

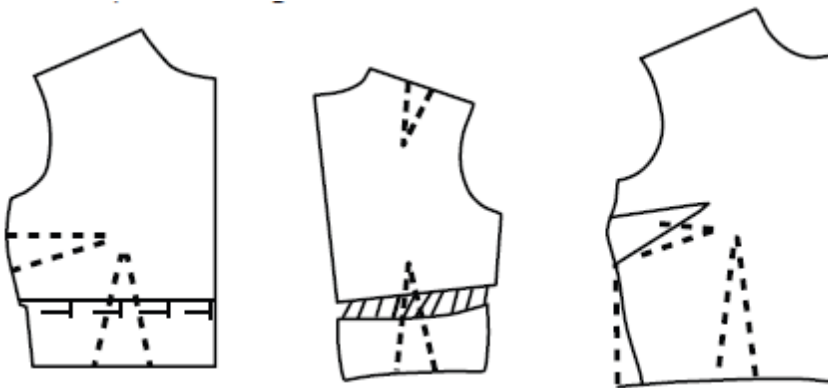
PATTERN ALTERATION

A comfortable, attractive garment fits properly. It is neither too large nor too small and conforms to the contours of the body without binding, pulling, sagging, straining, or wrinkling.

Pattern adjustments and alterations are often necessary to achieve a good fit, especially in a form-fitting garment. Making adjustments or alterations before the garment is cut from fabric will eliminate many problems later. Use this collection of alteration guidelines to solve women's most common fitting problems.

A pattern can be altered and adjusted three ways:

1. By folding out excess fullness to make an area smaller.
2. By slashing and spreading or overlapping along pattern lines to increase or decrease dimensions.
3. By redrawing darts or seamlines.



Fitting problems usually involve one or more of these basic body areas: neckline, bustline, hipline, arms, shoulderline, back waistline, or abdomen. As time passes, you may find that the problems of fitting your figure may change. Because of this, you will want to compare your current body measurements (Table 1) plus ease to the particular pattern you are using. The amount of ease in a pattern is determined by how close- or loose-fitting the pattern design is. Make appropriate adjustments or alterations when you find differences between your measurements plus ease and the pattern. After adjusting or altering the pattern, do a careful pin-fitting to further ensure that your garment will fit well.

GUIDELINES FOR PATTERN ALTERATION:

- Keep all fabric grainlines, the center front, and the center back on the fabric's straight of grain.
- Make adjustments carefully in order to preserve the garment's original style or design lines.
- Maintain ease allowance for comfort.
- Whenever possible, use adjustment lines already provided on a pattern.
- When you alter a pattern, make corresponding changes on all related pieces.

Measurements	How to Take Body Measurements	My Measurements +	Ease* (inches) =	Total Measurement
	Remove clothing or wear only undergarments; gently wrap tape around body keeping tape level			
Bust	Measure at fullest point		3 - 4	
High Bust	Measure just above breasts, under the arms, and across the fullest part of the back		3 - 4	
Low Bust	Measure just under breasts and around back		3 - 4	
Neckline	Measure neck circumference 1 inch above base of neck		0.5 - 1	
Shoulders	Measure from base of neck to top of shoulder bone		0.5	
Back	Measure shoulder to shoulder across back		1 - 1.5	
Shoulder cap (depending on sleeve length, you may need up to 4 measurements)	Measure with arm slightly bent (as if you were going to slip your hand into a front pants pocket)			
a. Shoulder Cap	Top of shoulder to 0.5 inch below wrist bone		N/A	
b. Upper Arm Length	Measure top of shoulder to outside center of elbow		N/A	
c. Upper Arm Circumference	Measure around upper arm at armpit		0.5 - 2	
d. Wrist	Measure around widest part of hand		0.5 - 1	
Derriere	Measure widest part of hips		2 - 4	
Back	Measure down your back from the prominent bone at base of neck down to your waistline		1 - 2	
ftighs	Measure 9 inches down from waistline, around heaviest part of single thigh		1 - 3	
Inseam	Measure from crotch to ankle bone on inside of leg		0.5 - 1	

* fte chart provides a range of ease measurements for constructing a fitted garment. Be cautious when determining the exact amount of ease to include with your measurements. Ease amounts vary depending on your pattern instructions, the type of fabric used, and your fit and style preferences.

