

Patterning Fitted Garments

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Vincent De Vere, Axed Root, Calontir (Vincent.devere.calontir@gmail.com) (www.starsandgarters.org)

Goal: To produce a pattern for a fitted garment from only 4 initial measurements.

Description: [This class is a reworking of the “Cotehardie Construction from Extant Pieces” class created by Mistress Mairghead de Chesholme (Jacquelyne Aubuchon). I have modified it slightly to streamline the patterning process.] This class will cover the process of taking 4 measurements from someone and producing a fitted garment pattern with a reasonable level of accuracy.

In pattern drafting in the SCA there have been several techniques that have been taught over and over though the years. Techniques of draped and pinned fabric or the duct tape pattern can be used to produce a fitted garment pattern. Both of these do require the presence of the person during the patterning. If you want to try to generate a fitted pattern without the victim present, your options are more limited.

The technique herein described is not absolutely fool proof, but it has great advantages. Using the 4 measurements of chest, hips, waist and total height, you can get fairly close to a fitted garment. I have used this several times with people that I have never physically met and essentially remotely fitted a garment. The pattern it produces is generally within 5-10% of the true value from my experience, and gets close enough to minimize excess fittings. I have been using this for many years to make all manners of garments, from the cotehardies taught in the class I learned this process from, to many less fitted garments like cotes and tunics and even over garments.

I did not develop this. I suggest looking at the original source of “Cotehardie Construction from Extant Pieces” created by Mistress Mairghead de Chesholme (Jacquelyne Aubuchon) found at <http://www.chesholme.com/wfiles/2-1-Cotehardie.pdf>

For the purposes of this class I have rewritten the instructions in a manner to generate a more generalized fitted pattern that can then be directed in a variety of directions. It is also my go-to first step in drafting patterns for use in making historic clothing for newcomers, including many unfitted garments.

In general I also tend to keep a spreadsheet of all the measurements I have, partly to keep track in case I want to make presents or more historic clothing for friends, but also because many times a pattern for one person can be very similar to another. This can save several steps in the process.

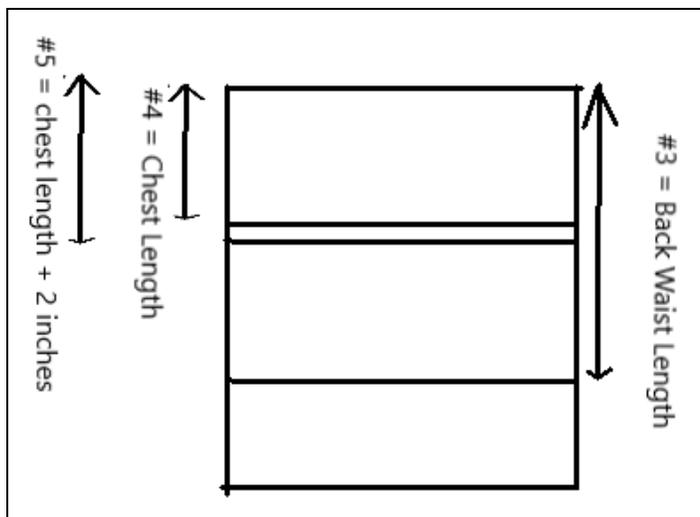
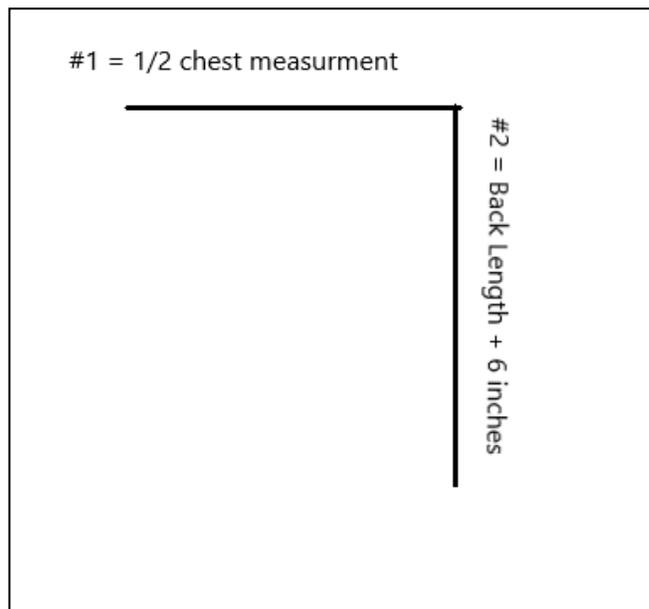


Drafting the Pattern

You can either take all of the measurements directly or using the Sator Calculator found at www.chesholme.com/sator.php, you can calculate all the measurements needed from the chest, hips, waist and total height of the victim. Either print out the resulting page from the web site, or write the answers into the measurements spreadsheet.

