Glimåkra

Instructions for your

Julia Countermarch Loom

Written by
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Julia Countermarch Assembly

This booklet contains instructions for using the unique features of your Julia countermarch loom. We suggest you start by planning and winding a simple 2 or 4 shaft warp before assembling your loom. (See page 7 for an example)

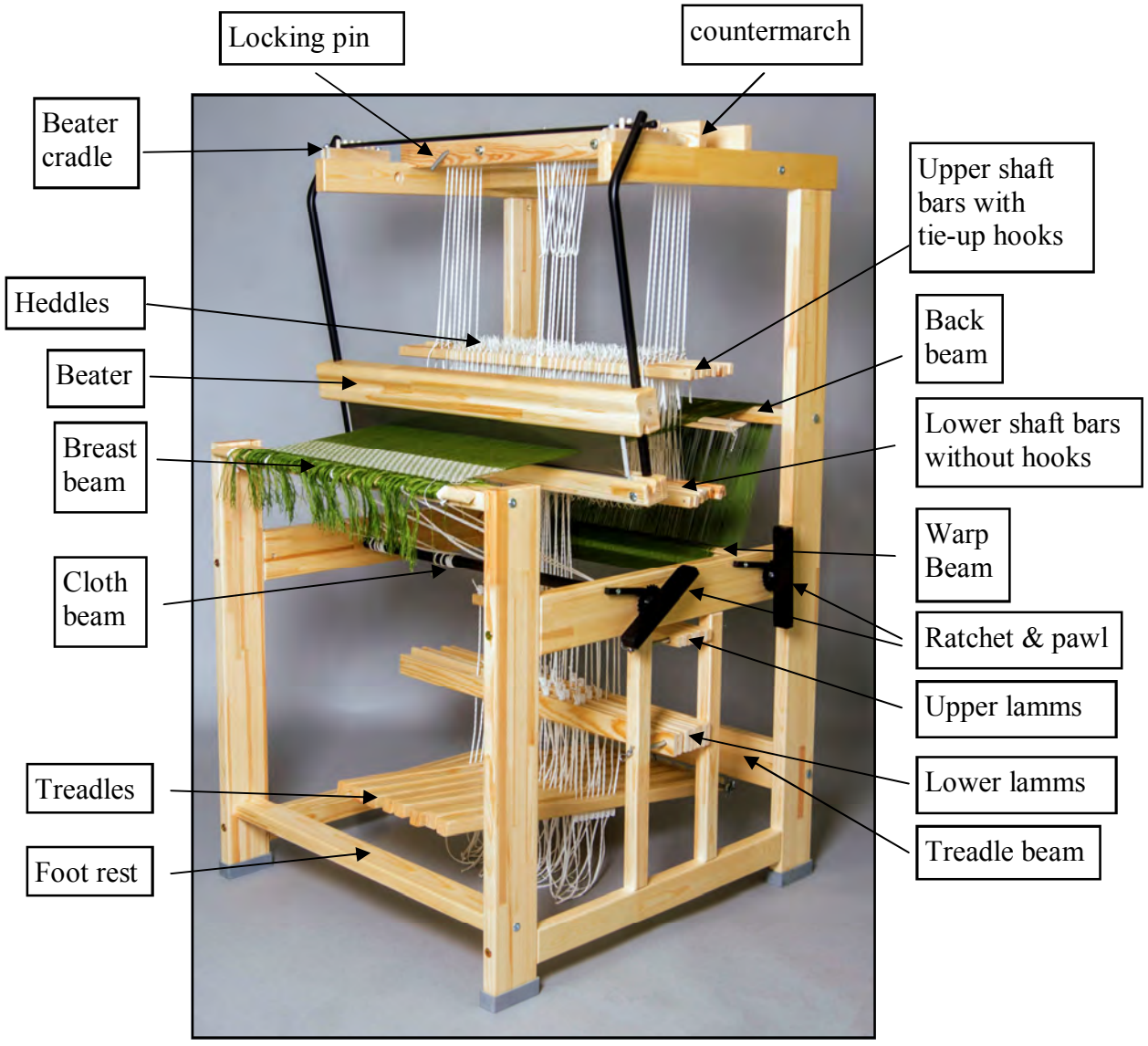
Read pages 2 to 6 before assembling your loom

Assemble only the shafts and lamms you will be using for this project. Follow these instructions in the order given for easy tie-up of your loom.

Counterbalance beam
If you have a new countermarch loom, you will not have a counterbalance beam. If you have the black metal counterbalance beam, which is shown in the DVD, you will not use it for the countermarch. If your loom already has this beam installed, loosen the bolts in the loom frame enough so that you can take this beam out.

Plastic screw ring
The black plastic screw ring is placed on the warp and cloth beams on the outside of the loom on the side opposite the ratchet and handle. The DVD shows a different placement of this ring.

Shaft bar hooks (see page 9)
Metal shaft hooks are included with your loom. Put them into the small holes in your upper shaft bars.



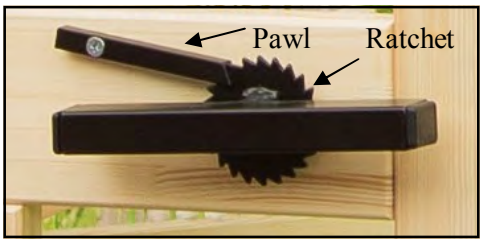
Warping instructions

The book Learning to Warp your Loom, which came with your loom, will show you how to use Texsolv heddles, cords and pins, and how to warp your loom. There is countermarch information in the book, Tying up the Countermarch Loom. Refer also to the DVD.

Initial tie-up
Much of the initial tie-up shown in these instructions will only be done the first time you set up the loom, pages 9 to 11. Only the treadle tie-ups may need to be changed from one warp to another.

Lamms
The countermarch tie-up requires two sets of lamms. It is not necessary to put them on the loom when you assemble the loom frame. See page 9 for instructions for putting the treadle cords into the lamms before putting the lamms on the loom.

Ratchet and Pawl



Warp tension on the warp beam and cloth beam is held with a pawl, which catches into the teeth of the ratchet. Turn the ratchet handles clockwise to wind the warp onto the warp beam and the cloth onto the cloth beam.

Beater Cradle

The beater cradle is adjustable forward and back. This provides a method to set the beater parallel to the loom during assembly.

The beater cradle allows you to weave longer before you need to advance your warp. Start with the beater in the front position. After weaving an inch or two, move the beater away from you. Continue advancing the beater as you weave. After weaving in the last position, you then advance the warp with the ratchet.

Treadle Assembly

See page 11 for information about putting the treadles on the loom for the tie-up of the treadles. This is easier to do after you put a warp on the loom. If your treadle tie-up will be the same for your next warp, you do not have to change the treadle cords.

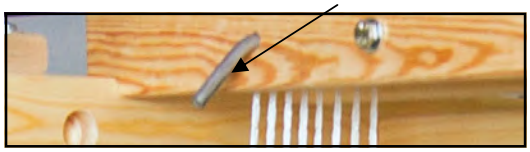
Plastic ring on beams

The warp and cloth beams are assembled with a plastic ring. This keeps the beam from moving sideways. On the older models, this ring was inside the loom frame on the ratchet side. *Do not Tighten the screw too tight*.

Julia Countermarch Assembly

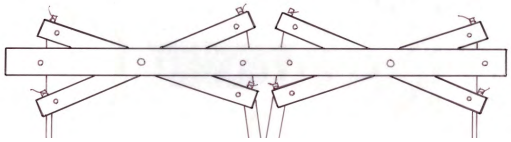
The countermarch has 16 jacks, 8 on each side. Assemble as shown in the assembly instructions and put the ***two locking pins*** into the countermarch jacks, to stabilizes the jacks during warping. Place the countermarch frame onto the top of the loom. Place it up against the beater cradles to put it close to the beater.
For four shaft tie-ups, use the first four pairs of jacks at the front of the countermarch.

Locking pin



Front four jacks

Countermarch in action



Warping and Tying up your Loom

Warping your loom
If this is the first time you have tied up a countermarch loom, we suggest that you start with a weaving project which uses two or four shafts. If you want to follow a project which is already planned, there is an easy project on page 7 to weave towels.
Contact Glimakra USA for information about weaving kits.
Plan and wind the warp. Assemble only the number of shafts which you will be using for your project. Follow the DVD and/or the warping book to beam the warp, thread the heddles, sley the reed and tie the warp to the cloth beam tie-on bar.