PATTERNS ALTERATION STANDARDS:

- Original grain-lines are saved.
- Patterns are kept in balance and proportion.
- Change is created only where needed and is not obvious.
- Designer's lines are protected.

HOW TO CHECK THE ALTERED FIT:

Before cut the fashion fabric check the pattern fit, only the basic parts of the garment together. Take a helping person who helps you to check the fit of the garment. Otherwise you stand in front of a full-length mirror. Use the following checklist that helps you, if further alterations or minor fitting is needed for a good fit.

- ✓ Adequate wearing ease is available for sitting, moving and bending.
- ✓ Armhole seams curve smoothly over the end of shoulder.
- ✓ Crosswise grain lines are parallel to floor.
- ✓ Crotch depth is right, neither too low and baggy nor too tight and binding.

- ✓ Darts point to the fullest part of the curve.
- ✓ Hemline is even.
- ✓ Hipline fits smoothly.
- ✓ Lengthwise grain lines, side seams, center front and center back seams hang straight or at right angles to the floor.
- ✓ Pant legs hang smoothly and do not restrict any part of the legs.
- ✓ Pants hang smoothly from the waist. The waistband fits the body comfortably and stays in place when bending and sitting.
- ✓ Pants have no pulls or excess fabric across the front or back crotch level.
- ✓ Shoulder seam length comes to end of shoulders.
- ✓ Sleeves are comfortable with no wrinkles.
- ✓ The length of the garment is becoming.

BASIC ALTERATIONS

1. Altering the Length

If the garment is too short or too long can able to lengthen or shorten the pattern before cutting the fabric. Usually one can make the alterations on the horizontal dashed lines marked on the patterns, such as elbow line, waistline or a hip line. On sleeves one can alter the length on the elbow line, on dresses on the waist and hip line and on trousers and skirts on the knee line.

2. Shortening a Pattern

- Measure the length of the pattern and take the same measurement on your body
- Compare the pattern measurements with individual measurements and calculate the difference
- Draw a horizontal line on the pattern at the level where it needed to be shortened (for example waist, hip, knee etc)
- Draw a parallel line just above periodically drawn line
- Cut the pattern into two parts from the lower line. Move and tape the lower piece straight up on the level of the upper line. Make sure that the centre front/back remains straight
- Draw the sides of the pattern smooth and continuous
- Check that seams that will be sewn together still have the same length

If the pattern gets shortened a lot, it is good to divide the difference into more than one line, for example on the waist and hip or hip and knee, in order to keep the proportions correct. It can be also measure the actual length from waist to hip so that it is easy to calculate the length to be reduced.

3. Lengthening a Pattern

- Measure the length of the pattern and take the same measurement of the body
- Compare the pattern measurements with individual body measurements and calculate the difference
- Draw a horizontal line on the pattern at the level where it has to be lengthened (for example waist, hip, knee etc)

- Cut the pattern into two parts through the lengthening line. Place a piece of paper under the pieces and tape the lower part on it
- Draw a parallel line on the paper, the required amount above the edge of the pattern
- Tape the edge of upper pattern piece on the line. Make sure that the center front/back remains straight
- Draw the sides of the pattern smooth and continuous
- Check that the seams that will be sewn together still have the same length.

4. **Altering the Width of a Pattern**

- Altering the Width of a Pattern from Seam
- Measure the length of the pattern and take the same measurement of the body
- Compare the pattern measurements body measurements and calculate the difference. If the difference is significant width can be reduced or added from or to the waist darts, depending on the garment.
- Divide the difference evenly to all seams and mark the difference with a dot on each part has to be changed.
- Draw the outline of the pattern through the dot, adapting to the original shape.
- Check that the new line is not too steep or curved – in that case it will not fit properly after sewing. In case of improper fit allowance reduced or added can be from/to the waist darts.
- Check that seams that will be sewn together still have the same length.

