

# Sailrite Cushion Instructions

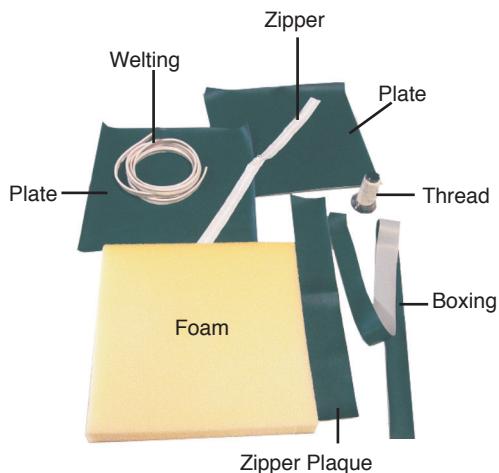
## MATERIALS REQUIRED:

- Precut "open cell" foam (no water absorption — water runs right through it),
- Fabric to cover the foam with marked "outer" surface (many fabrics have an "outer" and an "inner" side and marks can help distinguish between the different sides),
- A zipper several inches longer than one side of the cushion,
- Enough welting to go around all cushion edges,
- Polyester "outdoor" thread.

## STEP #1

### CUTTING OUT THE CUSHION PIECES

The first step is to cut out all of the cushion pieces from the fabric. There are two "plates" for the upper and lower cushion covers, a zipper plaque rectangle that is 1-1/2 inches wider than the depth of the foam to allow for the installation of the zipper, and "boxing" that goes round the edges of the cushion. The boxing will be the same width as the foam. See **Figure 1**.



**Figure 1**

Cut just outside the lines on the fabric so it will be clear that that surface is the "outer" one. Note that the boxing and the zipper plaque may be in two or more pieces requiring that they be seamed together (more about this later).

All fabric cutting can be done with scissors or a "hotknife". The latter can be a soldering iron or gun with a narrow blade or it can be a specially designed tool. The advantage in cutting a synthetic fabric with a hotknife or soldering gun is that the edge can be cut and sealed at the same time. Scissors will not seal the edge but this is not a serious problem with cushions where all the raw fabric edges are inside the cover. Any raveling should go unnoticed.

**NOTE:** the open cell foam is always cut 1/2 inch larger in all directions than the intended size of the finished cushion. The fabric plates are cut to the same size as the foam. And the boxing is cut to the same thickness as the foam. Since 1/2 inch is required along the edges of the plates and the boxing for seam allowance, the foam will actually have to be "stuffed" into the cover. This helps to make the finished cushion surface smooth and firm.

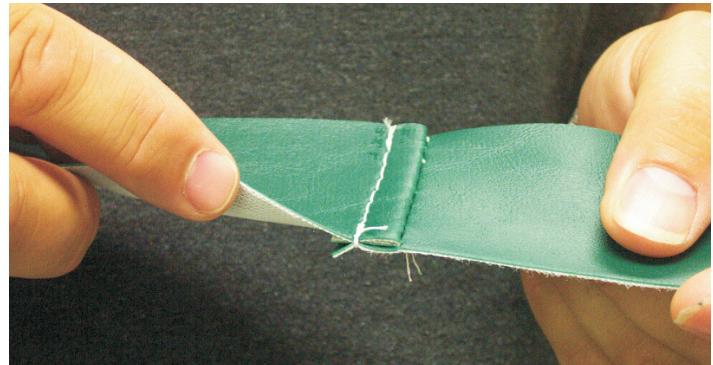
## STEP #2

### PREPARING THE ZIPPER PLAQUE

The zipper plaque is fashioned from a strip (or strips) of fabric that are 1-1/2 inches wider than the thickness of the foam. If there is more than one length of this material, they must be joined together end-to-end. Simply lay one on top of the other and put a row of straight stitches 1/2 inch inside the matched edges. **Figure 2**. Then spread the two panels to their full length and use a row of straight or zigzag stitches to hold the seam allowance up against one or the other side (this is often called a "topstitch"). **Figure 3**.