You can then use the pattern sketch sheet to help with the math and record needed values for later use.

Do not add any seam allowance in while sketching the pattern. Save that for producing working copies from the pattern you will generate.



On a large piece of paper (brown craft paper) draw a line across about 2 inches from the top of the paper. This is #1, or $\frac{1}{2}$ of the chest (bust) measurement.

Draw a line down equal to #2 or the back length + 6 inches. The paper should be slightly longer than this.

Measure down from the top line and draw the next 3 lines
#3 or the Back Waist Length
#4 or the Chest Length aka bust (nipple height)
#5 or the Chest Length + 2 inches aka under bust.

The next two lines are drawn from the top line to the bottom line. From the left side, which makes up the front of the pattern, measure over $\frac{1}{2}$ of the front width (#6) and draw a line. This will mark out the front panel of a 6 panel garment.

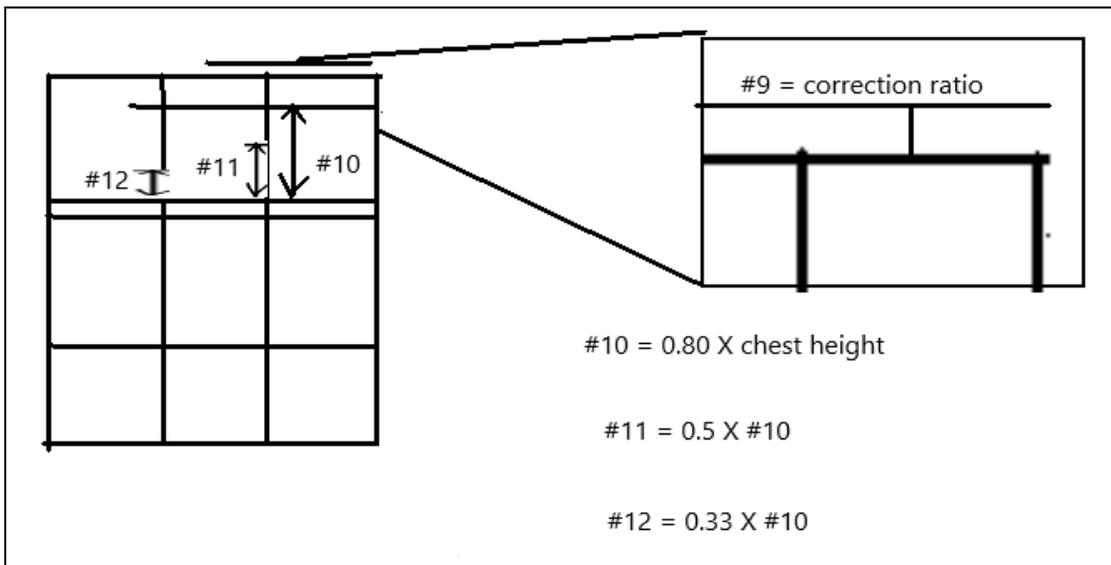
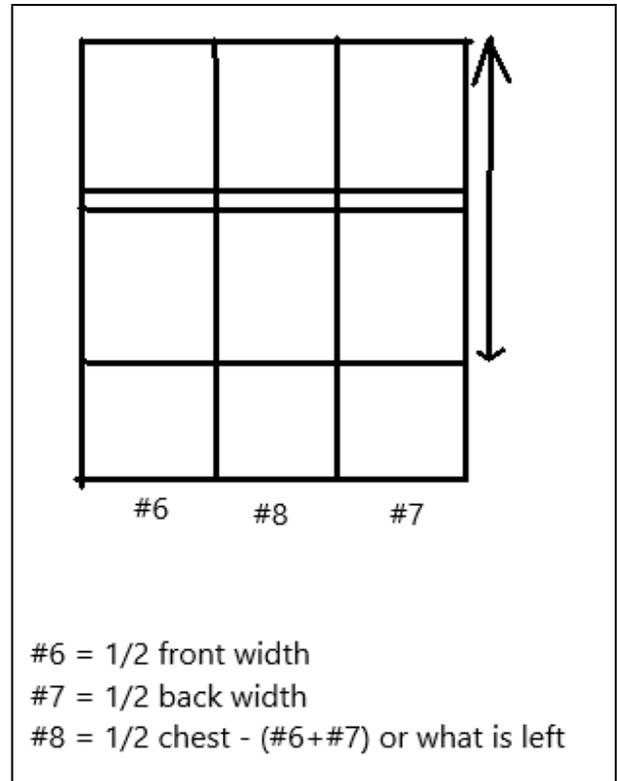
From the right side, which makes of the back of the pattern, measure over 1/2 of the back length (#7) draw a line. This will mark out the back panel of a 6 panel garment.

