

Down Sleeves

by Rob McKibben
December 2008



Overview:

Each sleeve is made with 2 “half tubes”. The tubes are joined together at the shoulder. A down baffle is sewn between the tubes at the armpits and this chamber is stuffed with down. Another baffle is sewn and stuffed at about the biceps. A final baffle is sewn and stuffed at the forearms. Finally, the wrist cuff is sewn almost closed, the chamber stuffed with down, and the wrist hem finished.

This link, <http://www.vintagesewing.info/1940s/42-mpd/mpd-04.html> (skip to figure 3 in this website), provides more than you want to know about making sleeves, but it doesn't talk about how to make a double layer down sleeve. This link, http://thru-hiker.com/projects/french_seams.php gives the critical, step by step for French seams. Coffee's, nee, Hammock Engineer's, Red River Gorge quilt instructions teach you how to sew down baffles and calculate down for each chamber:

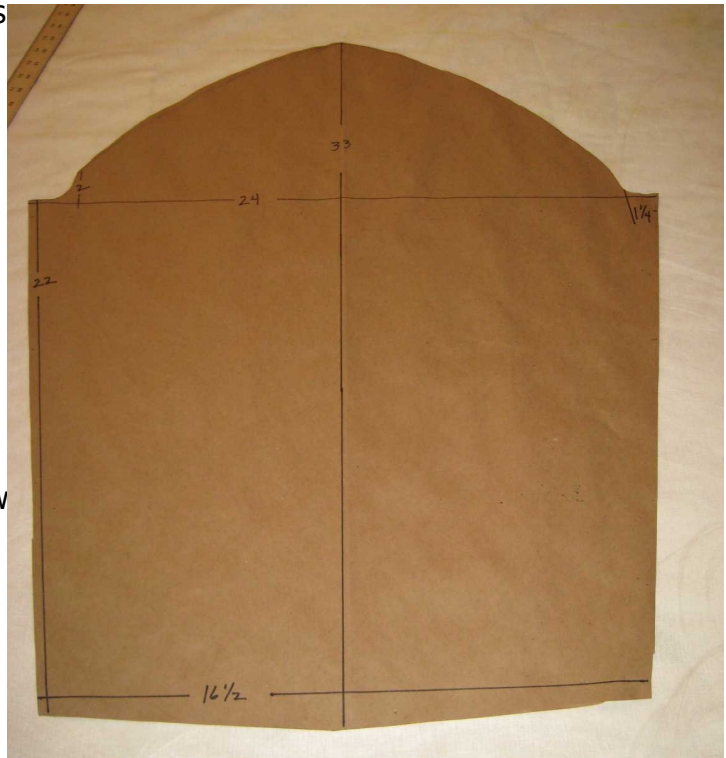
The first several prototypes used different sizing for the inside and outside layers of each sleeve thinking that the space for the down (1", 1.5", etc.) would skew the circumference of the circle and make a mess. It isn't worth the hassle. Each piece, inside and outside, are the same dimension.

The down baffles are rectangles (no fancy curves). They are overlapped, unsewn, at the ends so that you have a hole for filling the chambers with down. You could hand sew a stitch to close the overlaps, but I did not bother.

Sometimes junk mail can be useful. Create a funnel from a stiff, slick, 5x7 or larger advertisement. The small end will stick through the gaps/hole in the baffle and the large end is where you will stuff the down. The small end is the size of a pencil (without eraser) so that you can “piston” the down into the chamber. The big end is the size of a quarter coin. Make it about 5 – 6 inches long.

Fabric Dimensions: (I wear 16 ½ x 33 dress shirts ...)

- Shell (Ripstop or better): Need 4 pieces, 2 for each sleeve.
 - Longest length, 33" (Yep, same as dress shirt)
 - Widest width, 24"
 - Width at cuff, 16 1/2"
 - Length from cuff to armpit, 22"
 - Offset at armpit, 1 1/2" horiz, 2" vert
 - Curve from armpit to top of shoulder: freehand...
 - Or, if you really want to do it right, follow the referenced web site instructions and use curve templates...
 - I also did not bother with elbow articulation
 - The picture is skewed (camera depth issue), the shape is a more exaggerated trapezoid, with a dome on top.