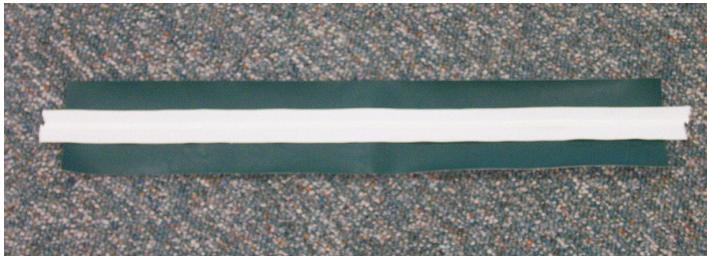


**Figure 2**



**Figure 3**

Now trim it to proper length. It should be roughly 6 to 10 inches longer than the side of the cushion along which it will run. The longer the zipper plaque, the easier it will be to insert the foam — a 6 inch longer plaque is fine for small cushions. While you are at it, trim the zipper to a length about 2 inches longer than the plaque. **Figure 4.** It can be cut with a scissors.

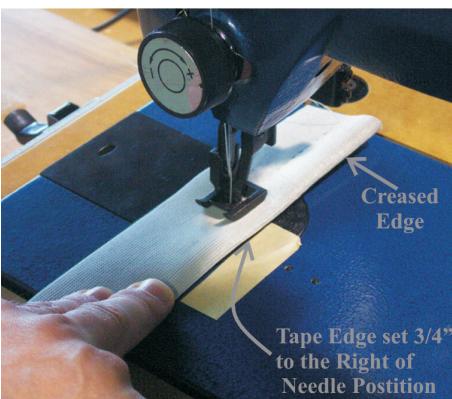


**Figure 4**

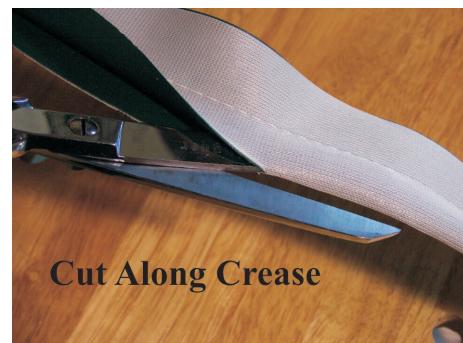
Fold the plaque in half down its length keeping the "good" side of the cloth inside. **Figure 5.** I like to crease the fold over the edge of a table to make it more distinct. Then run a row of straight stitches just 3/4-inch away from the fold all along the length of the plaque. **Figure 6.** Cut the plaque on its fold. The result is two pieces of cloth sewn together 3/4-inch from one edge. **Figure 7.**



**Figure 5 — Folding the plaque down its center**



**Figure 6 — Using a "Swing Gauge" to sew the folded plaque**

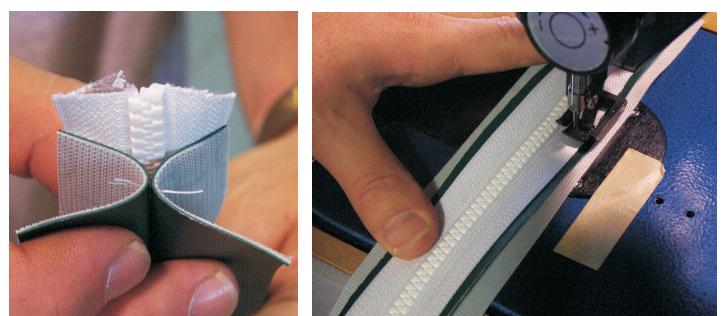


**Figure 7 — Cutting on the plaque fold**

Splay the plaque out flat with the 3/4-inch side up (the "good" side will be down). Press the two 3/4-inch edges down away from the stitching so that the parts touch only where they are sewn. **Figure 8.** Place the closed zipper on top of the border with the teeth centered over the stitches. The zipper slider may be removed from the tape completely at this point — we will replace it shortly. Note that the zippers have no "right" or "wrong" side. Nor is there a "right" or "wrong" direction for opening and closing the zippers. **Figure 9.**



**Figure 8 — Splaying the sewn and cut plaque**



**Figure 9 — Sewing the zipper tape to the plaque**

Sew both sides of the zipper to the plaque tape with a row of straight stitches. Start sewing with about 1 inch of the zipper tape extending out over the end of the plaque. The zipper is, you will note, being secured to the "inner" surface of the plaque in **Figure 9**. It may be helpful to use a zipper foot for this task although the stitches should be about 1/4-inch or so from the teeth and this can normally be accomplished without a special foot. When both sides of the zipper are secure, rip the stitch that joins the two halves of the zipper plaque down its center. **Figure 10 & 11**. Remove the broken stitch remnants.