The space between the two lines should be the under arm length or (#8).

From the top line on the right side measure up (#9) – this will help position the back inside placement of the shoulder line next to the neck.

From the chest length line measure up 0.80 x chest height = (#10)

From the same line measure up one half of the resulting amount (#11) – This is the back of the arm hole or Armscye



From the same line measure up one third of the amount (#12) – This is the front of the Armscye

Place a mark on the top line 1/2 the length of the (#6) line (#13) - This will mark the front inside of

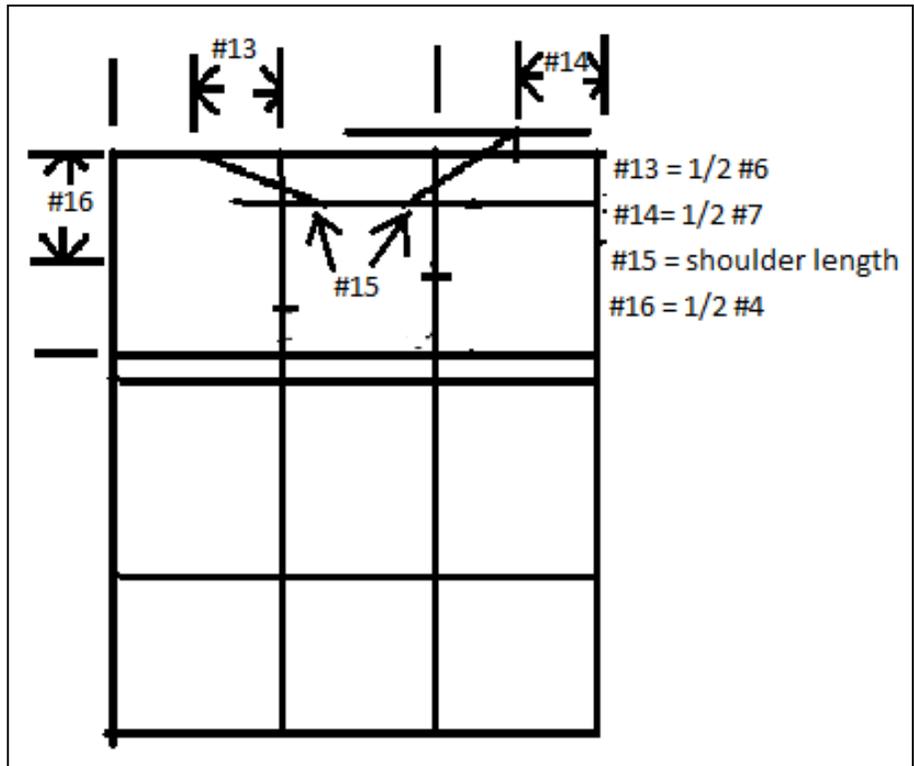
the shoulder line next to the neck.

Place a mark on the line drawn from #9 that is 1/2 of #7 giving you (#14). This will position the back inside of the shoulder line.

Using these two points and the shoulder length (#15), draw a line from each point down to where it will meet the line drawn in step (#10).

They will both be a different angles, but should be the same length as they represent the back of the shoulder and the front of the shoulder. I find the calculated shoulder measurement from the website is slightly long (usually by $\frac{1}{2}$ to $\frac{3}{4}$ of an inch) but this can be easily fact checked later.

Measurement #16 is related to the waist suppression or the amount that the fabric is pulled in under the bust and above the hips in order to create a fitted garment and support of the bust.