Note that the patterns of slim garments that are made of elastic fabrics can be slightly smaller than actual body measurements.

5. **Altering the Width of a Pattern from Waist Darts**

- Measure the waist of the pattern and individual waist.
- Compare the pattern measurements with your own measurements and calculate the difference.
- Add or reduce the difference to/from all waist darts so that one can add or reduce the same amount from the side of each dart and draw new lines towards the tip of the dart.
- Check that the sides of darts are the same length and that the edge of the pattern continues smoothly over the darts.

Note that the darts should not be too wide. The back darts closest to center back should be wider than the other back darts – the width should not be more than 3-4 cm. Front darts should not be wider than 2,5 cm.

If there are two back darts, the darts closer to side seam can be left unsewn; this gives the waist more fullness. In this case, draw the edge of the pattern smooth above the dart that you are not sewing.

PRINCIPLES OF PATTERN ALTERATION:

- A far as possible make changes within the **pattern** by slashing and spreading or slashing and lapping. Patterns can also be altered by redrawing the edges of the pattern. (This is the method adopted for altering garments at the time of fitting.) But the first method is by far the best in altering paper patterns.
- To preserve the original grain line, make all slashes and folds parallel or perpendicular to the grain line (to center front line, center back line etc).
- Where there are darts, make changes between the tip of the dart and the outside edge.
- If an alteration in length is made along one edge of the pattern, take care to make an identical alteration in the adjoining edge. For example, if back shoulder seam is shortened the front shoulder seam should also be shortened.
- When tucks or darts are used for making a pattern smaller, remember that the width of these should be just half the amount to be removed.
- When decreasing or increasing the width of pattern pieces, if only half the pattern (half back or half front) is used, subtract or add only one fourth of the total adjustment to be made. For example, if waist measurement has to be increased by one inch, add $\frac{1}{4}$ " to the half back pattern and the same amount to the front pattern. If only a front or back section needs adjustment, add or minus half the amount of the adjustment to the respective section.
- When the pattern alteration involves slashing and spreading, it is necessary to keep a sheet of paper beneath and to pin or stick to it the spread-out parts so that they will thereafter remain in position. On spreading or lapping after slashing, some edges of the pattern become jagged. These must be trimmed after drawing the new seam lines.

ADVANTAGES OF PATTERN ALTERATIONS:

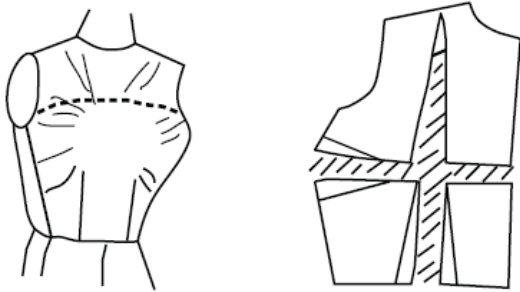
1. To get a perfect fit on your figure, garment is cut after the pattern is altered.
2. If the pattern is altered before the fabric is cut, there will be no adjusting in the final fitting.
3. There is no danger of wasting expensive fabric and spoiling the garment.
4. Each adjustment necessary in the flat pattern for saving time and avoid ripping later.
5. Sometimes alterations are essential to get perfect pattern.

Keep the records of pattern alterations and their effectiveness; it is the way to perfect individual requirements.

ALTERING BODICE PATTERNS

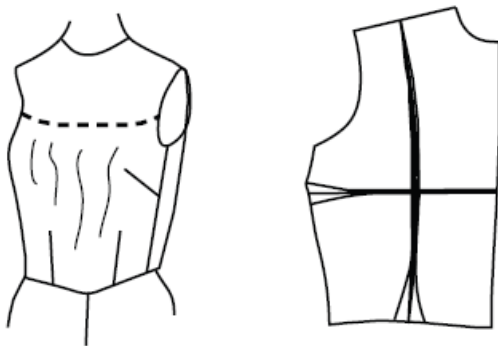
1. Full Bust (large cup size)

Slash across the pattern along bust dart foldline to center front. Slash across the pattern from waist to shoulder along waist dart foldline. Spread the desired amount at center front and bust area. Do not spread at shoulder seam. Redraw seamlines and darts. (New darts will be larger than the original darts.)