Texsolv tie-up kit
Pages 4 and 5 show you how to use Texsolv cord and pins and how to assemble the shafts and shaft holders. The Texsolv tie-up kit comes with cord, beads and anchor pins for the tie up. You will not need any arrow pegs for the tie-up.

Countermarch Tie-up
When your warp is tied on to the cloth beam tie-on bar (see p 8), you are ready to make the countermarch tie-up. Instructions are given here starting on page 9. The first part of the tie-up only needs to be done the first time. These countermarch cords are left in place for your next warp. Only the treadle cords are changed from one warp to another. To begin, put the locking pins in the countermarch jacks, the shaft holders on the shafts (see page 5) and tension the warp tight (see p 8) before you start the tie-up.

Eight shaft instructions
When you have countermarch experience with two or four shafts, you can tie-up more shafts and treadles in the same way shown in these instructions for tying up four shafts.

Warping equipment included with your loom

Lease sticks
Two smooth, flat sticks with holes drilled into the ends. The long edges are tapered for smooth movement through warp threads

Two cloth and warp beam tie-on bars
These wooden bars hold the ends of your warp. They have holes drilled into the ends.

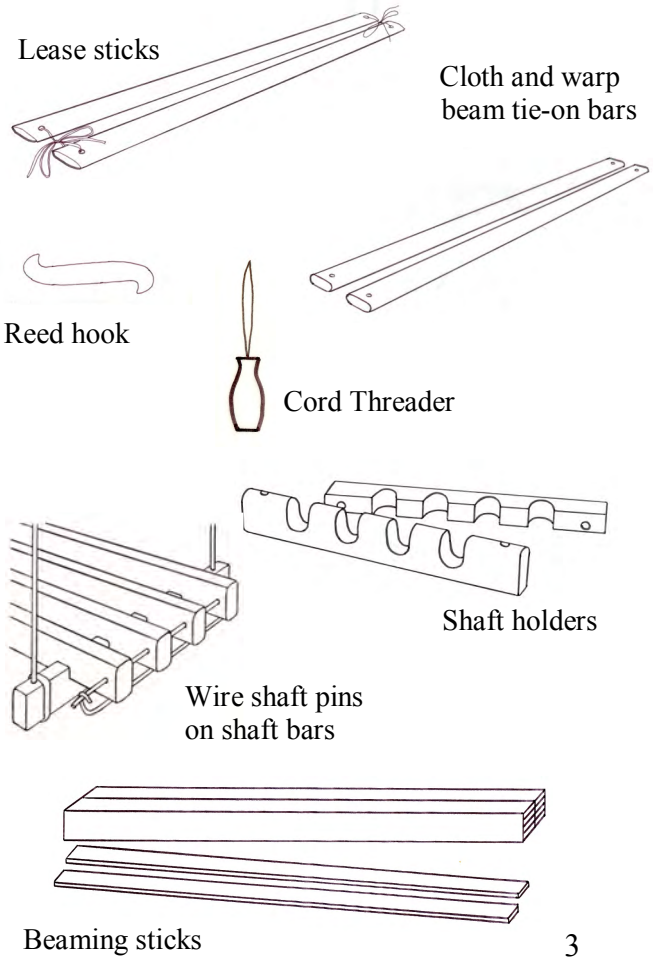
Reed hook
A reed hook (or sley hook) is used to pull the loops of yarn through the dents in your reed. This is called sleying your reed.

Cord threader is used to thread tie-up cord.

Two shaft holders
Used to hold shafts while you warp your loom, these come with your loom, for holding four or eight shafts.

Wire shaft pins
To secure shafts after you put the heddles on, wire shaft pins come as a set of four.

Beaming sticks
So that the warp on the beam will be smooth and even, beaming sticks are included with your loom. They are placed on the warp as it is wound onto the warp beam.

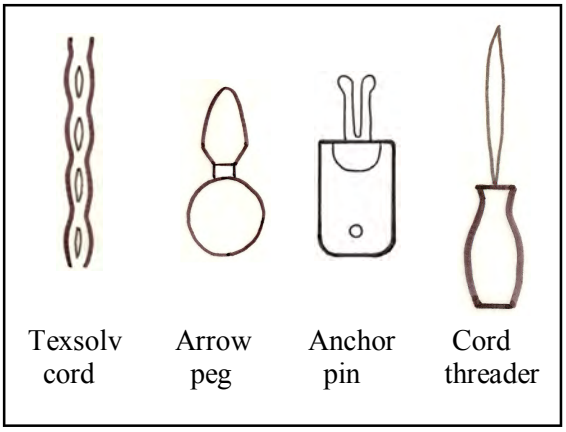


Texsolv Tie-up Cord , Anchor pins, Arrow Pegs and Heddles

See pps 15 and 27 in Learning to Warp your Loom

Texsolv cord

Eliminating the need to tie knots, Texsolv tie-up cord is designed for making loom tie-ups. Your tie-up kit includes pre-cut cords. A cord threader is helpful for threading the cord through holes in the loom parts. If you cut a cord, the end needs to be secured by being melted in a flame.

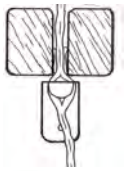


Anchor pins and arrow pegs

Anchor pins are buttoned into the cord and the legs fit into the wooden holes. Arrow pegs are used to secure loops in the cord by putting the arrow end through the holes in the cord. Your tie-up kit includes the anchor pins you need. Although the DVD shows how to use the arrow pegs, your counter-march loom can be tied up with only anchor pins.

Anchor pins

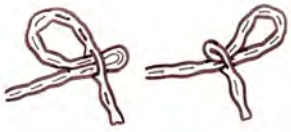
The anchor pin is buttoned into the cord, securing the cord into a wooden loom part by putting the two legs into a hole in the wood.



Texsolv cord

To make a loop, thread one end through the last hole in the other end of the cord.

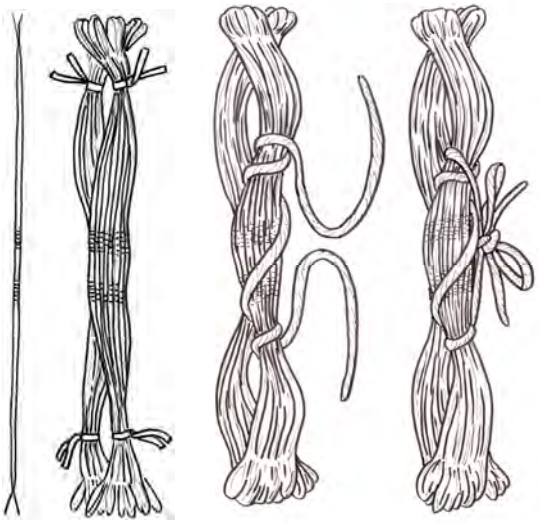
To make a loop, fold the cord and send the fold through a hole in cord end.



Heddles

Tex is from textile and solv is the Swedish word for heddle.
Made in a continuous length, Texsolv heddles can be cut apart using scissors while they are still tied in a bundle or after they are put onto the shaft bars. Heddles easily slip onto the shaft bars during threading. Tie them as in the diagram before taking extra heddles off the shaft bars.

The Julia loom has 9 3/8 inch heddles with brown ties.

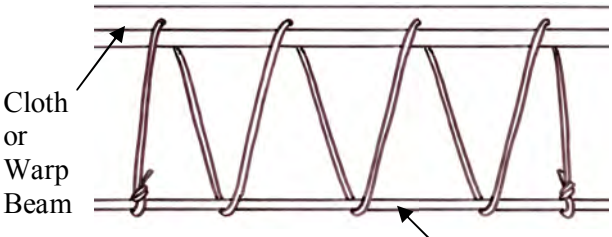


Texsolv Heddles Tying Texsolv heddles

Attaching Beam Cords

Attaching beam cords

Your loom comes with 5 yard long Texsolv beam cords to attach the tie-on bars to the warp and cloth beams.
See pages 16 and 17 in Learning to Warp your Loom for other methods of beam cord tie-ups.