Baffles: Down proof mesh; no-see-um or similar

- (Desired loft + 1.5)" x 23" , You will need 3 for each sleeve. (see note 2)
 - Plus 1.5" = 3/4" seam allowance on each side
 - 23" = cut width, includes seam allowance on each end
 - You will clip off the excess of the shorter 2 baffles when the time comes
 - See note 3

Steps:

- One tube will be the "inner" sleeve and the other the "outer" (set the terminology)
 - Some fabrics have a right side and a wrong side
 - Make sure to line these up properly!!! Especially when closing the shoulders.
1. Using tailor's chalk, draw lines on the wrong side of each piece (all 4) for the baffles.
 - 7" from the bottom, 7" from there, 7" for the last, which should be 1" from the armpit.
 - See picture #2
 2. On each piece, French seam from cuff to armpit, to form a half tube.
 3. Insert one inner sleeve into the outer sleeve.
 - Wrong sides together!!! right side of outer exposed, baffle lines touching.
 - See picture #3
 4. French seam the two tubes together at the shoulder from armpit to armpit
 - again, double check the right sides and wrong sides!
 - leave the cuff unsewn so that you can open it up to do the baffles
 5. Sew a baffle across the armpits. (see note 4)

6. Use the funnel tube tool to insert down into the chamber. (see note 1)
 - See picture #4
7. Sew the 2nd baffle, clip the excess, stuff
8. Sew the 3rd baffle, clip the excess, stuff
9. Close the ends of the cuffs with a simple ¼" line of stitching, but leave a gap, stuff.
10. Hem the cuff.
 - You can use Lycra or elastic to create a tight cuff.
 - I elected to leave it "floppy".
 - See picture #5
11. Make a back and front "harness" to hold the 2 sleeves together.
 - Add 2 tie out loops on each sleeve, 1 front, 1 back. (Oops, I had to add another on each sleeve higher in position to hold the back where it needs to be....)
 - Use Lycra, shock cord, string with half hitches, grosgrain + velcro to mate to the serape head hole, or whatever...
 - See note 5 and picture # 8.
12. CELEBRATE! With your favorite beverage!
13. Post pix to the forum.

Notes:

- 1 - Down. I used 1 oz of 800 fp for each sleeve to create > 1" of loft. 4 chambers, 1 oz -> .25 oz per chamber. But... the shoulder is bigger than the cuff. And... measuring these tiny amounts of down is beyond my margin of error... (0.3 in each of the top two chambers, 0.2 in each of the bottom two.)
- Max dimensions = 33 x 24 x 1 = 792 cubic inches, but the trapezoid, curves, and seam allowance reduce this, a lot. (I'll leave it to the mathematicians to calculate the exacts...)
 - This worked best for me:
 - #1 - have a vacuum cleaner with a no-see-um mesh square over the wand within reach!
 - Digital scale that reports in grams. .1 oz ~ 2.8 (call it 3) grams
 - Measure 1 oz (whole number, not a fraction) of down into a separate, large plastic bag
 - Get 10 coin rollers, quarter size, 10 sandwich bags, and 10 rubber bands.
 - Weigh 1 empty roller with baggie and rubber band, in grams. Add 3.
 - One end of the coin roller should have a stiff rolled end. Squeeze the other end flat and tape shut with scotch tape
 - Put both hands and one coin wrapper into the larger bag. Stuff and pack 0.1 oz of down into the coin roller (~ 2/3 full), cover with the baggie, band, weigh.
 - Create 10 packets of 0.1 oz (one tenth of an ounce) down from the 1 oz in the bag.
 - Due to margin of error, some packets will be heavier than others. Try to equalize as best you can, or till you run out of time.
 - See picture # 4
 - Transfer a couple of pinches of down at a time from the coin roller into the funnel tube, ram with a pencil, repeat. It will take 10 or more repetitions of this to transfer all the down in a tube into the chamber. But, you get a more precise amount into each chamber, and if you go slow, it GREATLY reduces the down mess. Only a few pinches at a time. If you try to cram too much in at a time, you

- won't be able to piston it through the funnel.
- Use the vacuum wand often.

2 – Baffle height.

- For a fluffy look, make the baffle less than desired loft and overstuff.
- For a tight look, make the baffle the exact loft and get a microgram scale.
- See note 1 above.

3 – Cutting baffles.

- Lay out the block of baffle fabric on a work table, and tape it down along two edges without stretching. Use a straight edge and colored chalk to mark pieces to cut, then use a different color to mark the sewing lines. Cut the length of all 6 baffles leaving uncut fabric on each end. (I use a mat, rotary cutter, and metal yardstick.) After cutting all the long lines, cut across the ends.
- See picture #6
- A tailor's chalk mechanical pencil with colored leads from Hancock's is GREAT!

4 - Sewing baffles.

