Tufted and Channel Back Chairs: Upholstering

Cooperative Extension South Dakota State University

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Tufted and Channel back Chairs

Upholstering

Cooperative Extension Service: South Dakota State University and U. S. Department of Agriculture
Channel backs often are seen on chairs with concave backs and can be found on straight backed chairs as well. Narrow channels will make a chair appear tall and slim, while wider channels give the chair the appearance of being low and wide. Depending on the chair shape you may find the channels are the same width bottom to top or they may be narrower at the bottom than at the top. Although channel backs look rather complicated, a step by step analysis shows it to be a simple process of sewing and tacking.

First, remove the old covering and save it for a pattern. If muslin has been used to cover the channels you will possibly be able to move the entire unit. If this is not possible be careful to label each channel top and bottom and where it goes in the pattern so you get each section returned to its proper location. Keep each channel in one unbroken unit in order to help hold its shape.

Remove the old burlap from the chair back and replace it with new burlap. Divide the chair back into vertical sectors and chalk the lines onto the new burlap. The pattern can be attained from the old burlap or you may measure it out. Determine the number, size, and shape of the channels needed for the space to be covered and mark accordingly. See figure 1.

Next the muslin cover and the upholstery fabric are measured and cut into the desired size and shape.

Each section should be measured the width of the channel, plus 3 inches extra for stuffing, plus 1 inch extra for a $\frac{1}{2}$-inch seam allowance on each side of the piece. The panels for each side must have width enough to lap to the back for tacking and each panel must be long enough to lap over the top and bottom of the frame for tacking. When cutting these pieces be sure to keep the fabric grainline perfectly straight using the centerline of each section as grainline indicators. See figure 2.

Machine stitch the muslin sections together in the correct order. Be sure to use the exact seam allowance throughout. Next, place the seam of the muslin panel at the corresponding channel line on the burlap chair back and hand sew firmly in place. Work from the bottom to the top with the seam allowance toward the outside of the work. Sew the next seam using the same method. Begin stuffing the channel when the second seam has reached the 4-inch mark. Continue in the same manner until all channels have been completed. It is advisable to start with the center channel and work to the outer edge. As soon as each side of a channel is completed the lower edge can be tacked in place and the stuffing tamped in using a dowel. An ice pick may be used to move stuffing about inside the channel.
to smooth it. It is of utmost importance that you **measure carefully** and **match the seams to the channel lines** when doing this step. An error of a fraction of an inch will show up when the channel is stuffed.

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Cored rather than solid slab gives the most satisfactory results when making channels of foam. The following table is a helpful guide in choosing foam for this purpose:

<table>
<thead>
<tr>
<th>Finished Channel Width</th>
<th>Foam Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 4&quot;</td>
<td>1 1/2&quot;</td>
</tr>
<tr>
<td>4&quot; - 5 1/2&quot;</td>
<td>2&quot;</td>
</tr>
<tr>
<td>5 1/2&quot; - 8&quot;</td>
<td>2 1/2&quot;</td>
</tr>
<tr>
<td>8&quot; and over</td>
<td>3&quot;</td>
</tr>
</tbody>
</table>

To determine channel width it is usually best to cut the foam the same width as the covering fabric. For example: if a channel measures 4 1/2 inches across the back with 6 inches needed to follow the curvature of the channel, the foam piece should be cut 6 inches wide. Tapered channels can be cut one of two ways. They can be cut rectangularly using the widest dimension as a basis for the width. Doing this means more foam compressed into the lower section of the channel offering added support to the small of the chair occupant's back. The more economical method is to cut the channels reversing the pattern of adjacent pieces when cutting as shown in figure 4.

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The channels should be shaped for ease of insertion into the fabric pockets. Here's how to do this:

A. Cut a piece of sheeting the size of the finished channel—for the example used above this would mean 4 1/2 inches wide.

B. If the foam is quite thick or if the channel is quite shallow, bevel the back edge of each side:

![Figure 5.](image)

C. Apply rubber cement to the sides of the foam and to the edge of the sheeting. The width of the cemented area should be the same on each piece. Allow the cement to partially set—approximately 5 minutes. Attach one side of the sheet to one side of the foam:

![Figure 6.](image)

Now line the free edge up with the other side of the foam being sure the two edges match exactly:

![Figure 7.](image)

Allow the cement to dry for a few minutes while you hold the two pieces together.

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It is possible to machine stitch all of the channels to the burlap and then stuff them. Although this eliminates a great deal of hand sewing it is not advisable because it is quite difficult to stuff the long channels and keep them smooth and even.
A thin layer of cotton or fiberfill over the top of each muslin covered channel is advisable prior to putting the upholstery cover in place. Machine stitch the upholstery fabric sections of the channels together being sure to use the exact \( \frac{1}{2} \)-inch seam allowance. For each seam cut a piece of twine 12 inches longer than the panel. Place one piece of twine in each seam allowing 6-inch extensions at the top and bottom. Make a second row of stitching (creating a casing for the twine) starting one inch from the top and ending one-inch from the bottom.