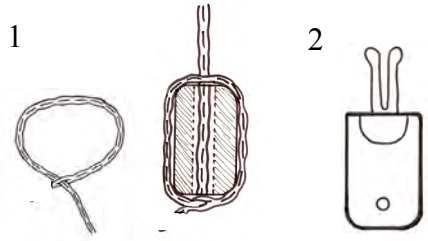
1. Start on one side of your beam and thread the end of the cord through the first hole, then into the next hole in the same direction. Continue, using all four holes.
2. Make a loop in the ends of the cord, see illustration above.
3. Put the tie-on bar into the cord loops. Turn the beam handle clockwise one time around and then straighten the bars so they are parallel to the beam. Put the warp beam tie-on bar over the back beam (or breast beam) and inside the loom towards the shafts.

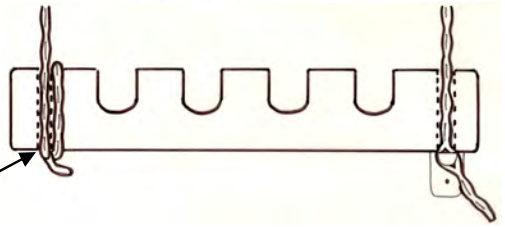
Shaft Holder Assembly

After your warp is beamed, assemble the shaft holders
A shaft holder is a wooden device which hangs from the top of the loom and holds shafts while you thread the heddles and tie up the loom. To assemble the shaft holders, use the two texsolv cords with white twist ties from your tie-up kit. See also p. 29 in Learning to Warp your Loom.

1. Make a loop in the cord and tighten it around the end of the shaft holder. Thread the long end through the hole from the bottom up.
2. Place the other end of the cord over the countermarch frame. Thread the cord down through the hole in the other end of the shaft holder. Button an anchor pin into a hole in the cord and set the anchor pin legs into the hole in the shaft holder. The shaft holders should be approximately 3 feet up from the floor.

To make a loop in the cord, thread one end of the cord through a hole in the other end of the cord.

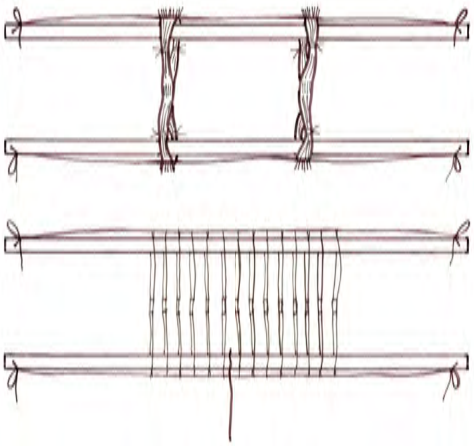




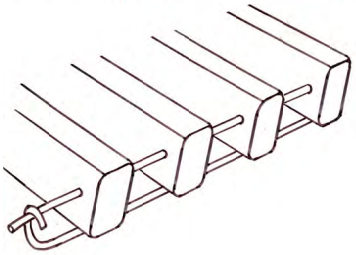
Cord is threaded through the hole in the holder

Shaft Assembly

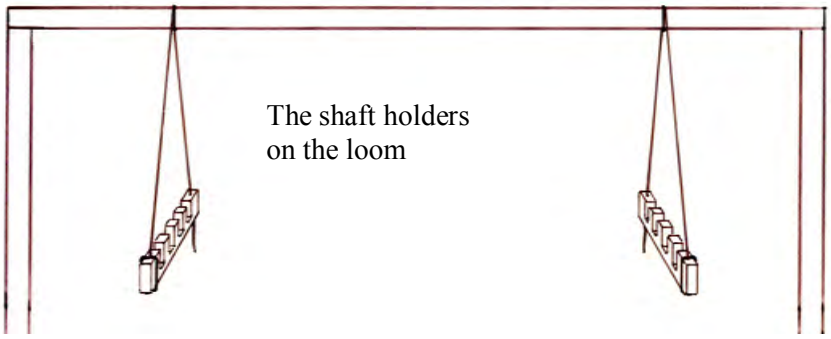
Put heddles on your shaft bars
Assemble the number of shafts and heddles you need for this warp. Put the hooks into the top shaft bars. See page 2.
It is helpful to assemble the shaft bars on a table. Put the heddle bundles on the shaft bars. Then remove the heddle twist ties and spread the heddles out across the shaft bars. If you are putting on a wide warp, tie a retaining string on each shaft bar to prevent the heddles from falling off the shaft ends. For this, cut a string for each shaft bar, about 10 inches longer than the bar. Tie the cord through the holes in the ends of the shaft bars.
You can also read shaft assembly instructions in Learning to Warp your Loom, p. 28, 29. The cords with the pink ties can be put in the center of the bottom shaft bar. See page 9 for how to use the beads.



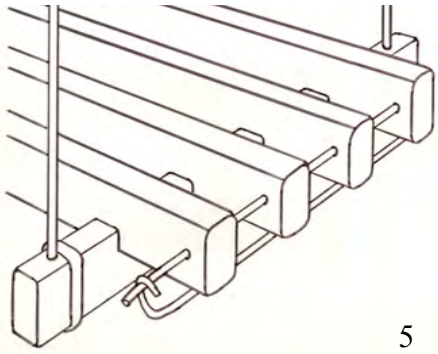
Attach shaft pins for stabilizing shafts
Place the shafts in order on top of each other on the table and put the four shaft pins in place. The pins are threaded through the holes in the ends of the shafts.



Set the shafts in place
Carry the shafts to the loom and center them on the shaft holders. Now you are ready to thread your heddles.



The shaft holders on the loom



Reading Weaving Drafts

How weaving drafts are written
Weaving drafts are your recipe for weaving. *Threading draft* is written horizontally. It tells you the order for threading your heddles. The *treadle tie-up draft* tells you how to tie up your treadles. On both the threading and tie-up drafts, the horizontal rows represent the shafts. The bottom row represents the front shaft, usually labeled #1 and the top row represents the back shaft.

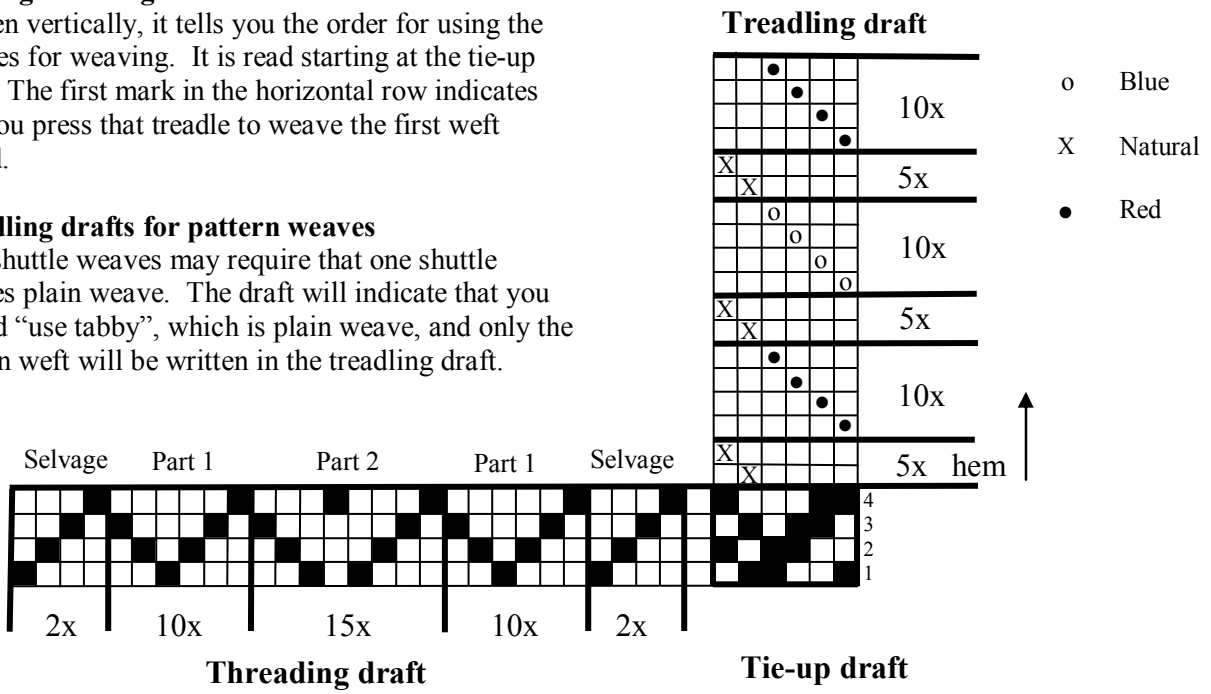
Reading treadle tie-up drafts
Each vertical row represents a treadle. Symbols, such as a blackened square or an "X" in the draft, indicate that the shaft will go down when that treadle is pressed down. The empty spaces represent shafts which rise. For four shaft weaves, six treadles are required to tie every combination of two shafts up and two shafts down. This is called a standard tie-up.