**Figure 10 — Ripping the plaque center seam**



**Figure 11 — The finished zipper plaque**

Now put the slider back on the zipper tape (assuming it was removed as directed above). Pull the zipper teeth apart on one end for three or four inches and push the lead end of the slider onto the separated sides at the same time so that the teeth mesh together. Be careful to install the slider so the pull tab is on the "fabric" or "outer" side of the plaque. **Figure 12**. Run the slider about half way into the zipper's length and leave it there. Note that the slider will close the zipper as it is run along the tape while opening it in front. **Figure 13**. This is perfectly normal. There will be a small opening in the zipper tape in front of the slider.

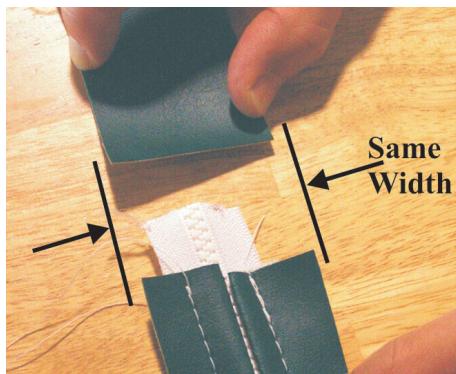


**Figure 12 — Starting the zipper slider — note the slider's pull tab is on the "plaque flap" side**



**Figure 13**

Check the width of the finished plaque now. It should measure exactly the width of the cushion foam. If it is too wide, simply cut it down to size. If it is too narrow, take this into account when joining it to the plate and the welting. **Figure 14**. That is, cut the seam allowance of the plaque to allow for the shortage in width.



**Figure 14**

## STEP #3

### SEWING WELT TO THE PLATES

We are going to attach the welt to the plates and then the boxing to the two plate/welt assemblies. Breaking the task down like this means that there is less likelihood of error. The work can be made even more manageable by using a stapler or double sided basting tape to hold things in place as they are sewn. Frankly, I do not find this necessary but it is, nevertheless, one more aid to use if there is trouble. The use of a welting foot like that built into the Sailrite Ultrafeeds is a big help since the presser foot can be placed right on top of the welt which helps to keep everything lined up. **Figure 15.** If that is not available, a zipper foot can be used to install a stitch right along the swelling bulge in the welt.



**Figure 15 —The welt/plate assembly with the "buldge" under the Ultrafeed foot**

Lay the welt flat on the "outer" side of the first plate. Line up the "tail" of the prefabricated welt (it looks like a tadpole from the end — hence the "tail" reference) with the edge of the plate. Begin sewing the welt near the center of the side that will eventually have the zipper plaque. **Figure 16.** Leave about 2 inches of welt unsewn.



**Figure 16**

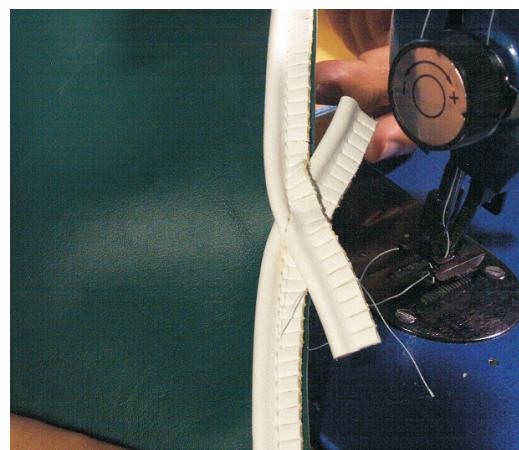
It is always a good idea to sew clockwise round a cushion. This keeps the bulk of the material outside of the machine. Everything that follows assumes this routine.

Sew to the first corner and stop with the needle down about 1/2" short of the corner. Cut "eases" into the tadpole tail of the welt if necessary so it can be bent round the corner (the prefabricated welt already has eases which may be enough to permit a smooth turn / **Figure 17**). It is a good idea to operate the machine manually at this point making the turn slowly. With each stitch bury the needle and lift the presser foot of the machine to turn the work 30 degrees or so. Once turned, drop the foot and manually produce another stitch. Stop with the needle down and continue on in this manner to complete the corner. Make 90 degree turns as cleanly as possible but do not be discouraged if your turn has a small radius — it will look fine in the finished product as long as it is consistent.