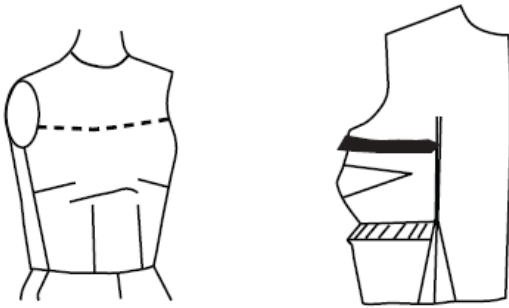
2. Small Bust (small cup size)

Slash across the pattern along bust dart foldline to center front. Slash across pattern from waist to shoulder along waist dart foldline. Overlap darts the desired amount to decrease the bust area. Do not overlap at shoulder seam. (New darts will be smaller than the original darts.)



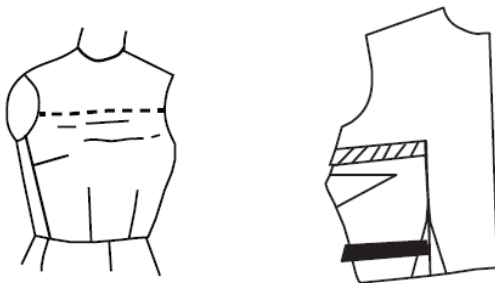
3. High Bust

Slash below dart and up to armscye (or armhole) level. Fold out desired amount above the dart. Lengthen the waistline dart as needed. Redraw seamline below dart.



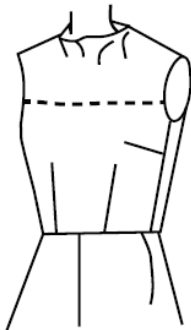
4. Low Bust

Slash above dart and down to waist. Fold out desired amount below dart. Shorten the waistline dart as needed. Redraw seamline above dart.



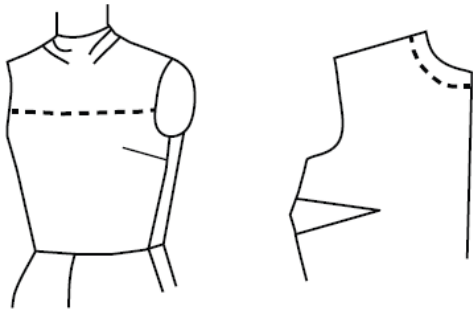
5. Small Neck

Redraw neckline to raise it the desired amount. Add the same amounts to the facing and collar patterns.



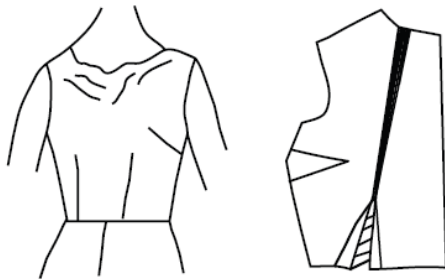
6. Large Neck

Redraw neckline to lower it the desired amount. Alter the facing and collar patterns to match the new neckline.



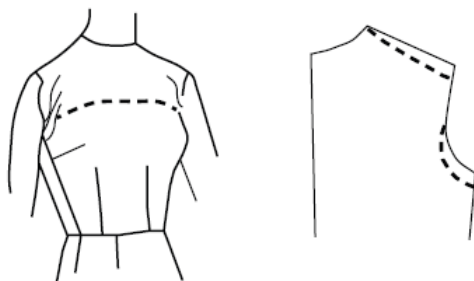
7. Gaping Neckline

Slash from neckline down through bust area to waist. Overlap the desired amount on neck edge; the waistline dart will become larger. Remember to alter the neckline facing and collar patterns to fit the altered neckline.