Step 16 for men:

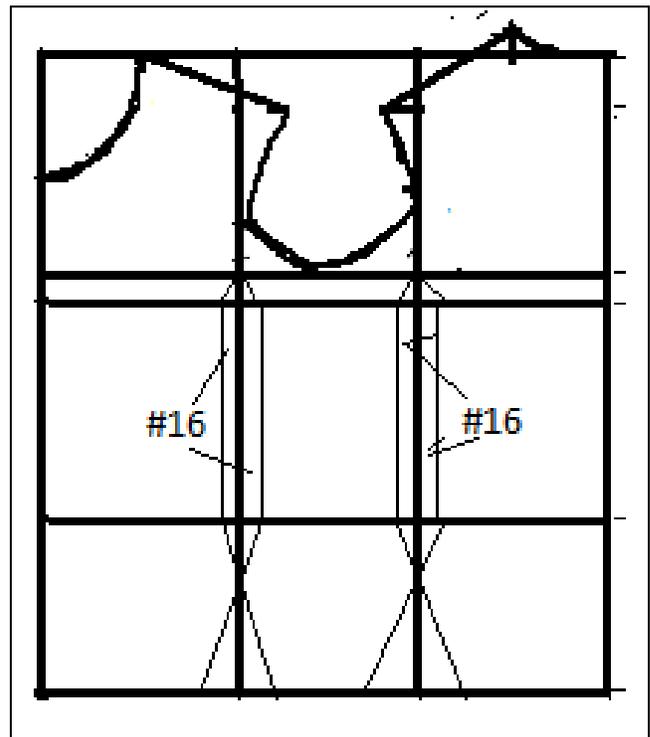
If this is used for a man's pattern for someone of the slight build to slightly larger this can be ignored for the most part and the fitting can be done once the garment is done and turned inside out and pinned to fit.

If this is for a man and needing to fit a larger gut measurement then the pattern should be reality checked at the waist and above the waist to allow for ease.

Step 16 for women.

The positioning of the waist suppression greatly effects how tight the garment will fit under the bust and the resulting shape of the dress. If the desired effect is to be closer to the self-supporting fitted garment side of the styles (cotehardie, gothic fitted dress etc) then the waist suppression should be used as calculated with the final fitting used to pull the garment to the correct shape.

If this pattern is being used to generate less fitted garments (ie tunic dresses, shifts, loose under dresses) then the waist suppression can be reduced and the waist area not pulled in as far.



The waist suppression calculation is divided by 8. This represents the 8 places fabric will be removed from in order to generate the total difference between the bust measurement and the under-bust measurement. Two from either side of the front panels, two from either side of the back panels and two from each side of the two side panels.

On the line drawn in step #5 place a mark on either side of the two inside vertical lines. Lines are then extended straight down to the waist line from step #3. The triangle at the top meets at the intersection of the line from #4 and the lines from #6 and #7. Below the line created in step #3, the waist line, the waist suppression lines flare out to allow for the hip.

Generating a Working Pattern

Once this initial pattern is completed, a working pattern can be made. Seam allowances will be added at this stage and the pattern can be tailored to fit the creation of specific garments (ie, 3 to 4 paneled cotes, to 6+ paneled cotehardies- high necked garments to open necked bodices.) The total length of the garment can also be patterned at this point. I generally make a “full length” pattern and mark off different lengths for a variety of hem lengths.

A good plan is to make a first garment from the working pattern to ‘reality check’ the pattern. Often minor alterations to the pattern are needed, often in the length of the shoulder, angle of the shoulder, armseye, and collar, small of the back or back of the neck. These can be written as notes on the pattern.

Working Pattern

Cut apart the pattern into the front, back and underarm parts for a 6 panel pattern or front and back if you are generating a 2 panel pattern.