Reading treadling drafts
Written vertically, it tells you the order for using the treadles for weaving. It is read starting at the tie-up draft. The first mark in the horizontal row indicates that you press that treadle to weave the first weft thread.

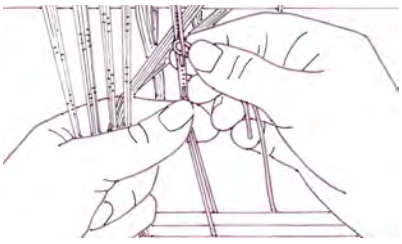
Treadling drafts for pattern weaves
Two shuttle weaves may require that one shuttle weaves plain weave. The draft will indicate that you should "use tabby", which is plain weave, and only the pattern weft will be written in the treadling draft.

Reading threading drafts
The threading draft is read from the right to the left and the vertical rows represent the warp threads. The threading is indicated by an X, a vertical line or a blackened square as in this draft. In the 4 shaft threading draft below, the first thread (on the right) is threaded on the back shaft, #4 (top row). The second thread is on shaft #3. Sometimes the numbers are used in the threading draft, especially with drafts with more than four shafts. If there is more than one part to the threading, it can be indicated by Part 1 and Part 2 written above or below the draft. Selvages are sometimes indicated.

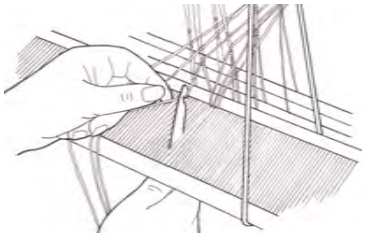
Symbols and abbreviations
Symbols can be used to indicate colors or different types of threads. Repeat threading of a section is indicated by a number and "x" for times.



Threading heddles and sleying the reed



See pages 30-32 in Learning to Warp your loom. Hold the warp yarns and heddles in your left hand. Select the first yarn with your right hand and release the appropriate heddle from your left hand. Put the loop through the heddle's eye. Pull the thread forward and push the threaded heddle to the right.



Hang the reed to sley it in comfort. Tie two long cords to form loop holders, one for each end of the reed. Put the reed into the two loops. Adjust the height of the reed so that it sits horizontally just below the eyes of the heddles.

My First Towels

If you would like to follow written instructions for your first warp, this towel project is an easy warp to make, thread and weave. You can weave these towels on two or four shafts.

Follow the warping instructions in the book, **Learning to Warp your Loom**
To purchase the threads, temple, shuttle or other supplies you need,
or if you would like to purchase this project as a towel kit, see page 18.

Weave Plan

Item: *four towels* Weave: *plain weave or twill*
Warp Thread: *8/2 cotton or cottolin, approx 8-10 oz*
Weft Thread: *8/2 cotton or cottolin, approx 8-10 oz*
EPI (sett, or warps ends/inch): *24* Weaving Width: *20"*
Reed: *12* Total # of warp ends: *480*
PPI (picks or wefts per inch) plain weave: *18-20* twill *24-30*
# of threads in a heddle: *1* # of threads in a dent: *2*
# of bouts (sections of the warp): *2* # of threads in a bout: *240*
# of shafts: *4* Number of heddles / shaft: *120*
Warp length: *4 yards*

If you warp back to front, use the 12 dent reed for pre-sleying. If you wind two threads at a time, put 4 threads in a dent and skip a dent. If instead, you use a raddle, put 12 warp threads in each 1/2 inch space.

Threading of warp ends:
Four shaft, 4,3,2,1
Two shaft, 2,1

Warp color order
24 natural
12 black
72 natural
24 red
72 natural
12 black
24 natural

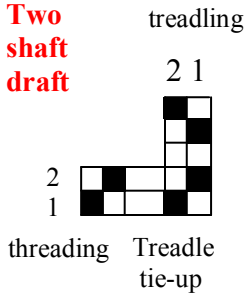
240 total

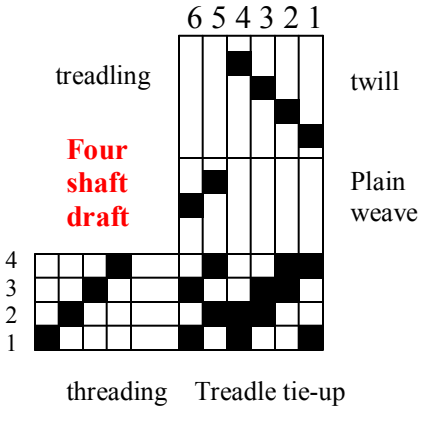
Weaving with two shafts
Thread two shafts.
Put two treadles on your loom.

Weaving with four shafts
Put 4 shafts and 6 treadles on your loom.

Treadling for plain weave:
Use treadles 5 & 6
(shafts 1&3 alternated with 2&4)
Treadling for twill:
Use treadles 1, 2, 3, 4

Finished size:
after finishing and hemming:
16-17" x 24"





Following pre-planned instructions for a weaving project is a good way to learn to weave.

Tying Your Warp

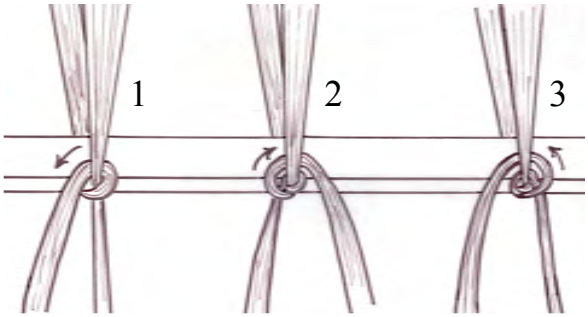
See also pps 33, 34 in Learning to Warp your Loom

Put the shafts in position for tying the yarns

If your shafts are hanging from the wooden cross beam, transfer them to the countermarch frame. Do this carefully, one shaft holder at a time. Adjust the height of the shafts so that the top shaft bar is 37 1/2 inches off the floor. Measure to center the warp in the beater.

Prepare for tying

Unwind the tie-on bar from the cloth beam and place it between the breast beam and the reed, checking to be sure that it is parallel to the breast beam and centered in the loom. Put both pawls into the ratchets.



Start at the center of the warp

Use 2/3 to 1 inch of warp in each bundle. Use smaller bundles for the ties at the selvages. Start at the center. Straighten the yarns and divide them in the middle into two halves. Put half on top of the bar and half under it. Tie as in the diagrams. If it is easier for you, tie the threads as you would tie your shoes. It is not necessary to pull the warp tightly.

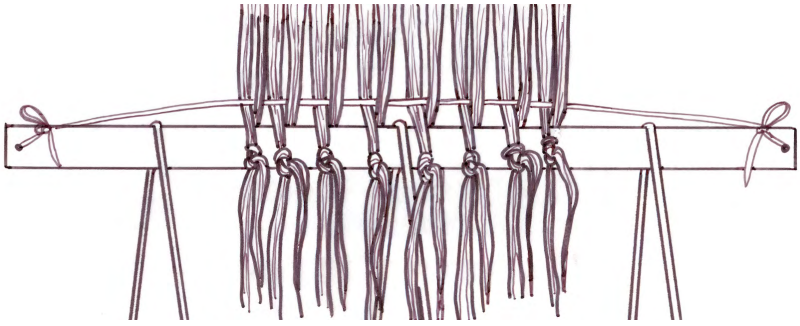
Equalize the warp tension

Feel the tightness of the yarn in each knot with your finger frequently to maintain an even tension. If there are some bundles which are too tight or too loose, untie and re-tie those bundles. Absolute perfection is not necessary, as the weft will even out the tension within the first inch or two of weaving. Finish each tie with a knot or a bow.