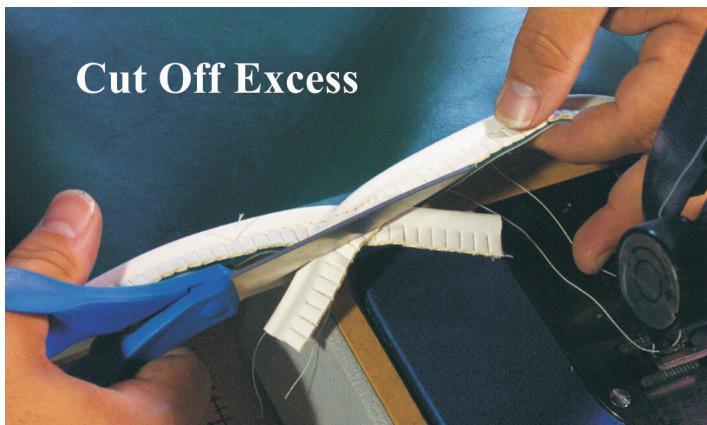


**Figure 17 — Turning the corner — note the effect of the "eases" in the tape**

Continue all round the plate. When just 5 inches or so short of the unsewn welt at the beginning, stop sewing and trim the end of the welt so the two ends are overlapped about 1 inch. Cross these two ends over one another so the crossover is exactly at the meeting point and the two ends continue on over the edge of the plate. **Figure 18 & 19.** Now finish sewing the welt. At the crossover point just continue sewing right up and over the two thicknesses of welt. This crossover point should exist for only a 1/2-inch or so. It may be necessary to turn the machine by hand to get the needle through the bulk of material. If the machine absolutely refuses to do the job, just sew it by hand that last inch or so.



**Figure 18 — "Crossing Over" the welt to close the loop**

**Figure 19**

It should be noted that some prefer to simply cut the welt ends flush with each other. A small break in the cord will exist then instead of the "crossover" in the welt cords.

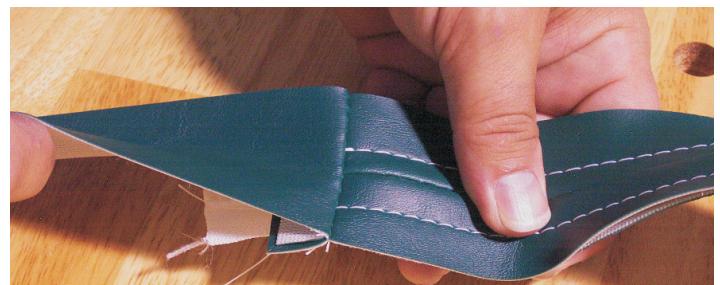
Attach the welt to the other plate in exactly the same way. **Figure 20** shows the completed plates with welting installed.