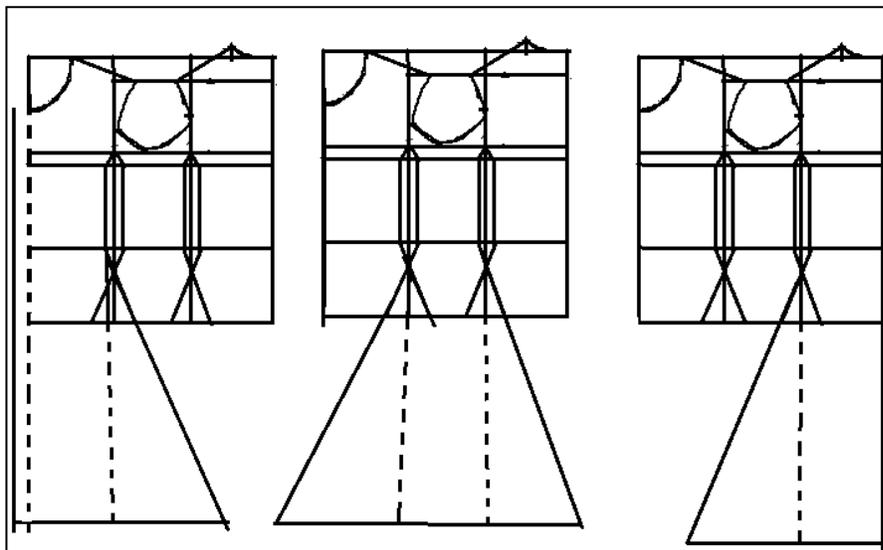
Roll out a length of pattern paper that will extend slightly beyond the cape length.

Place the back panel piece on the pattern paper so that the straight line marking the middle back seam is along one side but a seam allowance distance from the edge. I usually use a 1 cm seam allowance.

Trace around the back panel and make sure to mark the lines for bust, under bust, waist and hips. These make for important alignment points when sewing.

Extend the pattern down to the full cape length by following the line created during step #16 of the pattern drafting.

Add a line to designate your seam allowance around the pattern.

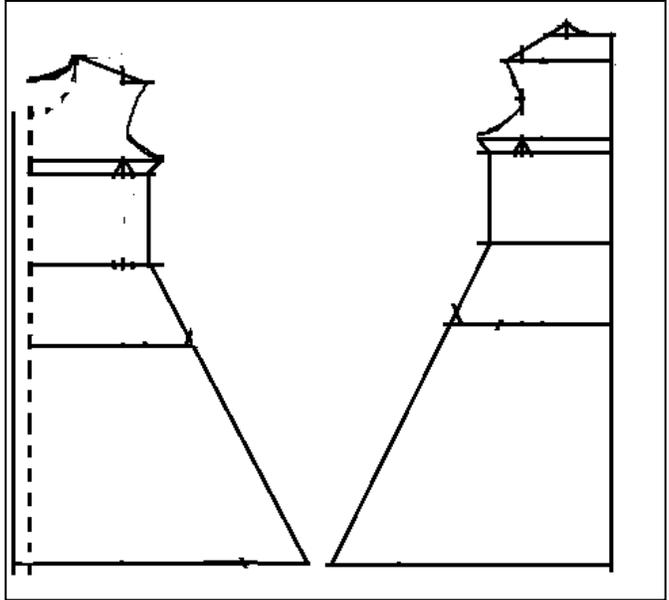


Repeat the steps from the back panel but I always add an additional amount down the front seam. I use this fabric to create a folded over reinforced section for lacing holes or button holes. I then fold this part over to allow me to use the pattern for variations requiring a solid front panel cut on a fold.

Be sure to mark the lines for bust, under bust, waist and hips

The same steps are repeated for the under arm panel but center it in the pattern paper instead of aligning it along one edge.

Mark the lines for bust, under bust, waist and hips on the under arm panel as well.



Patterning sleeves

The patterning of sleeves is probably a class in itself. There are quite a few variations and styles and altering the sleeves on the same basic body can create vastly different appearing garments. The method described is simply a tried and true trick to get a pattern as a starting point.

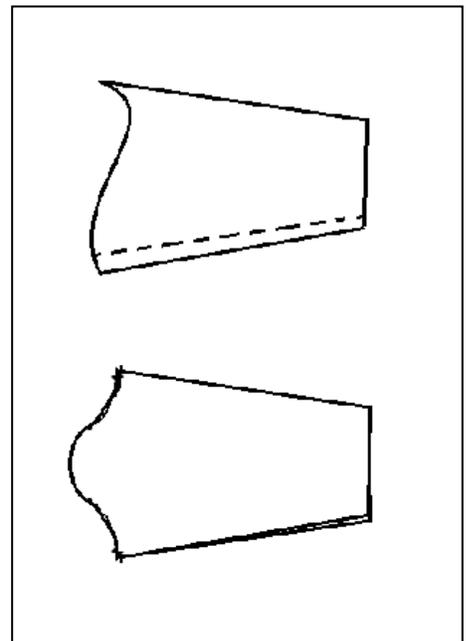
Get an old button up dress shirt that fits.