Leveling the warp and adjusting the shafts

Tie the leveling string

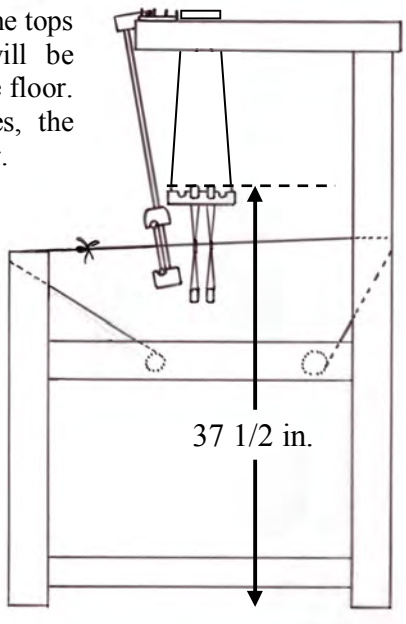
When all the yarns are tied, a leveling string is used to level the yarns. Use a smooth strong string or cord which is about a foot longer than the bar. Tie one end through the hole at the end of the bar. Thread the other end through the warp, going under the yarns which are on the bottom of the bar, and over the yarns which are on the top. Pull this cord tight and tie it to the other end of the bar, pulling it close to the knots. This will level the warp yarns.



Adjust the height of the shafts

Tighten the tension on the yarn to check the height of the shafts. The warp yarns should travel in a straight line from the breast beam to the back beam.

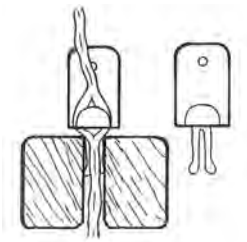
With 9 1/2 inch heddles, the tops of the top shaft bars will be about 37 1/2 inches off the floor. If you use longer heddles, the top shaft bar will be higher.

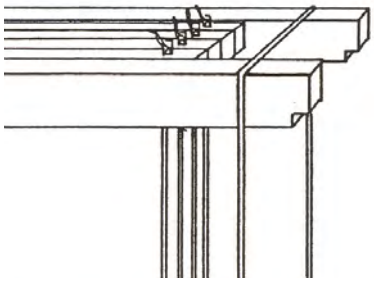


Julia Four Shaft Countermarch Tie-up

1. Attach cords with green ties to the countermarch jacks

Use 8 of the jack cords (green ties, 17 inches long). Button the cord onto the button on the anchor pin. Thread the cord through the hole in the jack, as in the diagrams. Use the front four jacks on each side of the countermarch.





Use the front four jacks

Cord threader
If it is difficult to thread the cord through the holes, use a cord threader.

2. Shaft hooks These cords from the jacks go down and hook to the shaft bar hooks. Measure to be sure that the tops of the shaft bars are 37 1/2 inches from the floor.

3. You can use beads or anchor pins for tie-ups

If you want to use beads, attach a bead to a cord as in the photos. First thread a bead onto the cord. Then, thread one end of the cord through the last hole in the other end. Pull the cord so it is snug around the bead.

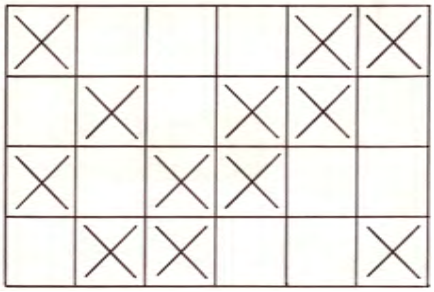
Attach cords to the bottom shaft bars

Find the center of your warp and spread the heddles apart a couple inches. Thread the 13 inch cords (pink twist ties) through the center hole in the bottom shaft bars, as in photo **#4.** The bead sits on top of the shaft bar. The cord hangs down at the center of your warp threads. You can also use an anchor pin here.

Attaching Countermarch Treadle Cords to Upper Lamms

Standard treadle tie-up draft

See page 6 to learn how to read a treadle tie-up draft. This draft is used as an example. The treadle tie up draft for your project may be different from this one. This draft, called the standard tie-up draft, has every combination of two shafts up, (represented by the empty spaces) and two shafts down (the Xs). The Xs represent the shafts which will be pulled down by the upper lamms.



Attach the black beads

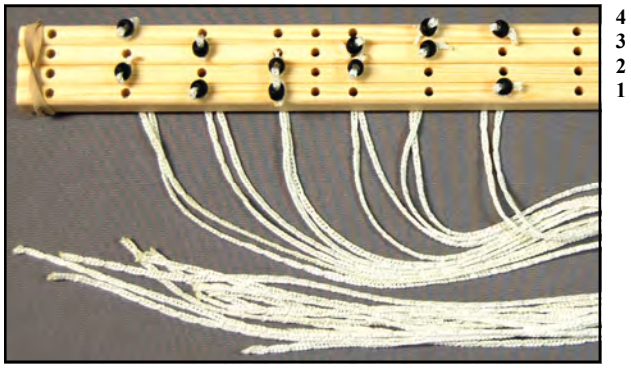
Take 12 long treadle cords (21 inches long, brown twist ties). Attach the 12 ***black*** beads to these cords.

Attach treadle cords while sitting at a table.

Put rubber bands around the ends of the lamms. Number the upper lamms 1 (bottom) to 4 (top). Put the treadle cords into the holes in the lamms according to your tie-up draft (the Xs in the tie-up draft).

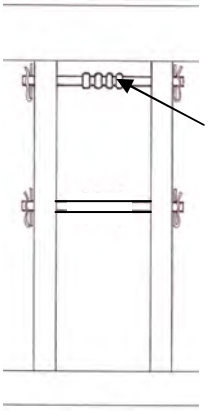
Mounting the lamms onto the loom

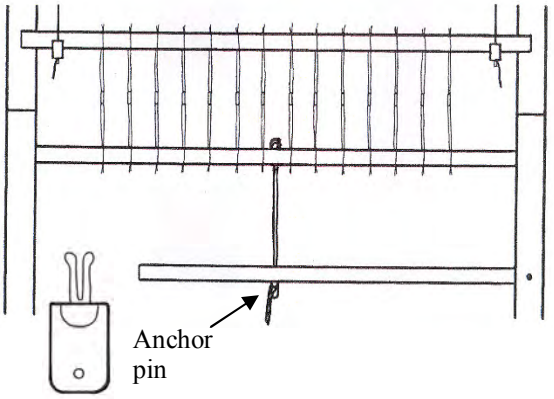
The right side of each lamm has a hole for mounting. Put the lamms on the top metal lamm rod at the right side of the loom, #1 lamm in front. See page 10.



Attaching the upper lamms

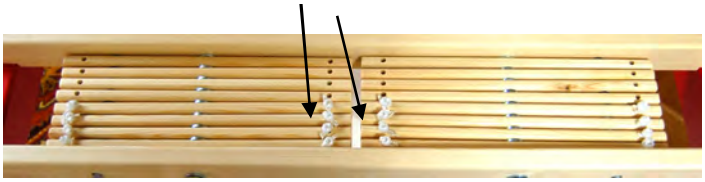
For more comfort, and with the help of another person, you can set the loom up on a table. Now attach the cords which are hanging down from the center of the shafts. Start with the back shaft. Thread the cord down through the center hole in the back upper lamm. Secure the cord with an anchor pin. Remember to button it. It should be approximately level with the floor. Attach the other three cords.

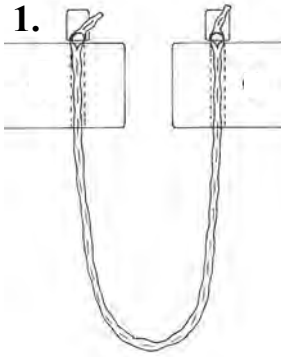


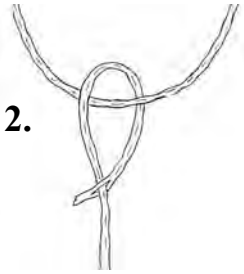


Attach the Center Jack Cords

1. Attach center jack cords Take 4 cords with the blue twist ties (18 inches long). Thread them into the holes in the front four jack pairs in the center of the countermarch. Use anchor pins to attach the cords.