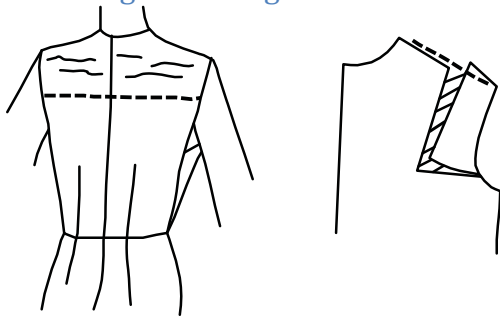
8. Sloping Shoulders

Redraw shoulder seam and armhole seams, sloping and lowering them the desired amount. Be sure to redraw seams on both front and back pattern pieces.



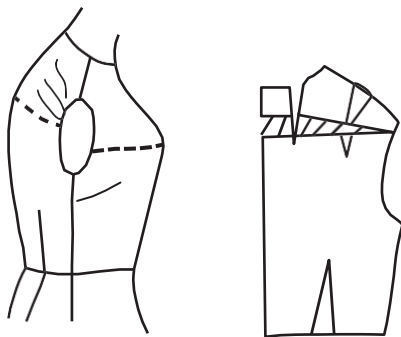
9. Broad Shoulders

Slash from midpoint of shoulder down and across to the middle of armhole. Spread pattern the desired amount. Redraw seam from neckline to armhole. Be sure to complete alterations for both bodice front and back.



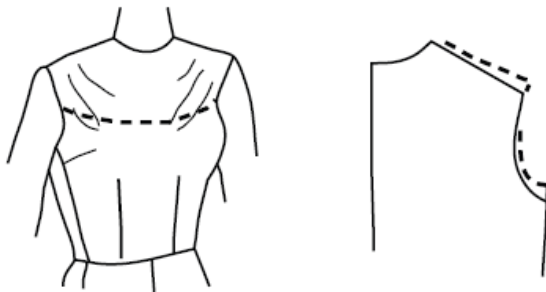
10. Round Shoulders

Slash across the back from center back to armhole. Slash down from middle of neckline curve. Spread the desired amounts, making the addition at the neckline a new dart.



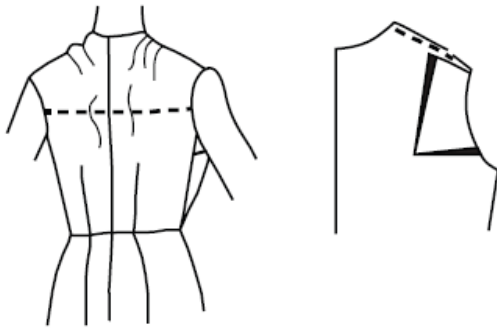
11. Square Shoulders

Redraw shoulder seam and armhole seams, raising them the desired amount. Be sure to redraw seams on both front and back pattern pieces



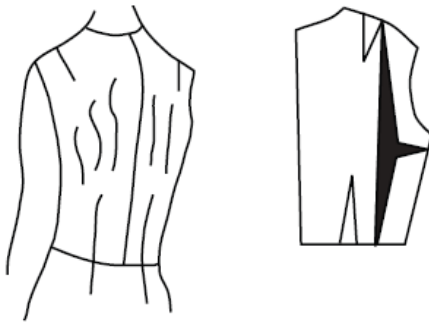
12. Narrow Shoulders

Slash from midpoint of shoulder down and across to middle of armhole. Overlap pattern the desired amount, and redraw. Be sure to complete alterations for both bodice front and back.



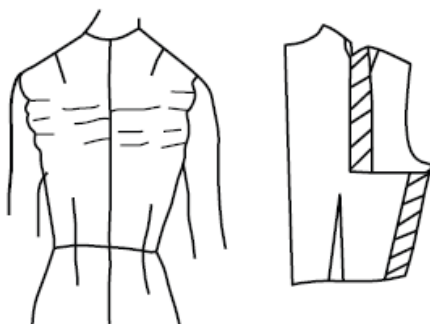
13.Narrow Back

Slash from shoulder to waist. Slash from underarm side seam to first slash. Overlap pattern sections the desired amount, but do not overlap at shoulder or waistline.