If a tighter sleeve is desired, pin the sleeve along its length to tighten it on the arm while allowing enough ease around the elbow for bending the arm.

Draw a line down the sleeve to make the seam location. For Cotehardie sleeves, run the line down the back of the arm, not under the arm. This will place the buttons along the outward facing side of your arms when standing naturally. You want to show off your cool buttons. For other sleeves you can run the seam down the bottom of the pattern more like a tunic sleeve. Cut the sleeve off at the shirt at the armscye and along the line marked along the back of the arm.

Lay flat on a piece of patterning paper. Trace pattern allowing for any extra fabric needed for sleeve button hole reinforcement and seam allowance.

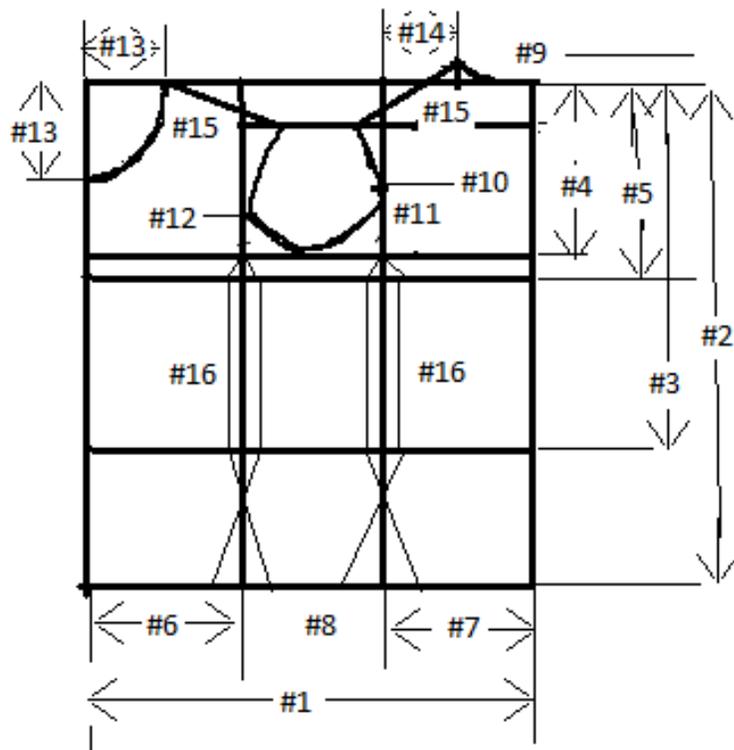
Use this pattern to make a mockup sleeve and test for fit. Adjust pattern as needed.



Pattern Sketch

Name	
Date	

	Bust		8	Under arm width = (#1) - ((#6) + (#7))	
1	½ of Bust		9	Correction ratio	
2	Back waist length + 6in		10	#10 = (#4) X 0.80	
3	Back waist length		11	(#11) = (#10) X 0.50	
4	Chest length		12	(#12) = (#10) X 0.333	
5	Chest length + 2in		13	(#13) = ½ of (#6)	
	Front width		14	(#14) = ½ of (#7)	
6	½ Front width		15	Shoulder length (#15)	
	Back width			Waist suppression	
7	½ Back width		16	(#16) = Waist suppression/8	
				Cape length	
	Sleeve Length			Bicep	
	Duck Hand			Armscye	



measurements for:	
date:	

Height (Ht):	
Chest (C):	
Waist (W):	
Hip (Hp):	
Cape Length (CL):	
Correction Ratio (CR):	
Standard Chest (StC):	
Chest Deviation (ChD):	
Standard Hip (StHp):	
Hip Deviation (HpD):	
Waist Suppression (WS):	
Front Width (FW):	
Back Width (BW):	
Back Chest Length (BCL):	
Back Waist Length (BWL):	
Shoulder Length (ShL):	
Sleeve Length (SL):	
Outseam (OS):	
Crotch Depth (CD):	
Inseam (IS):	
Black Length to Crotch Depth (BltCD):	
Black Length to Knee (BLtK):	
Corp Adj (CAAdj):	
Armscye (ASC):	