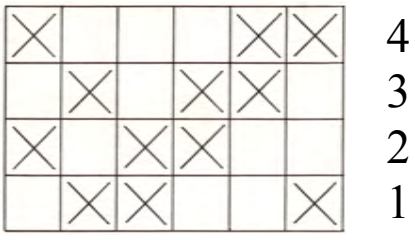


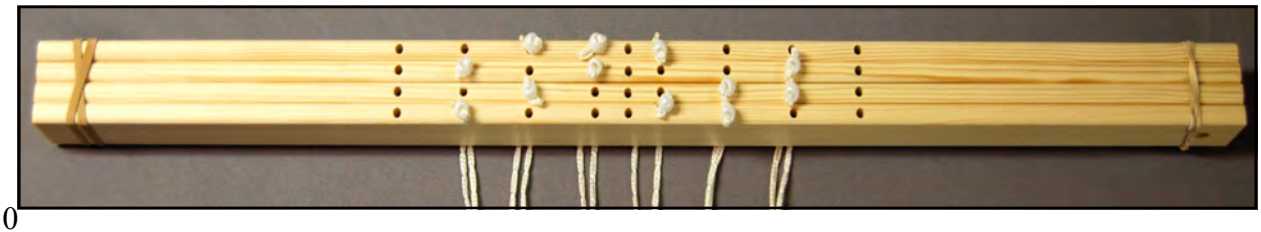
2. **Attach the long cords**
Use 4 cords (34 inch long, red twist ties). Wrap one cord around the front U cord and thread the end of the cord through the last hole in it's other end. Pull the cord to

Drop this cord down behind the first shaft and the first lamm. Attach the other three long cords, putting each behind it's shaft and lamm.

Put Treadle cords into the Lower Lamms

Attach the white beaded cords to the long lamms
Take 12 of the shorter treadle cords (14 inches long, yellow twist ties). Attach the ***white*** beads to these cords. Number the four lower (longest) lamms as shown, 1 to 4. Put the treadle cords into the lamms according to the white (empty) squares in the draft. These treadle cords will raise these shafts when you make treadle.

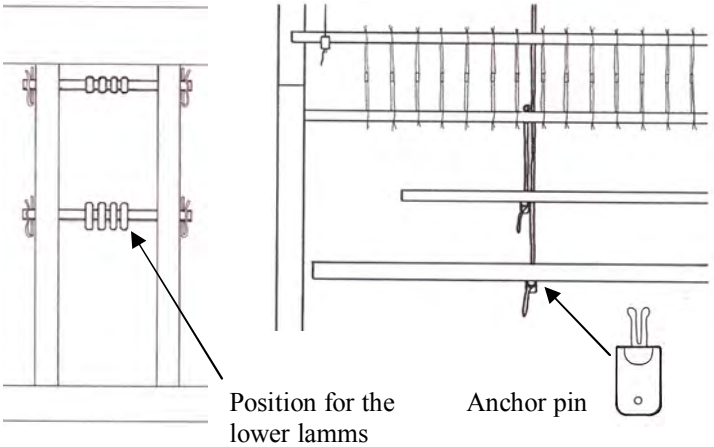




Tying up the Lower Lamms

Lower lamm tie-up

The lower lamms are mounted under the upper lamms, on the lower metal lamm rod. Start with the lamm in the back. The cord which comes down from the center of the countermarch, behind the shafts and upper lamms goes into this lower lamm. Thread this cord down through the center hole. Secure the cord with an anchor pin. As you attach each cord, be sure that the cord goes behind the corresponding upper lamm. The treadle cords on the upper lamms go down in front of the lower lamms.



Height of the lamms

The anchor pins make the cord lengths easy to adjust. Make the lamms approximately level with the floor or rising slightly. Adjust them so that all the lamms are about the same height. The holes are 1/2 inch apart, so there will be some variation in the height of the lamms.

Assemble Treadles for Tie-up

Practice putting the anchor pins in

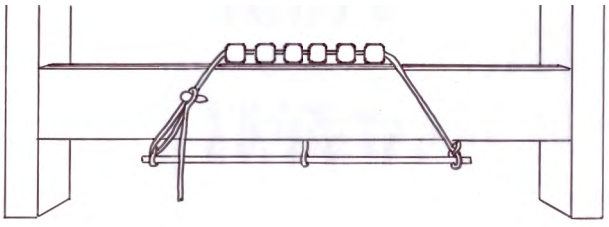
Take one treadle, turn it upside down and practice inserting the legs of the anchor pins. This will help you to do this later with the treadle cords in place. Note that the two legs need to be wedged together to fit into the hole.

Assemble your treadles in the tie-up position

Leave the locking pins in the countermarch and the shaft holders on the shafts. The treadle tie-up is done with the treadles placed on the top of the treadle beam. See diagram below. Later when you are ready to weave, you will put the treadles onto the lower metal bar, below the treadle beam.

Attach the Treadle cord

Take Texsolv tie-up cord (or any cord or string) and loop it into one screw eye on the treadle beam. Thread the cord through the holes in the treadles. Be sure that the side of the treadle with the reamed out holes is on top. Attach the end of the cord on the other screw eye with an arrow peg or tie it on. Do not pull the cord tight.



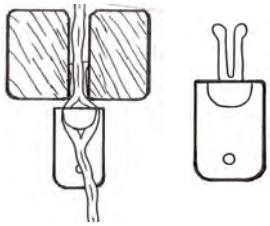
Upper lamms with black beaded treadle cords

Take your tie-up draft and sit at the front of the loom. You have all the treadle cords in place according to the tie-up draft. The treadle cords with the black beads come from the upper lamms down in front of the corresponding lower lamm, straight down to the treadle below.

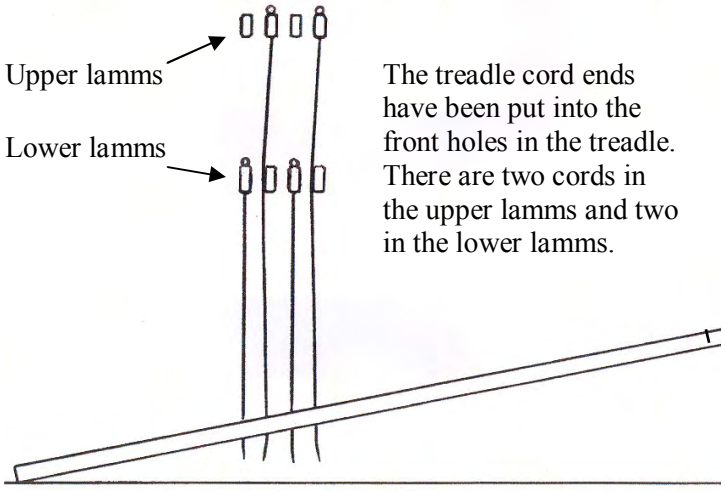
Lower lamms with white beaded treadle cords

Check your white beaded treadle cords to be sure they are correct, filling each blank space in the tie-up draft. Now you are ready to put the cords into the holes in the treadles. Get your cord threader, your treadle tie up draft and the rest of your anchor pins.

Tie up the treadles
If you have a four shaft weave, put the four cords through the **front** four holes in the treadle. Use the cord threader if needed. Button an anchor pin into each cord and put the legs of the pin into the hole in the underside of the treadle, as shown in the diagram. The treadle should be touching the floor. The treadle cords should go straight down to the treadle hole. Tie up all the treadles.



This diagram shows the cords in place for one treadle.

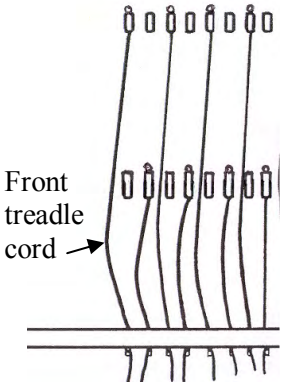


The treadle cord ends have been put into the front holes in the treadle. There are two cords in the upper lamms and two in the lower lamms.

Note It is helpful to practice putting the pins into the treadle holes before you start the treadle tie-up. If you find it is difficult to put the anchor pins into the treadles, turn the treadle sideways to push the pin in so that you can see the hole. To do this, you need to set the treadles up as shown on page 11.