**Figure 20**

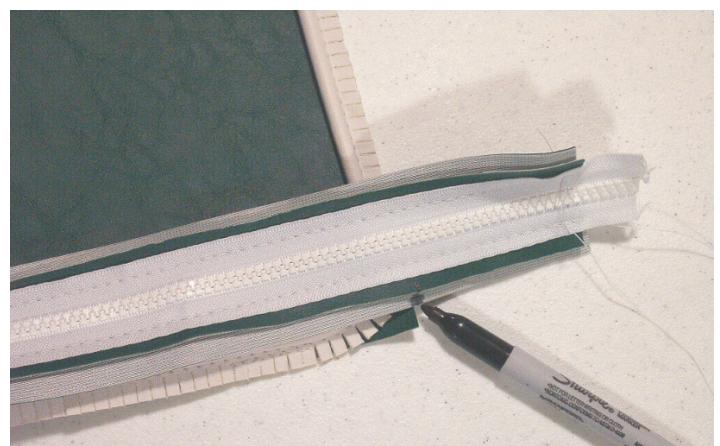
## STEP #4

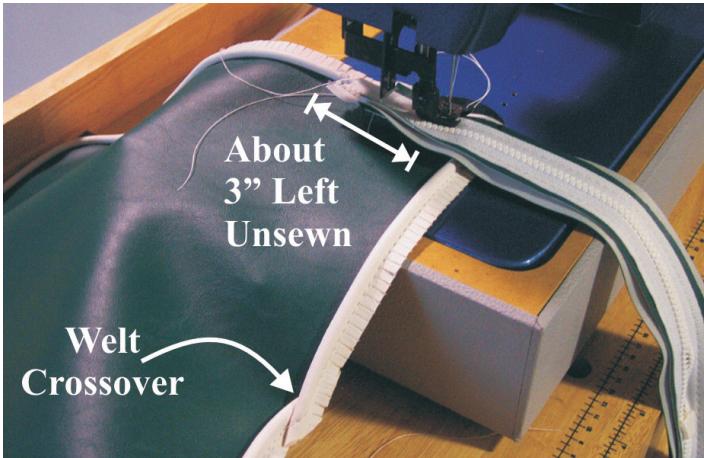
### SEWING THE BOXING AND PLAQUE TO THE PLATES

First join the boxing and the zipper plaque end to end. Make sure that the zipper is closed all along its length except for the small opening in front of the slider which should be somewhere near the center of the plaque. Place the two strips of fabric "outer" face to "outer" face on top of one another. Run a row of straight stitches 1/2-inch inside their flush narrow edges (the zipper tape will actually extend out beyond these flush edges because we cut it a couple inches long and centered it on the plaque). It is a good idea to turn the machine's balance wheel by hand when going over the zipper teeth so the needle can be guided to relatively open places — hitting a zipper tooth directly can easily break a needle. Reverse the machine over the zipper so there are at least two stitches holding everything together. See **Figure 21** in illustration.

**Figure 21**

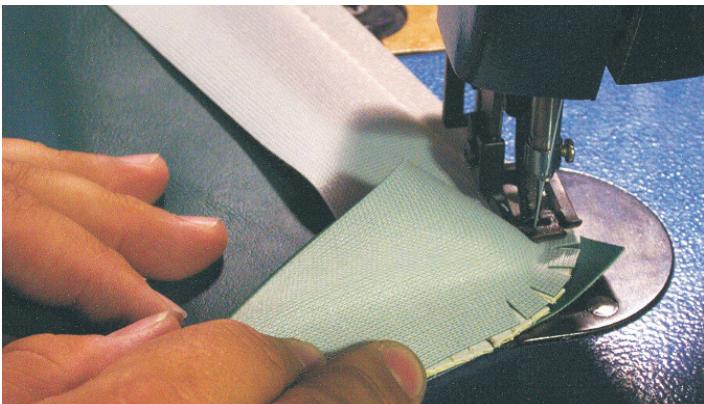
Now lay one plate flat, "outer" side up, with the welt crossover forward. Center the zipper plaque portion of the boxing assembly ("outer" side down) over the side of the plate with the welt crossover (this should be the side of the cushion that will be to the back when it is finished so it is less visible). There should be about 3-5 inches of zipper plaque running round the corners of the cushion on both ends. Make sure that the boxing/plaque joint is on the left hand side where the boxing continues on with enough length to encircle the plate. **Figure 22**. Mark the plaque where it turns round the right hand corner of the plate. **Figure 23**. Make sure that mark stays where it should be and start sewing roughly 3 inches from the end of the zipper plaque on the right toward the corner just 2 inches or so away. **Figure 24**.

**Figure 22****Figure 23**



**Figure 24 — Initiating the stitch that attaches the plaque/boxing to the first plate**

Proceed to the first corner and stop with the needle at the turning point. Clip "eases" into the boxing/plaque strip so the plate can be turned and the boxing can be eased around the corner. Again, a small radius is OK here but try to make the corner as sharp as possible. **Figure 25.** Continue down the next side (along the length of the zipper plaque) and on to the third side where the boxing/plaque joint is found. When you get to the seam allowance for the boxing/plaque joint just continue sewing so the boxing/plaque seam allowance is folded down against the boxing side. This will make for a very neat finish on the zipper tape.