- Open up the inner and outer sleeve so that the shoulder seam is in the middle and the two cuffs are on the ends, wrong side and seam marks exposed
- On a sewing machine with a free arm, insert the outer sleeve onto the arm, jam all the fabric to the right until only the first seam line is under the needle.
- Sew the baffle to the outer shell. See picture #7.
 - Overlap the ends of the circle a little bit
 - Go ahead and sew all the baffles on the outer piece at this time, then sew baffles to the inner piece step by step
- Flip the long tube and jam the inner sleeve onto the sewing machine's free arm
- Pull up the first baffle from the outer piece (from the left) so that it is under the needle, marked lines in place
 - Be careful that no excess fabric is under the needle at any time during sewing!
- Overlap the 2 ends when you finish the circle and leave a gap for the funnel.
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- When sewing, fold over the seam and line up the stitching on the line you made in step 1 with the line on the baffle material. You can see through the mesh easily, different colors helps. You will want to pin the first edge in place until you get the hang of it. After that, you can get by without pinning anything.

5 – I created a long 1" wide strip with extra fabric to match the sleeves. Start with a 2.5" piece by however long. French seam the long edge. Voila! A 1" belt strong enough for this purpose. I also used 3" pieces of this, versus grosgrain, to make the attachment tie-out loops.

- To tame the frazzle, insert the raw end 1/4" into the tube and sew a simple stitch line.

Pictures:

1. Prototypes: first on the left, last on the right.

One bag of "Cluster Stuff" from Wally's World, \$3.99, was used as the filler for the prototypes.



2. Marks for baffles, 7" each starting from bottom. Should end 1" from ampit.



3. Inside into outside



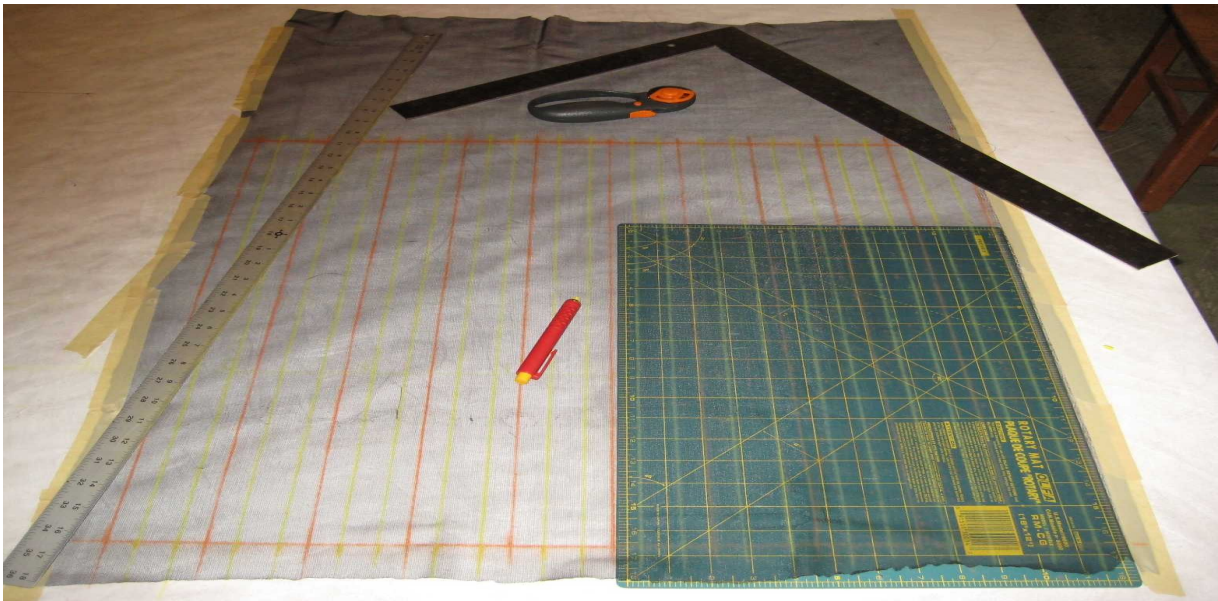
4. Measuring Down and Stuffing



5. Cuffed hems: elastic, Lycra, floppy



6. Cutting baffles



7. Sewing baffles

The camera did not capture the white sewing lines on the shell material, but my eyes can see them. The left side of this baffle will be sewn to the inner sleeve later on. I made the seam allowance 3/4" mainly because of what you see here on the left side. Notice that I did not cut exactly on the orange line. This means that the seam allowance on the next piece over will be too narrow. With 3/4" you have a margin for boo boos.



8. Tie outs

Currently shown with shock cord for back harness. Tie the front harness with a shoe string bow knot.