Evaluating your tie-up

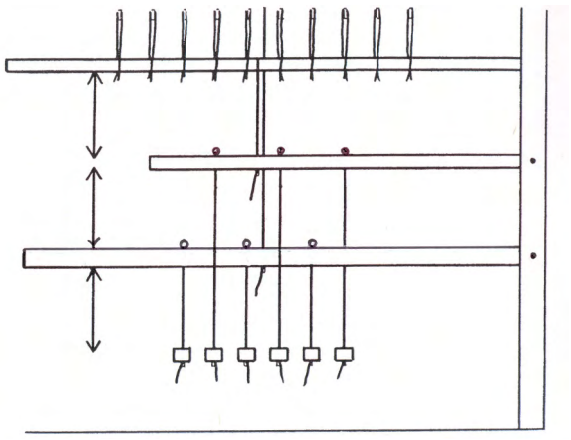
Put the treadles onto the treadle rod
Take the treadle tie-up cord out of the treadles and attach the treadles onto the metal rod. This is the weaving position. Use the treadle spacers to fill the metal rod. Each treadle sits directly below the treadle holes in the lamms.



With more than four shafts tied up, there will be more difference in the lengths of the treadle cords from the front to the back.

Cord lengths
After the treadles are put into the weaving position, you will see that the treadle cords in the front will be looser and longer than the cords in the back. This is the result of the angled position the treadles had for the tie-up. This assures that you will have a good shed, since the treadles move further down in the front than in the back when you are treadling.

Evaluate the height of the lamms and treadles
Take note of the placement of the two sets of lamms and their distance to the shafts and to the treadles. To give each part enough space to move, there should be about equal space between each set of moving parts. Before making any changes in the height of the lamms, read page 13 and start weaving.



Note!
When weaving will all 8 shafts you will need to be more careful about the spacing of the lamms. For instance, if there is more space between the shafts and the upper lamms, then raise the upper lamms by shortening their center cords by one hole. If the lower lamms touch the treadles, lower the treadles.

Check for errors and begin to weave

Try your sheds
Remove the shaft holders, wire shaft pins and the countermarch locking pins. Tighten your warp. Check that your shafts are 37 1/2 inches off the floor, measured from the top of the shaft bars. If you have a heddle size different from 9 1/2 inch heddles, this measurement will be different. Put the beater in the middle position and weave an inch. Check for any crossed threads, threading or sleying errors and correct any you find.

Ideal shed size
The shed should be about 1/2 inch larger than the height of your shuttle. Don't increase the size of the shed if the shuttle easily passes through the shed. Your weaving and your selvages will be better if the shed is not too large.

Making the shed larger
To evaluate your shed size, put your temple on (See page 16 for information about temples). Your treadles should come close to or touch the floor when you make a shed. Weave a little to even out the weave and eliminate any sticky warp threads. Advance your warp and check your shed size. If your shuttle does not easily go through the shed, you can shorten the treadle cords to make the shed larger. The treadle on the left (opposite where the lamms attach to the loom) moves the most when you treadle. Test this treadle to determine if the shed is large enough. If the treadle touches the floor when you are treadling and you want a larger shed, you can make the treadle cords shorter. Take each anchor pin out of it's hole and put it into the next hole up. This makes the cords one hole shorter. This will set the treadle a little higher and give you a larger shed.

Look at the bottom of each shed at the beater
Check one treadle at a time. If the warp threads make an even bottom on your shed, you have successfully finished your loom tie-up and you can weave. After weaving a while, determine if you want to perfect any of your sheds.

Perfecting your sheds

The tie-ups you have made for the jacks, shafts and lamms never need adjusting. They are done one time and you have completed their tie-up. Adjustments for perfecting sheds are only made with the treadle cords.

Perfect the bottom of the shed
Look at the bottom of each shed. These are the threads which are pulled down by the upper lamms. Press on each treadle and write down which shafts are not pulling the threads down far enough or are pulling them down too far. If a shaft goes down too far, you need to lengthen it's treadle cord. If a shaft doesn't go down far enough, you need to shorten it's treadle cord. Write down the adjustments needed for each treadle and then adjust the lengths of the treadle cords. Move the pins just one hole in the cord. Check again after making the adjustments and the shed should be just right.

Look at the tops of each shed
If the warp threads do not make an even, flat top on your shed, write down which shafts are out of line. These will be the cords coming from the lower lamms. If a shaft goes up too far, lengthen the treadle cord to that shaft. If a shaft doesn't go up far enough shorten it's treadle cord. Change the cord length just one hole. Be careful not to tie the treadles up too high.

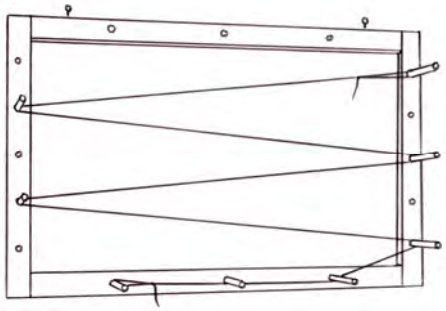
Saving your treadle tie-up

If your next project will use the same treadle tie-up, you do not need to take the anchor pins out of your treadles. You can save this treadle tie-up by simply leaving the treadle cords in place. When you start to put on your next warp, it will be easier to thread the heddles if the weight of the treadles is not on the shafts. And releasing the lamms allows you to put the shafts in a comfortable position for threading. To release the lamms and treadles, remove the 8 anchor pins from the centers of the lamms. You can mark the holes in the lamm cords so that you will know where to put the pins when you put them back in later. After the new warp is tensioned, reinsert the anchor pins into the marked holes in the lamm cords and pin them into the lamms. Then you are ready to weave.

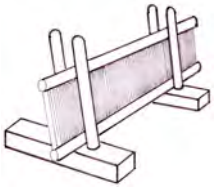
Glimakra Equipment you may need

Glimakra's Sofia warping frame
As shown in the DVD, winding your warp can be done right on the back of your loom. With the warping frame, you can wind up to 9 yard warps accurately and easily. Removable dowels make it easy to take warps off and to disassemble and store the frame. Dowels which are not needed for your warp can be removed to avoid mistakes. You can make your cross on the top, bottom or on the sides.

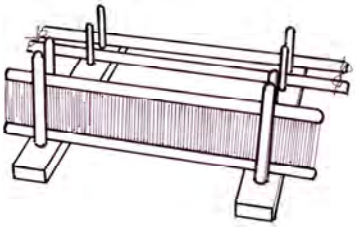
Sofia Warping Frame



Reeds and reed holders
Glimakra reeds in sizes from 5 to 30 dents per inch are available. The holders hold the reed for spreading the warp for pre-sleying when you do this on a table. Longer reed holders can also hold the lease sticks.



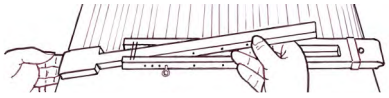
Reed in holder



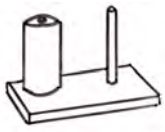
Long reed holders hold lease sticks

Spool holder
Spools and tubes can be held upright for easier winding of your warp. If you need more than two tubes, ask about Glimakra's 12 spool holder.

Glimakra temples
To improve the quality of your weaving, temples are very helpful. See page 16.

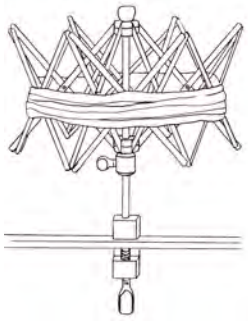


Temple



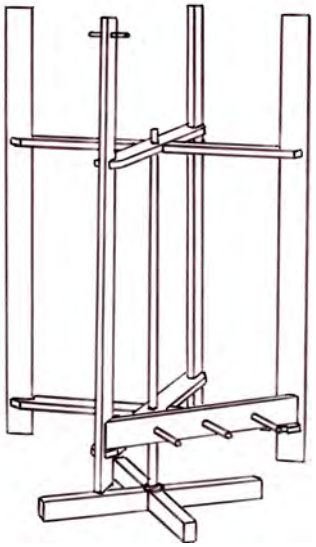
Spool Holder

Glimakra Umbrella swift
Glimakra has been making these swifts for over a half century. They are sturdy and have a non-slippery finish so that it is easy to put the yarn on. The large swift holds a 100 inch skein and the regular holds a 72 inch skein.