14.Broad Back

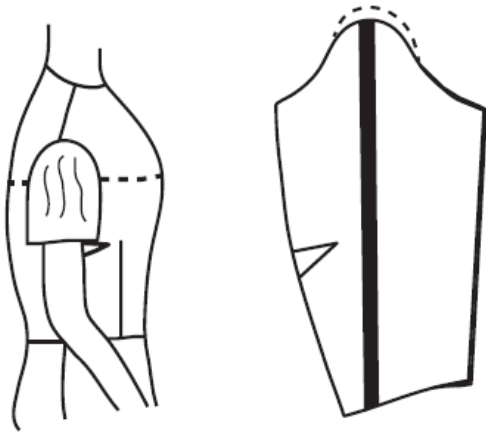
Slash down from midpoint of shoulder to bottom of armseye and across. Spread pattern the desired amount. Redraw side seam and shoulder dart. (The new dart will be larger than the original one.)



15.Small Arm

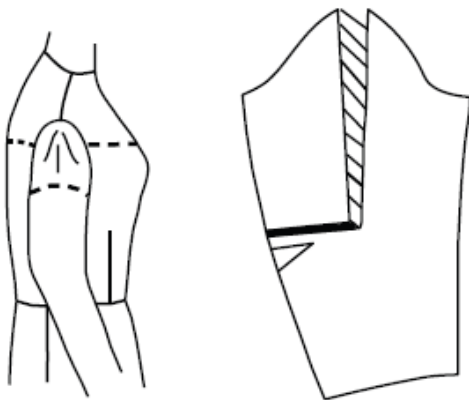
Measure the length of the original seam at the top of the sleeve and record the measurement. On the pattern, fold out the desired amount along a line from top to bottom of sleeve. Redraw lines at hem of sleeve and cap to make a smooth seamline. Measure the length of the new seam at the

top of the sleeve; figure the difference from the original seam. Remove 1/2 the difference from the underarm seams of both the bodice front and back.



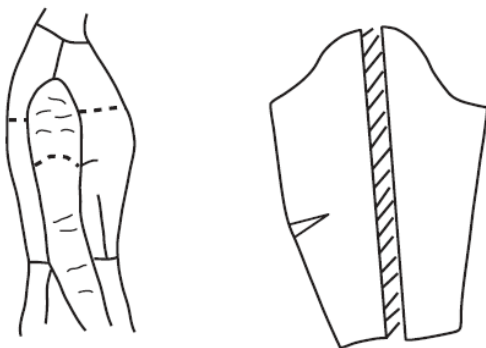
16. Sleeve Cap Too Narrow

Slash from top of sleeve to elbow, then across to side seam. Spread the desired amount at the top. Redraw cap. Add 1/2 the amount added to the shoulder cap to the shoulder seam on both the bodice front and back.



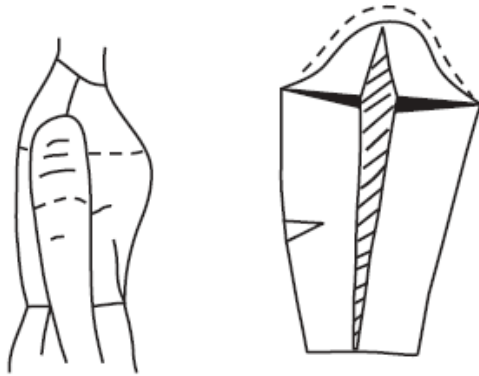
17. Large Arm

Slash sleeve down the center from top to bottom and spread the desired amount. Add 1/2 the amount added to the sleeve to the bodice front and back side seam.