Fit the upholstery fabric into place. Place a No. 6 tack at the top and bottom of each channel seam. Temporarily fasten the twine to these tacks. Smooth and adjust each channel adjusting the twine as you work. Lay the channel pleats at top and bottom so they face away from the center channel. When satisfactory results are achieved drive the tacks permanently into place. Tack outside covering to the chair and your channel back is completed.

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A separate pattern must be made for the muslin and upholstery fabric covers. This is done exactly the same as the original except each tuft will be 1 to 1\( \frac{1}{2} \) inches larger to allow fullness for padding take-up and several inches must be allowed at the sides, top, and bottom for tacking to the chair frame.

Start making this pattern by again locating the lengthwise and crosswise centerlines. Proceed as before only rather than making 3-inch squares you will be making 4- to 4\( \frac{1}{2} \)-inch squares. **Be sure to have exactly the same number of button positions marked on the muslin as you had on the burlap.** On the upholstery fabric it is necessary to mark only the button positions, so do this using the muslin as a guide. Be sure to allow the extra fabric for tacking on both the muslin and the upholstery fabric.

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A well-tufted piece of upholstered furniture has a diamond-shaped pattern with buttons sewn in each depression and pulled to hold the tufts in place. The sections of the tufts which extend out to the chair frame are called channels. Tufting is found on many pieces of furniture from the Victorian period.

If possible remove the old cover and save it for a pattern. Endeavor to keep the tufted padding in one whole unit. If a tuft is damaged restore it very carefully being sure to duplicate the original size and shape. Cover the tufted unit with muslin. Replace muslin that is badly damaged. If the burlap backing and/or chair webbing is no longer sturdy, replace it as well.

The size and shape of the area to be tufted or the original tufted unit will determine the number and size of the tufts you use. There are probably as many designs of tufting as there are furniture designers, but we will deal with one design only—the diamond-shaped tuft. Since this is twice as long as it is wide, for an example we will use a tuft 3 inches wide and 6 inches long. Draw the area to be tufted on a sheet of paper, locate and mark the lengthwise (A-A) and crosswise (B-B) centerlines. Proceeding from these lines divide the area into squares the width of the tuft—for our example we will use 3-inch squares. See figure 8.

Mark the center of each square along line B-B and D-D. Buttons will be placed at each of these half-way points along these lines. Buttons will be placed on the intersecting lines of row C-C. Join the button positions together with diagonal lines. You now have the diamond-shaped pattern for your tufts. Transfer this pattern to the burlap on the back or the seat of your chair. **Caution: Do not end diamond points at the edge of the chair frame.** It is best to finish with channels at least the width of each tuft extending from the last button to the chair frame as shown with the broken lines in Figure 8.

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**Figure 8.**
Place the old tufted unit in place if you still have it. Put the muslin cover over this and match the button locations on the muslin to the button location on the burlap. Begin sewing at the center and work out to the frame of the chair. Fit each tuft securely in place sewing through muslin, burlap, and webbing at each button location. When muslin is firmly attached, pull the edges in place and tack to the chair frame. Tacks should be placed 1 to 1½ inches apart.

If the old tufted unit is unusable and new tufts must be made, proceed as follows. Place the marked muslin cover over the burlap on the chair. Match the button positions pinning the muslin to the burlap. Slip tack the front edge of the seat or the lower edge of the chair back and about halfway up each side. Remove the pins from the first row of button marks and sew the muslin securely to the burlap and webbing at the button mark. Lay in the pleats as you sew.

Upon completion of the first row of button marks start with the center tuft and pad each pocket until plump and firm. Sew the button marks for the second row as marked and fill the second row of tuft pockets. Continue until all tufts have been formed. When each tuft is filled remove the sliptacks and add needed padding around the edges. Permanently tack in place. A thin layer of cotton or fiberfill may be placed atop each tuft prior to adding the upholstery fabric. This is an optional step.

If you are using foam cut the foam to the desired shape and size according to the chart in the foam upholstery bulletin, FS 465. Draw your pattern onto the foam as in figure 8. If the foam is quite thick, a smoother end result will be obtained by punching or cutting holes in the foam where the buttons are to be located. If you desire nice pleats between each button location, slit the foam along each tuft outline and along the line for the channels making each slit about ½ inch deep. Anchor the foam to the chair base with rubber cement. Cut the upholstery fabric allowing the same 1 to 1½ inch extra per tuft and the extra fabric on all four sides for tacking.

Cover buttons with the upholstery fabric you are using for your chair. You can generally get this done by the firm from which you buy your fabric. Many upholstery fabrics tend to be bulky so buttons done this way are sturdier than those you cover yourself.

Place the marked upholstery fabric cover over the muslin unit fastening each button position separately with sewing twine. Work from the webbing side. After each position is secure you may fasten the buttons in place, working from the webbing side using tufting twine to attach the buttons. Insert a small wad of cotton between the twines and tie. A small piece of cardboard, heavy plastic, or leather also is good for holding the twine taut. Do not use something that will rub on the twine causing it to break. Pull the edges of the fabric into place and fasten securely with tacks. Finish in a manner appropriate to the piece on which you are working.