determines the warp tension on the warp beam. So for each section you have to use exactly the same weight.

While beaming the warp, the weight will be raised. Before the weight touches the breast beam, you have to move the strap along the warp and fix it again so that the weight is positioned just above the floor again.

You will need to ensure that during the initial turns of the warp beam, the tie-up cord is tight. If the tension during the beaming-up is insufficient to lift the tie-up bar, help it by hand.

Additionally, you need to correct the position of the raddle during the first turns of the warp beam, in order to let the warp yarns to fall exactly between the section clips.



The cross square should be shifted back anytime it comes to the raddle. To shift the cross square back, you have to untie the bands from the warp.

When the end of the warp chain comes near the raddle, you can remove the cord with the weight and the cross square, after you have tied the cross again.

Attach the end of the warp with an elastic band to a section clip. Don't use a clip of a section that still has to be warped.

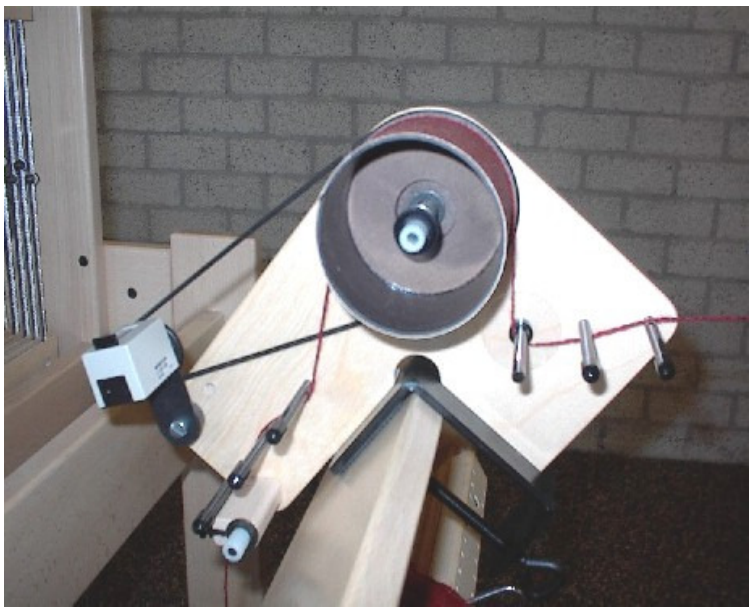
When this is completed, slide the raddle to the next section and repeat the procedure with the next warp sections.

Remove the elastic bands when all warp chains are on the warp beam.
Unwind the warp beam two turns and place the end of the warp over the back beam.
Put the cross bars through all the crosses and check that no warp sections are turned around. This may happen easily when you work with small sections.
Hang the cross bars onto the middle part of the loom, just behind the shafts. This will help with picking up the warp threads in the proper order when you put the warp threads through the heddles.

3. Warping the individual sections with the Tension Regulator and Bobbin Rack:

For every thread in the section you need a bobbin on the Bobbin Rack.
With the Bobbin Rack you can do a maximum of 16 threads per cm on metric beams, or 32 threads per inch on Imperial beams.
Use a Bobbin winder to fill-up the Bobbins.
The length of the warp thread can be determined by comparing the full weight of the Bobbin with the empty weight of the Bobbin. Next, divide this weight with the known weight of 10 yards.

Hang the shafts filled with Bobbins in the Bobbin Rack. The thread has to run from the bottom of the Bobbin to the Raddle.
Position each thread in an opening of the raddle. In the picture we have numbered the Bobbins. This shows the sequence of the threads in the Raddle.
Starting with the top Bobbin, you go down, than up again etc.