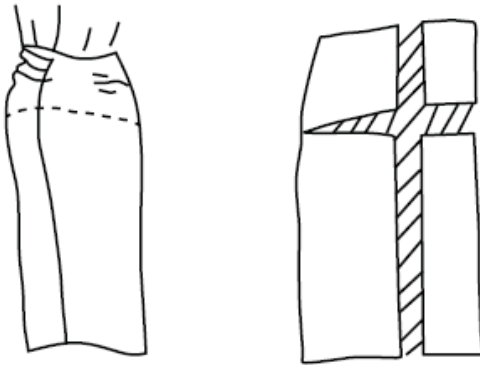
18. Large Upper Arm

Measure the length of the original seam at the top of the sleeve and record the measurement. Slash sleeve down the center from top to bottom. Slash across cap. As you pull the sleeve open to make it wider, the cap will become shorter; redraw the cap to its original height. Measure the length of the new seam at the top of the sleeve. Figure the difference from the original seam. Add $\frac{1}{2}$ of the difference to the underarm seams of both the bodice front and back.



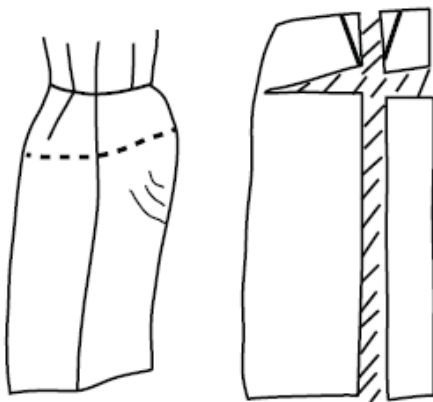
1.Protruding Derriere

Slash from waistline to hemline parallel to center back through waistline dart. In hip area, slash across pattern from center back to side seam. Spread the pattern the width and length desired. Redraw dart and seamlines. (The new dart will be larger than the original dart.)



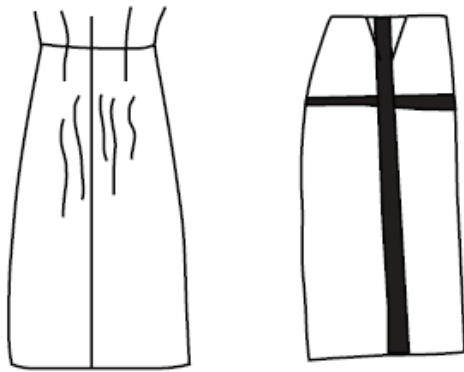
2.Protruding Abdomen

Slash from waistline to hemline parallel to center front through waistline dart. In the abdomen area, slash across the pattern from center front to side seam. Spread the pattern the desired amount to increase in width and length. Redraw dart and seamlines. (The new dart will be smaller than the original, and the waistline seam will curve up.)



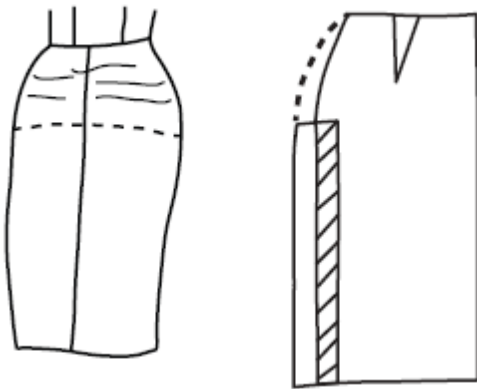
3.Flat Derriere

Slash parallel to center back from waistline to hemline through the waistline dart. In hip area, slash across pattern from center back to side seam. Overlap pattern in hip area the desired amount to reduce width and length. Redraw dart and seamlines. (The new dart will be smaller than the original.)



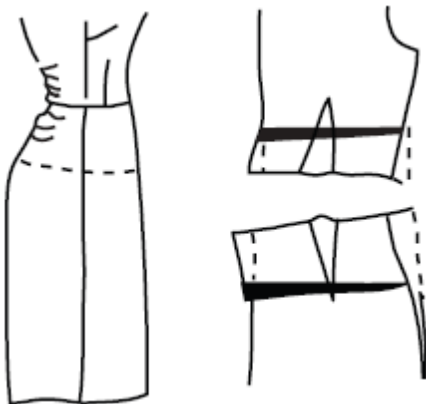
4. Bulging Thigh or Wide Hips

Slash parallel to the side seam from hemline up to thigh or hip area, then across to side seam. Spread the desired amount. Redraw seamline from waistline to hem.



