This publication covers alterations for crotch depth, crotch and thigh circumference, and large pines. Before attempting any of these, review Extension publications E-372, Principles of Pattern Alteration, and E-373, Personal Measurement Chart, for basic instructions.

The most important area to consider when fitting pants is the crotch. You might have to undertake several trial alterations to fit pants properly. Frequently, you will need to combine crotch depth and crotch circumference adjustments.

**Crotch Depth**

If the crotch depth is too short, your pants will pull and bind between the legs. If it is too long, the pants will hang loosely there.

Check the Personal Measurement Chart (line 14) to determine how much you need to alter and compare this measurement with the pattern’s crotch depth. Make crotch depth alterations before making any crotch circumference alterations. Make all crotch depth alterations on front and back pattern pieces.

To shorten:

1. Fold the pattern by the amount you need along the lengthening and shortening line designated on the pattern at the hip line.
2. Tape the pattern in place.
3. Redraw the cutting lines and stitching lines (Fig. 1).

To lengthen:

1. On a piece of tissue paper the width of the pattern, draw two parallel lines. The lines should be the same distance apart for the additional length you need.
2. Slash the pattern apart at the hip lengthening and shortening line.
3. On the tissue paper, tape the top part of the pattern to the top line and tape the bottom of the pattern to the bottom line. Keep the grain line straight.

4. Redraw the cutting lines and seamlines (Fig. 2).

### Crotch Circumference

If the pants do not fit correctly after you have finished the crotch depth alterations, you may need to alter the crotch circumference. The Personal Measurement Chart (line 15) will show you how much to adjust.

Divide the total circumference into front and back lengths. (A large ring hanging on the tape measure will usually fall to the center of the body when you measure the circumference.)

Compare the pattern front and back crotch lengths to your body measurements. If you need an alteration, carefully study your figure and pants that fit you. Alter the pattern piece only where measurements indicate you need a change in order to get a good fit.

A large abdomen or full buttocks can cause the pants crotch circumference to fit tightly. Flat buttocks or sway back may cause the pants crotch circumference to be too long. For these alterations, refer to Extension publications E-387, Large Abdomen; E-374, Back Hip Fullness; and E-382, Sway Back, for specific instructions. The alteration amount and location will depend on the type and complexity of the alteration you need. You may need to make large decreases or increases in length in two or three locations (Fig. 3).

### Alteration Challenges and Answers

The following descriptions of problems and solutions may help you determine which alteration you need:

- **Problem A** (Fig. 4): A large abdomen causes diagonal wrinkles to form at the front crotch and around the abdomen. **Solution:** Lengthen only the front crotch circumference.

- **Problem B** (Fig. 5): Full buttocks cause the seat to cup under the buttocks and to fit tightly in the back. **Solution:** Lengthen only the back crotch circumference.

- **Problem C** (Fig. 6): Full buttocks and/or full thighs cause the back waist to pull down when you sit and pull tightly in the back crotch area when you stand. **Solution:** Lengthen the back crotch circumference at the center back.

- **Problem D** (Fig. 7): Flat buttocks cause a baggy seat. **Solution:** Shorten the crotch back length.

- **Problem E** (Fig. 8): Sway back causes fabric to wrinkle horizontally in the back just below the waistline. **Solution:** Shorten the crotch back length.

Figure 9 shows an example of a crotch circumference alteration for full buttocks. Extension publications listed on page 2 will help you solve crotch circumference problems.
**Thigh Circumference**

Use a crotch circumference alteration when the thigh area is too tight or too loose. A thigh width alteration also increases or decreases the crotch circumference. If the thigh is too tight, pants will form crosswise wrinkles at the top of the leg. You will see strain on the side seam and inseam. Vertical folds will hang from the hip if the thigh is too loose. Alter *front and back pattern pieces* (Fig. 10).

Determine how much you need to alter for thigh circumference by measuring the fullest part of the upper leg. Compare this measurement to the total width of the front and back pattern pieces. Increase or decrease the *front and back pattern pieces* by one-half the total amount you need.

To alter:

1. On the crotch curve, measure in 1 inch (2.5 cm) from the intersection of the crotch seamline and the inseam line.
2. Draw a line from this point to the knee at the inseam line (Fig. 11).
3. Slash along this line to, but not through, the inseam line at the knee. Clip the seam allowance at that point.

To increase:

4. With tissue paper under the pattern, spread one-half the total amount you need (Fig. 12).

To decrease:

4. Lap the slash one-half the total amount you need (Fig. 13).

To complete either alteration:

5. Tape the pattern in place.
6. Redraw the cutting lines and seamlines at the crotch curve (Figs. 14a and 14b).

**Large Pones**

Large pones on the upper thighs cause crosswise wrinkles at the side seamline in the front and back (Fig. 15). Determine where to alter by measuring the distance from the waistline to the fullest part of the pone. To indicate how much to alter, measure the fullest part of the upper legs and add ease. Then compare that amount to the pattern measurement at that point. Make this alteration on *front and back pattern pieces*, increasing each piece one-half the total amount you need.
1. Measure down the side seamline to a point corresponding to the pone. Draw a horizontal line at that point from the side seamline 3 inches (1.6 cm) into the pattern. Draw diagonal lines from this point to the seamline at the knee and to the waist seamline and side seamline intersection (Fig. 16).

2. Beginning at the intersection of the three lines, slash the lines to, but not through, the side seamlines. Clip the seam allowances to the end of each slash.

3. With tissue paper under the pattern, spread the pattern to add one-half the amount you need at the widest point of the thigh. The horizontal slash will lap.

4. Tape the pattern in place. Redraw the seam and cutting lines as needed (Fig. 17).