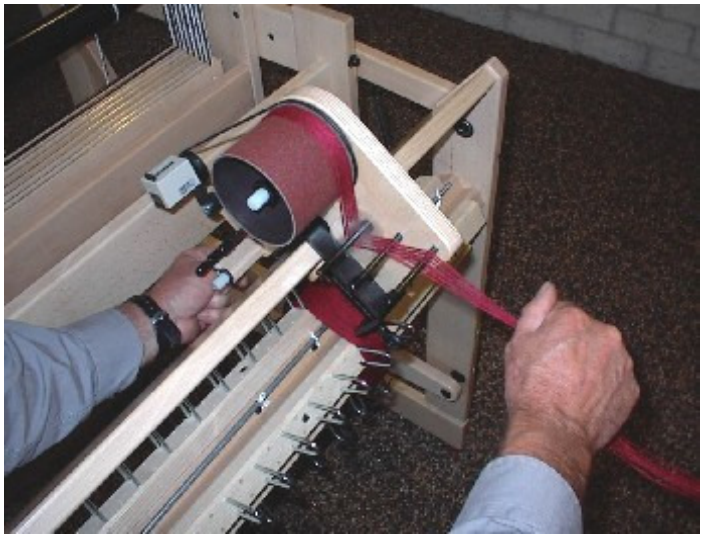
Attach the tension regulator on the back beam, just above the section you want to fill.

Before running the threads through the tension regulator, loosen the two knurled nuts till the friction drum turns lightly.

Take all but one of the plastic disks from, the third shaft.

Guide the threads along the first three shafts over the friction drum. Make a cross between the first and second shaft. After every thread, put a plastic disk over the third shaft.
On the other side of the friction drum, make a cross between shaft four and five. The threads go under the sixth shaft, and over the small raddle.

Use the knurled nut to tighten the raddle in a position that will allow you to slide the threads between the sixth shaft and into the raddle.



Initially, the threads do not need to be exactly side-by-side on the friction drum. However, if you need extra room, pull the warp a couple of times back and forth. This will position the threads neatly side by side.

When all the warp threads of the section have been threaded through, put a knot in the warp threads past the little raddle, and cut the thread-ends even.

Take a tie-up cord and attach this with a lark's head onto the tie-up rod. Connect the other end of the tie-up cord to the warp also with a lark's head behind the knot in the warp yarns.
The friction of the drum will give tension to the warp while beaming up. Adjust this friction with the knurled nuts to get the right warp tension.
By tightening the two knurled nuts against each other, you will prevent the nuts to come loose during the warping process.

Turn the warp beam until the tie-up cord are tight.
Because you want to have the same length of warp on each section, you have to remember the position of the warp at the moment you turn the counter to zero.

Take care to make sure during the first turn of the warp beam that the cord to the tie-up rod is tight. If the tension during the beaming-up is insufficient to lift the tie-up rod, help it by hand.

You need to correct the position of the warp tension regulator during the first turns of the warp beam, in order to let the warp yarns to fall exactly between the clips.

When the desired warp length has been beamed-up, you can use a piece of tape to keep the warp yarns in proper sequence. This is necessary, because there is no cross in the warp. The sequence of warp yarns on the tape is sufficient to keep the yarns in order while bringing the yarns forward and through the heddles. If in this process a couple of yarns are mixed-up, it should not affect the weaving.

Cut the warp yarns off just behind the tape.

Attach the end of the warp with an elastic band to a section clip. Don’t use a clip of a section that still have to be warped.

Put a knot in the end of the warp that sticks out of the warp tension regulator.
Connect the tie-up loop for the next section to it.

When all sections have warp yarn, take the warp of one section by the time for threading through: remove the elastic band that holds the warp to the clip and turn the warp a couple of turns off the warp beam. Guide the warp yarns past the heddles to the front of the loom and take the yarns in sequence from the tape and slay the yarns through the heddles.

I you need to beam-up sections with different colors, you can fill-up the sections with the same colors first. After that you do the whole procedure of filling-up the bobbins, guiding the yarns through the warp tension regulator and beaming-up, with the following color.

If the changes in the color of the warp do not correspond with the sections, you can work with the Louët warping tool, so you can make warps for the sections in every desired color combination without much extra work.