Umbrella Swift

Glimakra Warping Reel
For winding longer warps, the warping reel makes winding faster and more accurate. The one shown is 8 feet around and can wind warps up to 28 yards long. There is a larger one which is 10 feet around and can wind 64 yard warps. Both models can have an extra cross beam available.



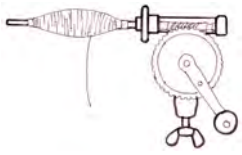
Warping Reel

Glimakra boat shuttles
For more rhythmic and faster weaving, boat shuttles are easy to throw and catch. Sizes range from 8 in to 15 in long. They take quills from 3 in to 6 in.

Boat Shuttle

Glimakra bobbin winder and quills
Use the bobbin winder to wind quills for your boat shuttles.

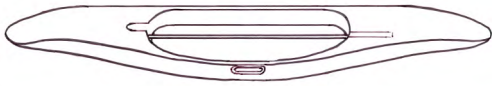
Quills



Bobbin Winder

Shuttles

Boat Shuttles
You may want to use a boat shuttle for weaving, as it glides through the shed easily and the yarn is drawn out of the shuttle as needed. A shuttle which is comfortable and easy to use is one which is slender and not too heavy. Shuttles should have an outward curved shape where the thread hole is, for smoother traveling of the yarn.



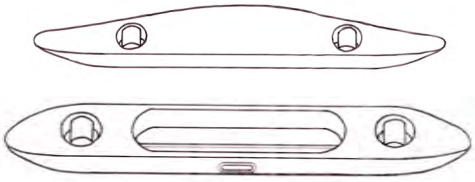
Shuttles can have a solid or open bottom
The boat shuttle with a *solid bottom* will have a smooth bottom surface for the shuttle to glide across the warp. An open bottom allows you to stop the quill from the bottom with your finger, useful when weaving narrow warps. This shuttle below is heavier and made to travel across a wider warp.

Shuttle with an open bottom

Ski Shuttle for rug weaving

Sizes of boat shuttles
Boat shuttles are usually from 11 to 13 inches long. They are seldom more than one inch tall and two inches wide. A spindle length of 5 inches will hold a quill which is 4 - 4 1/2" long. A shuttle with a longer spindle, holding more yarn is better for thicker yarns. This usually requires the shuttle to be 13-15 inches long.

What boat shuttle is best for wide warps?
A shuttle which is longer, 13-15 inches, will travel better across wide warps. This additional length helps you to aim the shuttle in a straight path. It should not weigh more than 6 or 7 ounces.



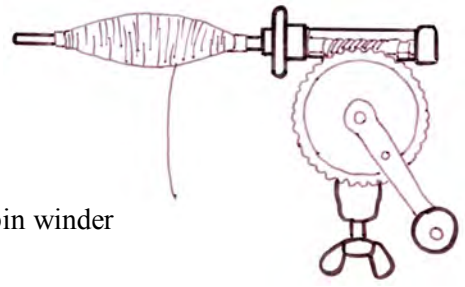
Rollers on the bottom of a shuttle will help the shuttle travel across a wide warp.

Double Ski Shuttle for thick yarns

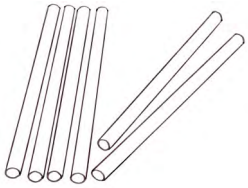
How to wind a quill
Attach the yarn around the quill using a simple knot that will easily untie when the quill is emptied. Sit with the spindle of the winder facing you, holding the yarn in your left hand. Turn the handle clockwise while your left hand moves back and forth rapidly, holding a slight tension on the yarn.

Note! Wind no closer than 1/4 inch from the ends of the quill. Traverse a shorter and shorter path, making the center the thickest part. Do not overfill.

Quills are made of cardboard and come in many lengths, up to 6 inches long. They can be cut to length with a knife or strong scissors.



Bobbin winder



Quills

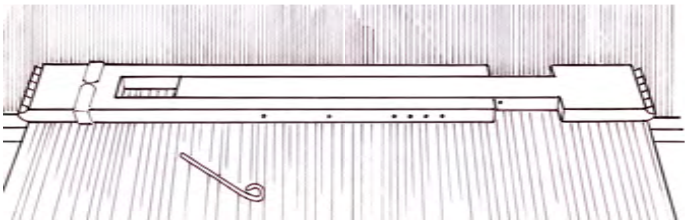
Temples

What does a temple do?
A temple is a traditional weaving tool, with evidence of its use going back many centuries. A temple will improve the quality of your work as well as make the weaving easier. A temple will give you a more even beat, increase your speed, create more rhythmical movements, give you a tighter weave, and make the beating physically easier. As a result, your selvages will also be better.

Temple in use on My First Towel weaving kit on a countermarch loom

When should I use a temple?
A temple is necessary to produce good quality weaving. If, after you start to weave, your warp in the reed is wider than at the fell (where the last wefts were woven), you need to use a temple.

How do I set the length of the temple?
Take the pin out of the temple and place it up side down on the warp at the reed. Extend the temple so that its length is the same as the width of the warp, with the wooden ends extending just beyond the selvage yarns. Replace the pin where the holes line up.



Check your temple placement
Pull the beater to the fell, with the temple in place. The selvage warp yarns should not be pulled out or in by the reed. Adjust the length if needed. Advance the temple after about an inch of weaving.

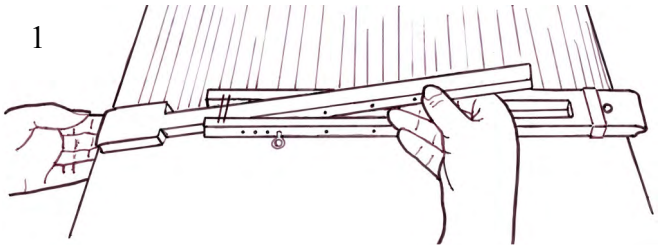
1. A temple holds the woven material
When you weave without a temple, the natural narrowing of the material causes the warp yarns at the selvages to be too close together. This causes the weft to rise at the sides and it is seen clearly when you weave weft stripes.

2. Using a temple keeps selvage yarns from becoming loose
Using a temple will prevent draw-in, so you can make snug, even selvages. There is no need to pull yarn from the shuttle before throwing it.

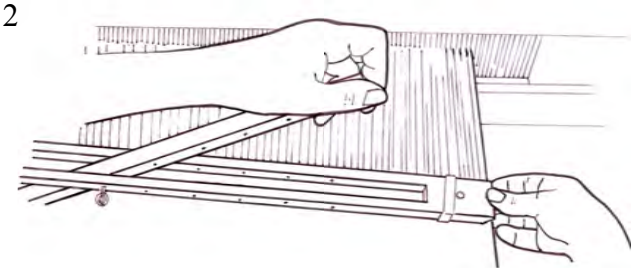
3. Using a temple prevents selvage warp yarns from breaking
If you don't use a temple, draw-in at the selvages and the narrowing of your material will cause the selvage warp yarns to be worn by the beater, fray and eventually break. A temple cannot correct this problem, but it will prevent it.

How do I place the temple on the web?
Place the temple right side up near the fell (last wefts woven) of the weaving. Set the teeth into the last warp yarns of the woven selvages, first on one side, then the other. Push the temple down slowly and slide the metal holder to the center to keep the temple flat. You should be able to see the last few wefts that you wove and the reed should not touch the temple when you beat.

1



2



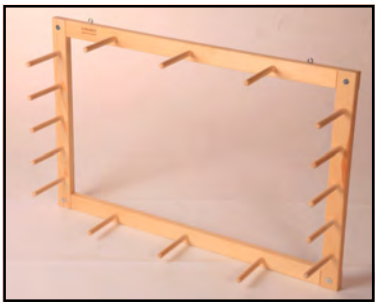
3

Glimakra

Warping reels
Regular size,
8 feet around
48 inches tall

Larger reel,
10 feet around,
78 inches tall

Folds or can be taken apart for storage



Sofia warping frame winds a 9 yard warp. Easily taken apart for storage

Glimakra Bench
Adjustable height
Fits most average sized floor looms.

Spool holder
Holds 12 spools

Emilia
folding rigid heddle loom
weaves
13 1/2 and 19 inches wide

Susanna Rigid Heddle Loom
Weaves 27 inches wide

Glimakra Standard
The standard among floor looms,
40, 47, 59 and 63 inch weaving widths