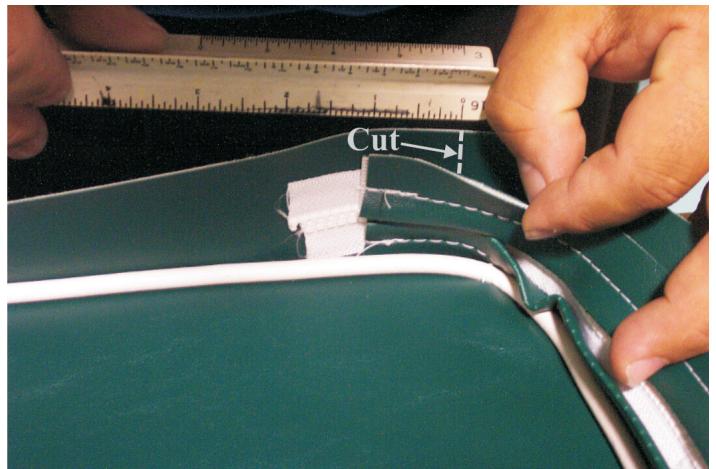


**Figure 25 — At the corner cut "eases" into the boxing**

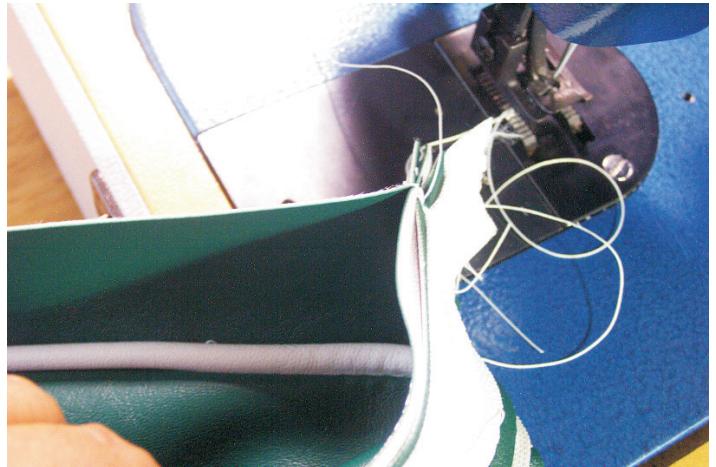
Continue to the next corner and the next one beyond that until you are 5 inches or so from the starting point. Stop now and remove everything from the machine. **Figure 26.** Cut the surplus from the boxing strip so there is exactly 1 inch of overlap between the start of the plaque and the end of the boxing. Be sure to cut squarely across the tape — there should be no angle in the cut. **Figure 27.** Put the boxing and the zipper plaque "outer" surface to "outer" surface and sew them together with a row of straight stitches  $1/2$  inch inside their flush edges. **Figure 28.** Once again, hand stitch where necessary and make at least two passes over the closed zipper to lock it in place.



**Figure 26 — the junction point where the attachment of the plaque begins and where the boxing ends**



**Figure 27**



**Figure 28**

This seam allowance will quite naturally lay toward the point where you last stopped sewing because the zipper is rather stiff. Let it lay that way and finish the stitch all round the boxing/plaque assembly and the welt/plate assembly.

**Figure 29** illustrates the finished assembly.

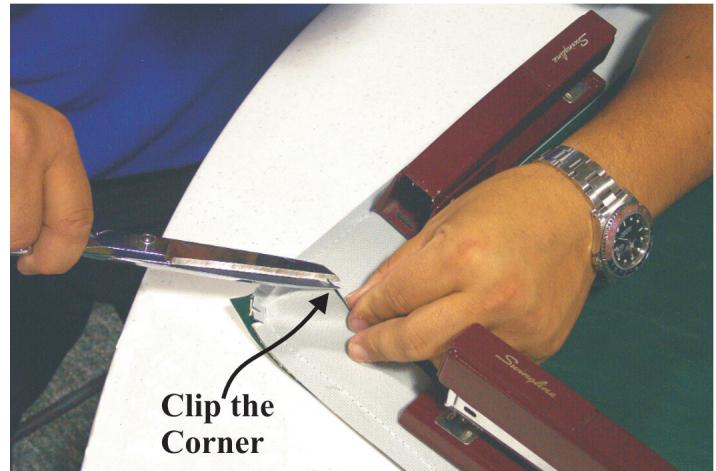
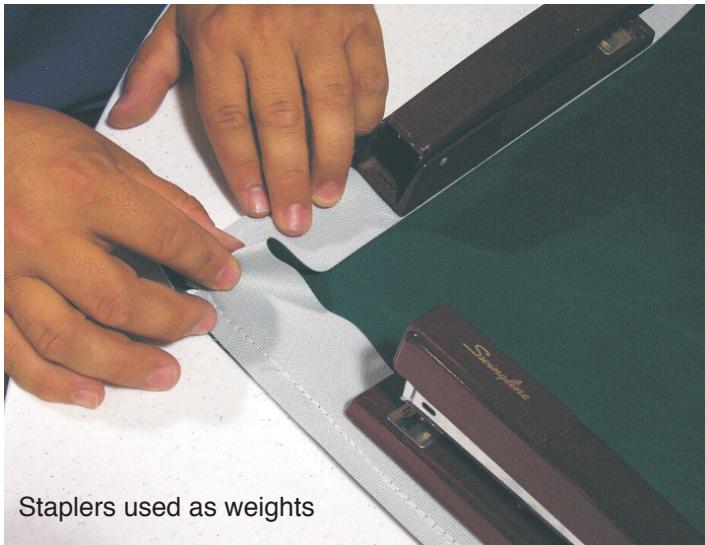