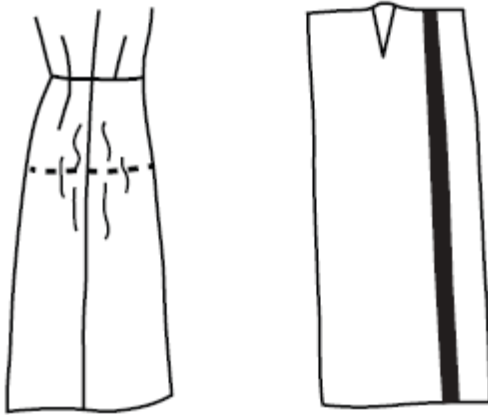
5. Sway Back

On bodice back just above waistline, fold out desired amount and redraw side seam, dart, and center back seam. On skirt back just below waistline, fold out desired amount and redraw side seam, dart, and center back seam.



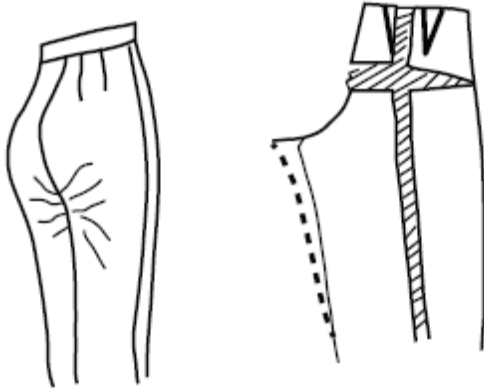
6.Flat Side Hip

Fold out the desired amount along the side seam of skirt front and skirt back. Fold should be parallel to center front and center back.



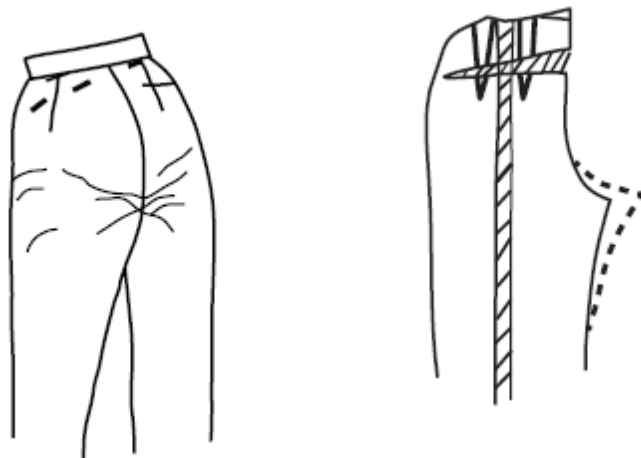
1. Protruding Derriere

Slash pattern back from waistline down center of leg parallel to grainline. In hip area, slash across from center back to side seam. Spread to add desired amount. Redraw darts. Redraw crotch seam and inseam to add needed length.



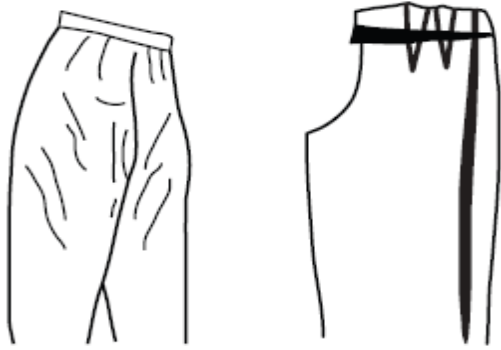
2. Protruding Abdomen

Slash at center front and spread to add the desired amount at waistline. Taper the waistline to the side seam and redraw darts. Redraw crotch seam and inseam to add amount needed to front crotch length and leg.



3. Flat Derriere

Fold pattern at center back to decrease fullness the desired amount, tapering waistline to the side seam. Fold out desired amount at side hip of back pattern piece only



4.Sway Back

Slash at front side hip and spread pattern the desired amount. Redraw to smooth seamline. Repeat for back side hip.



5.Bulging Thighs

Fold out the desired amount below the waistline to decrease the length of center back crotch seam. Redraw side seam, darts, and center back seam.