**Figure 29**

## STEP #5

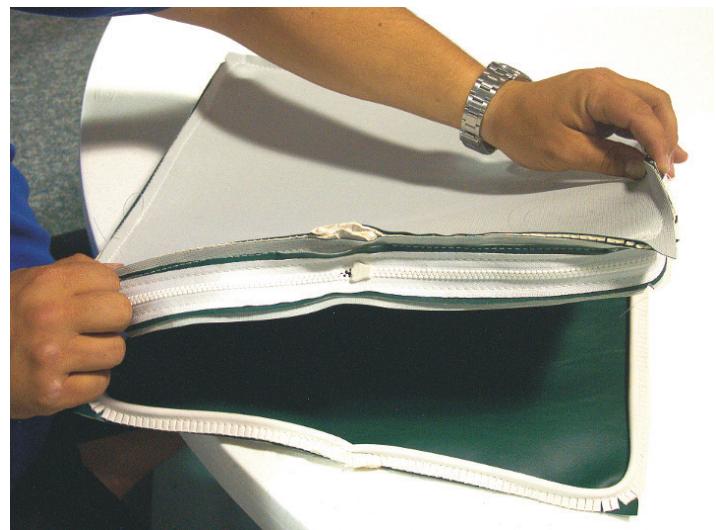
### SEWING THE FINAL PLATE IN PLACE

The attachment of the second plate is perhaps the most error prone process in cushion construction. The problem is that it is easy to get this plate misaligned which results in wavy stress lines along the boxing. There is a simple trick that will avoid this problem. Place the cover as it is now inside out flat on a table. On both sides of each corner press the boxing flat and pinch it up in a triangle with a 45 degree angle to the corner (this assumes a 90 degree corner). Hold the triangle while cutting a 1/4 inch notch out of the apex. The four resulting notches mark the location for the corners of the new plate and also provide for easing round those corners at the same time. **Figure 30.**



**Figure 30 — Locating the corner point on the boxing**

Lay the assembly (plate with boxing/zipper plaque attached) "outer" side down over the "outer" side of the plate. **Figure 31.** Start sewing 4 or 5 inches from one corner. If you start at a corner opposite the zipper plaque it will be a little easier to get an accurate matchup since the assembly is not so thick there. When the corner is reached make sure that the notch is located accurately and add additional easing cuts as necessary to make a smooth turn. Check the location of the next notch. If the zipper is separated it will be easier to match the plaque since its bulk will be reduced. Eventually it may be necessary to pull or push the boxing/plaque assembly to ensure that the corners match the notches. This is perfectly OK so long as the corrections can be limited to less than 1/4 inch or so per 24 inches. If the inaccuracy exceeds this, it will be a good idea to figure out what the problem is and correct it properly (by ripping stitches and starting over).



## STEP 6

### FOAM INSERTION

Pull the zipper halves apart from in front of the slide all the way to the place where they are sewn over. Also slide the zipper slider back to the stitch on the other end. **Figure 32.** Now the cover can be turned right side out through the zipper opening.



**Figure 32**

Fold the foam in half and insert it into the open cover. Once it is partly in place flatten the foam and reach inside to tug on the far corners and the far edge to nudge the foam deeper into the cover. Be patient. It may seem that the foam just will not fit, but, once the job is done, the cushion covering will be properly filled. **Figure 33.**



**Figure 33**

If necessary, a piece of the light weight plastic used by dry cleaners to protect clothing can be used to aid the insertion process. Simply wrap the foam in plastic before it is inserted. The plastic can be pulled out when everything looks good and used for the next cushion.



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